
SIMPONI[®]

Solution for Injection in a pre-filled syringe

Solution for Injection in a pre-filled pen, SmartJect[®]

SIMPONI[®] IV

Solution for Intravenous Infusion in a Vial

AUSTRALIAN PRODUCT INFORMATION

1 NAME OF THE MEDICINE

Golimumab (rmc)

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

SIMPONI pre-filled syringe for subcutaneous injection

SIMPONI is supplied as a sterile solution in a Type 1 glass syringe with a fixed stainless-steel needle. The needle shields are manufactured from dry natural rubber containing latex (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**, "Allergic reactions"). SIMPONI is available in two strengths: 50 mg of golimumab in 0.5 mL and 100 mg of golimumab in 1 mL. SIMPONI is available in packs of 1 or 3* pre-filled syringe(s).

SIMPONI SmartJect injector pen for subcutaneous injection

SIMPONI is supplied as a sterile solution in a Type 1 glass syringe with a fixed stainless-steel needle. This syringe is contained in a single-use pre-filled pen called "SmartJect". The needle shields are manufactured from dry natural rubber containing latex (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**, "Allergic reactions"). SIMPONI is available in two strengths: 50 mg of golimumab in 0.5 mL and 100 mg of golimumab in 1 mL. SIMPONI is available in packs of 1 or 3* pre-filled pen(s).

* Not currently supplied in Australia.

SIMPONI IV vial for intravenous injection

SIMPONI IV is supplied as a colourless to light yellow solution in a Type 1 glass vial with a laminated serum stopper with aluminium seal and a dark blue coloured flip-off button.

Each single use vial contains 50 mg golimumab per 4 mL vial (or 12.5 mg of golimumab per mL).

For the full list of excipients, see **Section 6.1 List of excipients**.

3 PHARMACEUTICAL FORM

SIMPONI

Subcutaneous

Solution for injection in pre-filled syringe or pre-filled pen, as a clear to slightly opalescent, colourless to light yellow solution.

SIMPONI IV

Intravenous

Solution for intravenous infusion in vial as a colourless to light yellow solution.

4 CLINICAL PARTICULARS

4.1 THERAPEUTIC INDICATIONS

SIMPONI

Rheumatoid arthritis (RA)

SIMPONI, in combination with methotrexate, is indicated for:

The treatment of moderate to severely active rheumatoid arthritis in adult patients when the response to disease-modifying anti-rheumatic drug therapy, including methotrexate, has been inadequate. SIMPONI has also been shown to inhibit the progression of joint damage as measured by X-ray.

Psoriatic arthritis (PsA)

SIMPONI, alone or in combination with methotrexate, is indicated for:

The treatment of active and progressive psoriatic arthritis in adult patients when the response to previous disease-modifying anti-rheumatic drug therapy has been inadequate. SIMPONI has also been shown to inhibit the progression of peripheral joint damage as measured by X-ray in patients with polyarticular symmetrical subtypes of the disease, and improve physical function.

Axial Spondyloarthritis

Ankylosing spondylitis (AS)

SIMPONI is indicated for:

The treatment of active ankylosing spondylitis in adult patients.

Non-radiographic axial spondyloarthritis (nr-Axial SpA)

SIMPONI is indicated for the treatment of adults with active non-radiographic axial spondyloarthritis with objective signs of inflammation as indicated by elevated C-reactive protein (CRP) and/or magnetic resonance imaging (MRI) evidence, who have had an inadequate response to, or are intolerant to, nonsteroidal anti-inflammatory drugs (NSAIDs).

Ulcerative colitis (UC)

SIMPONI is indicated for:

The treatment of moderately to severely active ulcerative colitis in adult patients who have had an inadequate response to conventional therapy. Patients should show a clinical response within 6 weeks of treatment to continue treatment beyond that time (see section **5.1 PHARMACODYNAMIC PROPERTIES, Clinical Trials**).

SIMPONI IV

Rheumatoid arthritis (RA)

SIMPONI IV, in combination with methotrexate, is indicated for:

The treatment of moderate to severely active rheumatoid arthritis in adult patients when the response to disease-modifying anti-rheumatic drug therapy, including methotrexate, has been inadequate. SIMPONI IV has also been shown to inhibit the progression of joint damage as measured by X-ray.

Psoriatic arthritis (PsA)

SIMPONI IV, alone or in combination with methotrexate, is indicated for:

The treatment of active and progressive psoriatic arthritis in adult patients when the response to previous disease-modifying anti-rheumatic drug therapy has been inadequate.

Ankylosing spondylitis (AS)

SIMPONI IV is indicated for:

The treatment of active ankylosing spondylitis in adult patients.

4.2 DOSE AND METHOD OF ADMINISTRATION

SIMPONI/SIMPONI IV treatment is to be initiated and supervised by qualified physicians experienced in the diagnosis and treatment of rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, non-radiographic axial spondyloarthritis or ulcerative colitis.

The efficacy and safety of switching between intravenous and subcutaneous formulations and routes of administration have not been established.

SIMPONI

SIMPONI pre-filled pens and pre-filled syringes are administered by subcutaneous injection only and are not intended for intravenous infusion.

After proper training in SC injection technique, patients may self-inject with SIMPONI if their physician determines that this is appropriate, with medical follow-up as necessary.

Rheumatoid arthritis, Psoriatic arthritis and Ankylosing spondylitis

SIMPONI 50 mg given as a subcutaneous injection once a month, on the same date each month.

Non-radiographic axial spondyloarthritis

SIMPONI 50 mg given as a subcutaneous injection once a month, on the same date each month.

Available data in non-radiographic axial spondyloarthritis suggest that clinical response is usually achieved within 12 to 14 weeks of treatment (after 3-4 doses). Continued therapy should be reconsidered in patients who show no evidence of therapeutic benefit within this time period.

Ulcerative colitis

SIMPONI 200 mg given as a subcutaneous injection at Week 0, followed by 100 mg at Week 2 and then 100 mg every 4 weeks, thereafter.

During maintenance treatment, corticosteroids may be tapered in accordance with clinical practice guidelines.

SIMPONI IV

SIMPONI IV vial is administered by intravenous infusion only and is not intended for subcutaneous injection.

Rheumatoid arthritis, Psoriatic arthritis and Ankylosing spondylitis

2 mg/kg of SIMPONI IV given as a 30-minute intravenous infusion at Weeks 0 and 4, then every 8 weeks thereafter.

Instructions for administration and disposal

SIMPONI

Subcutaneous administration

Prior to administration, visually inspect the solution for particles and discolouration through the viewing window. SIMPONI should be clear to slightly opalescent and colourless to light yellow. The solution should not be used if discoloured, or cloudy, or if foreign particles are present.

The needle cover on the pre-filled syringe as well as the pre-filled syringe in the pre-filled pen, contains dry natural rubber (a derivative of latex), which should not be handled by persons sensitive to latex (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**).

At the time of dosing, if multiple injections are required, the injections should be administered at different sites on the body. Injection sites should be rotated and injections should never be given into areas where the skin is tender, bruised, red, or hard.

Comprehensive instructions for the administration of SIMPONI are given in the Patient Instruction Leaflet. This product is for single use in one patient only. Patients should be instructed to inject the full amount of SIMPONI according to the directions provided in the Patient Instruction Leaflet. Does not contain any preservatives. Discard any residue; any unused product or waste material should be disposed of in accordance with local requirements.

SIMPONI IV

Intravenous administration

Intravenous infusion of SIMPONI IV should be administered by qualified health care professionals trained to detect any infusion related issues.

1. Use aseptic technique.
2. Calculate the dose and the number of SIMPONI IV vials needed based on patient weight. Each 4 mL vial of SIMPONI IV contains 50 mg of golimumab.
3. Check that the solution is colourless to light yellow. The solution may develop a few fine translucent particles, as golimumab is a protein. Do not use if opaque particles, discoloration, or other foreign particles are present.
4. Dilute the total volume of the SIMPONI IV solution dose to 100 mL with 0.9% w/v sodium chloride for infusion. This can be accomplished by withdrawing a volume of the 0.9% w/v sodium chloride solution from the 100 mL glass bottle or infusion bag equal to the volume of SIMPONI IV and discard the withdrawn solution. Alternatively, SIMPONI IV can be diluted using the same method described above with 0.45% w/v sodium chloride for infusion.
5. Slowly add the total volume of SIMPONI IV solution to the 100 mL infusion bottle or bag. Gently mix.
6. Visually inspect parenteral medicinal products for particulate matter or discoloration prior to administration. Do not use if visibly opaque particles, discoloration or foreign particles are observed.
7. Infuse the diluted solution over a period of 30 ± 10 minutes. The infusion of the diluted solution should be completed within 6 hours after preparation.
8. Use only an infusion set with an in-line, sterile, non-pyrogenic, low protein-binding filter (pore size 0.22 micrometer or less). Do not store any unused portion of the infusion solution for reuse.
9. No physical biochemical compatibility studies have been conducted to evaluate the co-administration of SIMPONI IV with other agents. Do not infuse SIMPONI IV concomitantly in the same intravenous line with other drugs.
10. Any unused product or waste material should be disposed of in accordance with local requirements.

SIMPONI IV is for single use in one patient only. Does not contain any preservatives. Discard any residue; any unused product or waste material should be disposed of in accordance with local requirements.

Elderly patients (≥ 65 years)

No dosage adjustment is required in the elderly (see sections **4.4 Special warnings and precautions for use**).

Paediatric patients (< 18 years)

SIMPONI/SIMPONI IV is not recommended for use in children below age 18 due to a lack of data on efficacy and safety.

Patients with impaired renal and/or hepatic function

SIMPONI/SIMPONI IV has not been studied in these patient populations. No dose recommendations can be made.

In the absence of compatibility studies, SIMPONI/SIMPONI IV must not be mixed with other medicinal products. SIMPONI/SIMPONI IV contains no antimicrobial agent.

4.3 CONTRAINDICATIONS

Active tuberculosis or other severe infections such as sepsis, and opportunistic infections (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**).

Concurrent administration of SIMPONI with anakinra or abatacept (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**).

Moderate or severe heart failure (NYHA class III/IV) (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**).

Hypersensitivity to the active substance or to any of the excipients.

4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**Infections**

Serious and sometimes fatal infections due to bacterial (including sepsis and pneumonia), mycobacterial, invasive fungal, viral, protozoal, or other opportunistic pathogens have been reported in patients receiving TNF-blockers including golimumab. Among opportunistic infections, tuberculosis, histoplasmosis, aspergillosis, candidiasis, coccidioidomycosis, listeriosis, legionellosis and pneumocystosis were the most commonly reported with TNF-blockers. Patients have frequently presented with disseminated rather than localised disease, and were often taking concomitant immunosuppressants such as methotrexate (MTX) or corticosteroids. The concomitant use of a TNF-blocker and abatacept or anakinra was associated with a higher risk of serious infections; therefore, the concomitant use of SIMPONI/SIMPONI IV and these biologic products is not recommended (see sections **4.3 CONTRAINDICATIONS** and **4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS**).

Treatment with SIMPONI/SIMPONI IV should not be initiated in patients with an active infection, including clinically important localised infections. The risks and benefits of treatment should be considered prior to initiating or continuing SIMPONI/SIMPONI IV in patients:

- with chronic or recurrent infection;

- who have been exposed to tuberculosis;
- with a history of an opportunistic infection;
- who have resided or travelled in areas of endemic tuberculosis or endemic mycoses, such as histoplasmosis, coccidioidomycosis, or blastomycosis; or
- with underlying conditions that may predispose them to infection.

Patients should be closely monitored for the development of signs and symptoms of infection during and after treatment with SIMPONI/SIMPONI IV. Because the elimination of golimumab may take up to 5 months, monitoring should be continued throughout this period. SIMPONI/SIMPONI IV should be discontinued if a patient develops a serious infection, an opportunistic infection, or sepsis. A patient who develops a new infection during treatment with SIMPONI/SIMPONI IV should undergo a prompt and complete diagnostic workup appropriate for an immunocompromised patient, appropriate antimicrobial therapy should be initiated, and the patient should be closely monitored.

Invasive Fungal Infections

For SIMPONI/SIMPONI IV -treated patients who reside or travel in regions where mycoses are endemic, invasive fungal infection should be suspected if they develop a serious systemic illness. Appropriate empiric antifungal therapy should be considered while a diagnostic workup is being performed. Antigen and antibody testing for histoplasmosis may be negative in some patients with active infection. When feasible, the decision to administer empiric antifungal therapy in these patients should be made in consultation with a physician with expertise in the diagnosis and treatment of invasive fungal infections and should take into account both the risk for severe fungal infection and the risks of antifungal therapy.

Tuberculosis

Cases of reactivation of tuberculosis or new tuberculosis infections have been observed in patients receiving TNF-blockers, including golimumab. In addition, patients who have previously received treatment for latent or active tuberculosis have developed tuberculosis while receiving TNF-blockers, including golimumab. Patients with tuberculosis have frequently presented with disseminated or extrapulmonary disease. Patients should be evaluated for tuberculosis risk factors (including close contact with a person with active tuberculosis) and tested for latent infection prior to initiating SIMPONI/SIMPONI IV and periodically during therapy. Treatment of latent tuberculosis infection should be initiated prior to therapy with SIMPONI/SIMPONI IV.

Anti-tuberculosis therapy should be considered prior to initiation of SIMPONI/SIMPONI IV in patients with a past history of latent or active tuberculosis in whom an adequate course of treatment cannot be confirmed.

Tests for latent tuberculosis may yield false negative results, especially in patients who are immunocompromised or severely ill. Prior to initiating SIMPONI/SIMPONI IV, treatment for latent tuberculosis should be considered in patients who have significant risk factors for tuberculosis despite a negative test for latent tuberculosis. The decision to initiate anti-tuberculosis therapy in these patients should only be made following consultation with a physician with expertise in the treatment of tuberculosis and taking into account both the risk for latent tuberculosis infection and the risks of anti-tuberculosis therapy.

Cases of active tuberculosis have occurred in patients treated with golimumab during and after treatment for latent tuberculosis. Patients receiving SIMPONI/SIMPONI IV should be

monitored closely for signs and symptoms of active tuberculosis, including patients who tested negative for latent tuberculosis infections, patients who are on treatment for latent tuberculosis, or patients who were previously treated for tuberculosis. Tuberculosis should be strongly considered in patients who develop a new infection during SIMPONI/SIMPONI IV treatment, especially in patients who have previously or recently travelled to countries with a high prevalence of tuberculosis, or who have had close contact with a person with active tuberculosis.

In the controlled and uncontrolled portions of the Phase 2 RA and Phase 3 RA, PsA, and AS trials, the incidence of active tuberculosis was 0.23 and 0 per 100 patient-years in 2347 SIMPONI-treated patients and 674 placebo-treated patients, respectively. In the controlled and uncontrolled portions of the Phase 3 RA, PsA, and AS trials, the incidence of active tuberculosis was 0.3 and 0 per 100 patient-years in 1248 SIMPONI IV-treated subjects and 539 placebo-treated subjects. Cases of tuberculosis included pulmonary and extra pulmonary tuberculosis. The overwhelming majority of the tuberculosis cases occurred in countries with a high incidence rate of tuberculosis.

Hepatitis B virus reactivation

The use of TNF-blockers including golimumab has been associated with reactivation of hepatitis B virus (HBV) in patients who are chronic hepatitis B carriers (i.e. surface antigen positive). Patients should be tested for Hepatitis B virus (HBV) infection before initiating treatment with immunosuppressants, including SIMPONI/SIMPONI IV. For patients who test positive for hepatitis B surface antigen, consultation with a physician with expertise in the treatment of hepatitis B is recommended. In some instances, HBV reactivation occurring in conjunction with TNF-blocker therapy has been fatal. The majority of these reports have occurred in patients who received concomitant immunosuppressants.

Patients at risk for HBV infection should be evaluated for prior evidence of HBV infection before initiating TNF-blocker therapy. The risks and benefits of treatment should be considered prior to prescribing TNF-blockers, including SIMPONI, to patients who are carriers of HBV. Adequate data are not available on whether anti-viral therapy can reduce the risk of HBV reactivation in HBV carriers who are treated with TNF-blockers. Patients who are carriers of HBV and require treatment with TNF-blockers should be closely monitored for clinical and laboratory signs of active HBV infection throughout therapy and for several months following termination of therapy.

In patients who develop HBV reactivation, TNF-blockers should be stopped and antiviral therapy with appropriate supportive treatment should be initiated. The safety of resuming TNF-blockers after HBV reactivation has been controlled is not known. Therefore, physicians should exercise caution when considering resumption of TNF-blockers in this situation and monitor patients closely.

Malignancies and lymphoproliferative disorders

The potential role of TNF-blocking therapy in the development of malignancies is not known. Based on the current knowledge, a possible risk for the development of lymphomas, leukaemia or other malignancies in patients treated with a TNF-antagonist cannot be excluded. Caution should be exercised when considering TNF-blocking therapy for patients with a history of malignancy or when considering continuing treatment in patients who develop malignancy.

Paediatric Malignancy

Post-marketing cases of malignancies, some fatal, have been reported among children, adolescents and young adults (up to 22 years of age) who received TNF-blocking agents (initiation of therapy \leq 18 years of age) to treat Juvenile Idiopathic Arthritis (JIA), Crohn's disease or other conditions. Approximately half the reports were lymphomas (Hodgkin's and non-Hodgkin's lymphoma). The other cases represented a variety of different malignancies and included malignancies that are not usually observed in children and adolescents. Most of the patients were receiving concomitant immunosuppressants, such as methotrexate, azathioprine or 6-mercaptopurine. The role of TNF blockers in the development of malignancies in children and adolescents remains unclear.

Lymphoma

In the controlled portions of clinical trials of all the TNF-blocking agents including SIMPONI, more cases of lymphoma have been observed among patients receiving anti-TNF treatment compared with control patients. During the SIMPONI Phase 2 and Phase 3 clinical trials in RA, PsA and AS, the incidence of lymphoma in SIMPONI-treated patients was higher than expected in the general population. Patients with rheumatoid arthritis and other chronic inflammatory diseases, particularly patients with highly active disease and/or chronic exposure to immunosuppressant therapies, may be at higher risk (up to several fold) than the general population for the development of lymphoma, even in the absence of TNF-blocking therapy.

Rare post-marketing cases of hepatosplenic T-cell lymphoma (HSTCL) have been reported in patients treated with other TNF-blocking agents. This rare type of T-cell lymphoma has a very aggressive disease course and is usually fatal. Nearly all of these cases have occurred in patients with Crohn's disease or ulcerative colitis. The majority were in adolescent and young adult males. Almost all these patients had received treatment with azathioprine (AZA) or 6-mercaptopurine (6-MP) concomitantly with a TNF-blocker at or prior to diagnosis. The potential risk with the combination of AZA or 6-MP and SIMPONI should be carefully considered. A risk for the development of hepatosplenic T-cell lymphoma in patients treated with TNF-blockers cannot be excluded.

Leukaemia

Cases of acute and chronic leukaemia have been reported with post-marketing TNF-blocker use, including golimumab, in rheumatoid arthritis and other indications. Even in the absence of TNF blocker therapy, patients with rheumatoid arthritis may be at a higher risk (approximately 2-fold) than the general population for the development of leukaemia.

Malignancies other than lymphoma

In the controlled portions of the SIMPONI Phase 2 and Phase 3 clinical trials in RA, PsA, AS and UC, the incidence of non-lymphoma malignancies (excluding non-melanoma skin cancer) was similar between the SIMPONI and the control groups.

In an exploratory clinical trial evaluating the use of SIMPONI in patients with severe persistent asthma, more malignancies were reported in patients treated with SIMPONI compared with control patients (see section **4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)**). The significance of this finding is unknown.

In an exploratory clinical trial evaluating the use of another anti-TNF agent, infliximab, in patients with moderate to severe chronic obstructive pulmonary disease (COPD), more

malignancies, mostly in the lung or head and neck, were reported in infliximab-treated patients compared with control patients. All patients had a history of heavy smoking. Therefore, caution should be exercised when using any TNF-antagonist in COPD patients, as well as in patients with increased risk for malignancy due to heavy smoking.

Colon Dysplasia/Carcinoma

It is not known if SIMPONI treatment influences the risk of developing dysplasia or colon cancer. All patients with ulcerative colitis who are at increased risk for dysplasia or colon carcinoma (for example, patients with long-standing ulcerative colitis or primary sclerosing cholangitis), or who had a prior history of dysplasia or colon carcinoma should be screened for dysplasia at regular intervals before therapy and throughout their disease course. This evaluation should include colonoscopy and biopsies per local recommendations. In patients with newly diagnosed dysplasia treated with SIMPONI/SIMPONI IV, the risks and benefits to the individual patient must be carefully reviewed and consideration should be given to whether therapy should be continued.

Skin cancers

Melanoma and Merkel cell carcinoma have been reported in patients treated with TNF blocking agents, including golimumab (see section **4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)**). Periodic skin examination is recommended for all patients, particularly those with risk factors for skin cancer.

Congestive Heart Failure

Cases of worsening congestive heart failure (CHF) and new onset CHF have been reported with TNF-blockers including golimumab. Some cases had a fatal outcome. Cases of CHF in patients with known cardiovascular risk factors have been observed with SIMPONI/SIMPONI IV. In several exploratory trials of other TNF-blockers in the treatment of CHF, there were greater proportions of TNF-blocker treated patients who had CHF exacerbations requiring hospitalisation or increased mortality. SIMPONI/SIMPONI IV has not been studied in patients with a history of CHF and SIMPONI/SIMPONI IV should be used with caution in patients with CHF. If a decision is made to administer SIMPONI to patients with CHF, these patients should be closely monitored during therapy, and SIMPONI/SIMPONI IV should be discontinued if new or worsening symptoms of CHF appear.

Demyelinating disorders

Use of TNF-blocking agents has been associated with cases of new onset or exacerbation of clinical symptoms and/or radiographic evidence of central nervous system demyelinating disorders, including multiple sclerosis (MS) and peripheral demyelinating disorders, including Guillain-Barré syndrome. Prescribers should exercise caution in considering the use of TNF-blockers, including SIMPONI/SIMPONI IV, in patients with central or peripheral nervous system demyelinating disorders. Discontinuation of SIMPONI/SIMPONI IV should be considered if these disorders develop.

Autoimmunity

Treatment with TNF-blocking agents, including golimumab, may result in the formation of autoantibodies and, rarely, in the development of a lupus-like syndrome. If a patient develops symptoms of a lupus-like syndrome following treatment with golimumab, treatment

should be discontinued (see section **4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)**, “Antinuclear antibodies (ANA)/anti-double-stranded DNA (dsDNA) antibodies”).

Haematological cytopaenias

There have been post-marketing reports of pancytopenia, leukopenia, neutropenia, agranulocytosis, aplastic anaemia, and thrombocytopenia in patients receiving TNF-blockers. Cytopaenias including pancytopenia, have been infrequently reported with golimumab in clinical trials. All patients should be advised to seek immediate medical attention if they develop signs and symptoms suggestive of blood dyscrasias (e.g. persistent fever, bruising, bleeding, pallor). Discontinuation of SIMPONI therapy should be considered in patients with confirmed significant haematological abnormalities.

Concurrent administration of SIMPONI with anakinra

Serious infections and neutropenia were seen in clinical studies with concurrent use of anakinra and another TNF-blocking agent, with no added clinical benefit. Because of the nature of the adverse events seen with this combination therapy, similar toxicities may also result from the combination of anakinra and other TNF-blocking agents. Therefore, the combination of SIMPONI/SIMPONI IV and anakinra is not recommended (see sections **4.3 CONTRAINDICATIONS** and **4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS**).

Concurrent administration of SIMPONI with abatacept

In controlled trials, the concurrent administration of another TNF-blocker and abatacept was associated with a greater proportion of serious infections than the use of a TNF-blocker alone; and the combination therapy, compared to the use of a TNF-blocker alone, has not demonstrated improved clinical benefit in the treatment of RA. Therefore, the combination of TNF-blockers including SIMPONI/SIMPONI IV and abatacept is not recommended (see sections **4.3 CONTRAINDICATIONS** and **4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS**).

Concurrent Administration with other Biological Therapeutics

There is insufficient information regarding the concomitant use of golimumab with other biological therapeutics used to treat the same conditions as SIMPONI/SIMPONI IV. The concomitant use of SIMPONI/SIMPONI IV with these biologics is not recommended because of the possibility of an increased risk of infection.

Switching between Biological Therapeutics

When switching from one biologic to another, patients should continue to be monitored since overlapping biological activity may further increase the risk of infection.

Surgery

There is limited safety experience of SIMPONI/SIMPONI IV treatment in patients who have undergone surgical procedures, including arthroplasty. The long half-life should be taken into consideration if a surgical procedure is planned. A patient who requires surgery while on SIMPONI/SIMPONI IV should be closely monitored for infections, and appropriate actions should be taken.

Immunosuppression

The possibility exists for TNF-blocking agents, including SIMPONI/SIMPONI IV, to affect host defences against infections and malignancies since TNF mediates inflammation and modulates cellular immune responses. In Phase I RA studies, in 81 patients evaluated, there

were no substantial differences between subjects receiving golimumab and placebo with respect to responses to delayed-type hypersensitivity antigens. The impact of treatment with golimumab on the development and course of malignancies, as well as active and/or chronic infections, is not fully understood.

Live Vaccine / Therapeutic Infectious Agents

Patients treated with SIMPONI/SIMPONI IV may receive concurrent vaccinations, except for live vaccines. In patients receiving anti-TNF therapy, limited data are available on the response to vaccination with live vaccines or on the secondary transmission of infection by live vaccines. Use of live vaccines could result in clinical infections, including disseminated infections.

Other uses of therapeutic infectious agents such as live attenuated bacteria (e.g., BCG bladder instillation for the treatment of cancer) could result in clinical infections, including disseminated infections. It is recommended that therapeutic infectious agents not be given concurrently with SIMPONI/SIMPONI IV.

Non-live Vaccines

Psoriatic arthritis patients treated with SIMPONI in one Phase 3 PsA study were able to mount effective B-cell immune responses to pneumococcal polysaccharide vaccine. Similar numbers of psoriatic arthritis patients receiving SIMPONI and not receiving SIMPONI had at least a 2-fold increase in antibody titres. The proportions of patients with response to pneumococcal vaccine were lower among SIMPONI and control-treated patients receiving MTX compared with patients not receiving MTX. Overall, the data indicate that SIMPONI does not suppress the humoral immune response to this vaccine.

Allergic reactions

Allergic reactions (e.g., rash, urticaria, and rarely anaphylaxis and serum sickness-like reactions) have been observed in patients treated with TNF-blocking agents. Serious allergic adverse reactions have not been reported with subcutaneous administration of SIMPONI during clinical trials. Non-serious allergic reactions associated with SIMPONI occurred in clinical trials, and included urticaria, bronchospasm and hypersensitivity. If an anaphylactic reaction or other serious allergic reactions occurs, administration of SIMPONI/SIMPONI IV should be discontinued immediately and appropriate therapy initiated.

Latex sensitivity

The needle cover on the pre-filled syringe and the pre-filled syringe in the pre-filled pen, is manufactured from dry natural rubber containing latex, and may cause allergic reactions in individuals sensitive to latex.

Hypersensitivity reactions

In-post marketing experience, serious systemic hypersensitivity reactions (including anaphylactic reaction) have been reported following SIMPONI administration. Some of these reactions occurred after the first administration of SIMPONI. If an anaphylactic or other serious allergic reaction occurs, administration of SIMPONI/SIMPONI IV should be discontinued immediately and appropriate therapy instituted.

Use in hepatic impairment

Specific studies of SIMPONI/SIMPONI IV have not been conducted in patients with hepatic impairment.

Use in renal impairment

Specific studies of SIMPONI/SIMPONI IV have not been conducted in patients with renal impairment.

Use in the elderly

In the Phase 3 SC studies in RA, PsA, and AS and the Phase 3 IV studies in RA, no overall differences in AEs, SAEs, and serious infections in patients age 65 or older who received SIMPONI/SIMPONI IV were observed compared with younger patients. In the Phase 3 IV studies in PsA and AS, there were insufficient numbers of patients aged 65 years and over to determine whether they respond differently from patients aged 18 to 65 years old. In UC, there were insufficient numbers of patients aged 65 and over to determine whether they respond differently from patients aged 18 to 65. Because there is a higher incidence of infections in the elderly population in general, caution should be used in treating the elderly. There were no patients aged 47 and over in the nr-Axial SpA study.

Paediatric use

Specific studies of SIMPONI/SIMPONI IV in paediatric patients have not been conducted.

Effects on laboratory tests

No data available

Potential for medication errors

SIMPONI is registered in 50 mg and 100 mg strengths for subcutaneous administration. It is important that the right strength is used to administer the correct dose as indicated in the posology (see section **4.2 Dose and method of administration**). Care should be taken to provide the right strength to ensure that patients are not underdosed or overdosed.

4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS

No interaction studies have been performed. For the effect of immunomodulators on golimumab in UC (see section **5.2 PHARMACOKINETIC PROPERTIES**).

Concurrent use of SIMPONI with other Biological Therapeutics

An increased risk of serious infections has been seen in clinical RA studies of other TNF-blockers used in combination with anakinra or abatacept, with no added benefit; therefore, use of SIMPONI/SIMPONI IV with abatacept or anakinra is not recommended (see sections **4.3 CONTRAINDICATIONS** and **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**). A higher rate of serious infections has also been observed in RA patients treated with rituximab who received subsequent treatment with a TNF-blocker.

The combination of SIMPONI/SIMPONI IV with other biological therapeutics used to treat the same conditions as SIMPONI/SIMPONI IV is not recommended.

Live vaccines / Therapeutic Infectious Agents

Live vaccines should not be given concurrently with SIMPONI/SIMPONI IV (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**).

Therapeutic infectious agents should not be given concurrently with SIMPONI (see **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**).

Methotrexate

No significant effect of methotrexate on the clearance of SIMPONI administered intravenously was observed. Although concomitant use of MTX results in higher steady-state trough concentrations of SIMPONI in patients with RA, PsA, or AS, population pharmacokinetic analyses of the data and observed data do not suggest the need for dose adjustment of either SIMPONI or MTX (see section **5.2 PHARMACOKINETIC PROPERTIES**).

4.6 FERTILITY, PREGNANCY AND LACTATION**Effects on fertility**

The potential effects of golimumab on fertility have not been investigated in animal studies.

Use in pregnancy – Pregnancy Category C

The use of SIMPONI/SIMPONI IV in pregnant women is not recommended. Women of childbearing potential should be advised to use adequate contraception and continue its use for at least 6 months after the last SIMPONI/SIMPONI IV treatment. Studies in cynomolgus monkeys have shown no untoward effects on the course of pregnancy, embryofoetal development, parturition or neonatal development, at doses achieving serum concentrations in excess of those expected with the recommended dose.

Golimumab crosses the placenta. Following treatment with another TNF-blocking monoclonal antibody during pregnancy, the antibody has been detected for up to 6 months in the serum of the infants born by the treated women. Consequently, these infants may be at an increased risk of infection. Administration of live vaccines to infants exposed to golimumab in utero is not recommended for 6 months following the mother's last golimumab injection during pregnancy.

It is not known whether SIMPONI/SIMPONI IV can cause foetal harm when administered to a pregnant woman or can affect reproduction capacity. SIMPONI/SIMPONI IV should be given to a pregnant woman only if clearly needed.

Use in lactation

It is unknown whether golimumab is excreted in human breast milk or absorbed systemically by infants after ingestion. Golimumab was detected in monkey breast milk at low concentrations. The mean breast milk to plasma concentration ratio was 0.002:1. Because many drugs and immunoglobulins are excreted in human milk, and because of the potential effects in infants, the use of SIMPONI while breastfeeding is not recommended. Breastfeeding should be discontinued for at least 6 months after the last SIMPONI/SIMPONI IV treatment.

4.7 EFFECTS ON ABILITY TO DRIVE AND USE MACHINES

No studies on the effects on the ability to drive and use machines have been performed.

4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)

Safety data from Phase 2 and 3 clinical trials are available from 6161 golimumab treated patients including 3090 with rheumatoid arthritis, 634 with psoriatic arthritis, 768 with

ankylosing spondylitis, 1245 with ulcerative colitis, 231 with severe persistent asthma, and 193 with active non-radiographic axial spondyloarthritis (nr Axial SpA).

Table 1 summarises the adverse drug reactions that occurred at a rate equal to or higher than 1% in SIMPONI groups and at a frequency higher than the placebo group through Week 16 of the Phase 3 studies in RA, AS and PsA, respectively (in 639 placebo and 1659 golimumab exposed patients).

The proportion of patients who discontinued treatment due to adverse reactions in the controlled Phase 3 trials through Week 16 in RA, PsA, and AS was 2% for SIMPONI-treated patients and 3% for placebo-treated patients. The most common adverse reactions leading to discontinuation of SIMPONI in the controlled Phase 3 trials through Week 16 were sepsis (0.2%), alanine aminotransferase increased (0.2%), and aspartate aminotransferase increased (0.2%).

Table 1: Adverse Drug Reactions Reported by \geq 1% of SIMPONI-treated Patients in the Phase 3 Trials of RA, PsA and AS through week 16^a

	Placebo \pm DMARDs N=639	SIMPONI \pm DMARDs N=1659
Upper respiratory tract infection (nasopharyngitis, pharyngitis, laryngitis and rhinitis)	92 (14%)	279 (17%)
Bacterial infections (such as cellulitis)	6 (1%)	24 (1%)
Viral infections (such as influenza and herpes)	20 (3%)	75 (5%)
Bronchitis	9 (1%)	31 (2%)
Sinusitis	8 (1%)	27 (2%)
Superficial fungal infections	8 (1%)	31 (2%)
Anaemia	6 (1%)	20 (1%)
Allergic reactions (bronchospasm, hypersensitivity, urticaria)	7 (1%)	24 (1%)
Depression	6 (1%)	18 (1%)
Insomnia	7 (1%)	22 (1%)
Dizziness	8 (1%)	33 (2%)
Paraesthesia	3 (1%)	27 (2%)
Headache	36 (6%)	75 (5%)
Hypertension	10 (2%)	51 (3%)
Constipation	2 (0%)	18 (1%)
Dyspepsia	10 (2%)	38 (2%)
Gastrointestinal and abdominal pain	17 (3%)	56 (3%)
Alanine aminotransferase increased	18 (3%)	58 (4%)
Aspartate aminotransferase increased	10 (2%)	44 (3%)
Alopecia	4 (1%)	18 (1%)
Dermatitis	7 (1%)	17 (1%)
Pruritus	10 (2%)	33 (2%)
Rash	15 (2%)	48 (3%)

	Placebo ± DMARDs N=639	SIMPONI ± DMARDs N=1659
Pyrexia	4 (1%)	20 (1%)
Asthenia	22 (3%)	70 (4%)
Injection site reaction (such as injection site erythema, urticaria, induration, pain, bruising, pruritus, irritation and paraesthesia)	14 (2%)	97 (6%)
Chest discomfort	7 (1%)	17 (1%)
a: Patients may have taken concomitant MTX, sulfasalazine, hydroxychloroquine, low dose corticosteroids (≤ 10 mg of prednisone/day or equivalent), and/or NSAIDs during the trials).		

Table 2 summarises the adverse drug reactions that occurred at a rate equal to or higher than 1% in the SIMPONI IV ± MTX with a higher incidence than in the placebo ± MTX group during the placebo-controlled period of the Phase 3 SIMPONI IV trials in the RA, PsA and AS with a 2 mg/kg dosing regimen.

Table 2: Adverse Drug Reactions Reported by $\geq 1\%$ of SIMPONI IV-Treated Patients and with a Higher Incidence than Placebo-Treated Patients in the Phase 3 Trials of RA (GO-FURTHER) and PsA (GO-VIBRANT) through Week 24 and AS (GO-ALIVE) through Week 16

	Placebo ± MTX N=539	SIMPONI IV ± MTX N=740
Neutrophil count decrease	5 (1%)	13 (2%)
Upper respiratory tract infection (such as upper respiratory tract infection, nasopharyngitis, pharyngitis, laryngitis, and rhinitis)	46 (9%)	96 (13%)
Viral infections (such as influenza and herpes)	20 (4%)	37 (5%)
Bronchitis	6 (1%)	13 (2%)
Sinusitis	5 (1%)	13 (2%)
Alanine aminotransferase increased	12 (2%)	33 (4%)
Aspartate aminotransferase increased	8 (1%)	20 (3%)
Hypertension	11 (2%)	26 (4%)
Rash	2 (<1%)	14 (2%)
Pyrexia	3 (1%)	10 (1%)

Table 3 summarises adverse drug reactions observed in Phase 2/3 clinical studies from the SIMPONI-treated and SIMPONI IV-treated patients with RA, PsA, AS, UC, and severe persistent asthma and with active non-radiographic axial spondyloarthritis (nr-Axial SpA). Within the designated system organ classes, the adverse reactions are listed under headings of frequency, using the following convention: very common ($\geq 1/10$); common ($\geq 1/100$ to $< 1/10$); uncommon ($\geq 1/1,000$ to $< 1/100$); rare ($\geq 1/10,000$ to $< 1/1,000$); very rare ($< 1/10,000$);

not known (cannot be estimated from the available data). Within each frequency grouping, adverse reactions are presented in order of decreasing seriousness.

Table 3: Tabulated List of Adverse Drug Reactions

Infections and infestations	
Very common:	Upper respiratory tract infection (nasopharyngitis, pharyngitis, laryngitis and rhinitis)
Common:	Bacterial infections (such as cellulitis), lower respiratory tract infection (such as pneumonia), viral infections (such as influenza and herpes), bronchitis, sinusitis, superficial fungal infections, abscess
Uncommon:	Sepsis including septic shock, opportunistic infections (such as invasive fungal infections [histoplasmosis, coccidioidomycosis, pneumocytosis], bacterial, atypical mycobacterial infection and protozoal), bacterial arthritis, pyelonephritis
Rare:	Hepatitis B reactivation, tuberculosis, infective bursitis
Neoplasms, benign, malignant and unspecified	
Uncommon:	Neoplasms (such as skin cancer, squamous cell carcinoma and melanocytic naevus)
Rare:	Lymphoma, leukaemia
Not known:	Paediatric malignancy
Investigations	
Common:	Alanine aminotransferase increased, aspartate aminotransferase increased
Uncommon:	Neutrophil count decreased
Blood and lymphatic system disorders	
Common:	Leucopaenia (including neutropaenia), anaemia
Uncommon:	Thrombocytopaenia, pancytopaenia
Rare:	Aplastic anaemia
Immune system disorders	
Common:	Allergic reactions (bronchospasm, hypersensitivity, urticaria), autoantibody positive
Rare:	Vasculitis (systemic)
Endocrine disorders	
Uncommon:	Thyroid disorder (such as hypothyroidism, hyperthyroidism and goitre)

Table 3: Tabulated List of Adverse Drug Reactions

Metabolism and nutrition disorders	Uncommon: Blood glucose increased, lipids increased
Psychiatric disorders	Common: Depression, insomnia
Nervous system disorders	Common: Dizziness, headache, paraesthesia Uncommon: Balance disorders Rare: Demyelinating disorders (central and peripheral), dysguesia
Eye disorders	Uncommon: Visual disorders (such as blurred vision and decreased visual acuity), conjunctivitis, eye allergy (such as pruritis and irritation)
Cardiac disorders	Uncommon: Arrhythmia, ischemic coronary artery disorders Rare: Congestive heart failure (new onset or worsening)
Vascular disorders	Common: Hypertension Uncommon: Thrombosis (such as deep venous and aortic), flushing Rare: Raynaud's phenomenon
Respiratory, thoracic and mediastinal disorders	Common: Asthma and related symptoms (such as wheezing and bronchial hyperactivity) Uncommon: Interstitial lung disease
Gastrointestinal disorders	Common: Dyspepsia, gastrointestinal and abdominal pain, nausea, gastrointestinal inflammatory disorders (such as gastritis and colitis), stomatitis Uncommon: Constipation, gastro-oesophageal reflux disease
Hepatobiliary disorders	

Table 3: Tabulated List of Adverse Drug Reactions

	Common: Alanine aminotransferase increased, aspartate aminotransferase increased
	Uncommon: Cholelithiasis, hepatic disorders
Skin and subcutaneous tissue disorders	Common: Pruritus, rash, alopecia, dermatitis
	Uncommon: Psoriasis (new onset or worsening of pre-existing psoriasis, palmar/plantar and pustular), urticaria
	Rare: Vasculitis (cutaneous)
Musculoskeletal and connective tissue disorders	Rare: Lupus-like syndrome
Renal and urinary disorders	Rare: Bladder disorders, renal disorders
Reproductive system and breast disorders	Uncommon: Breast disorders, menstrual disorders
General disorders and administration site conditions	Common: Pyrexia, asthenia, injection site reaction (such as injection site erythema, urticaria, induration, pain, bruising, pruritus, irritation and paraesthesia), chest discomfort
	Rare: Impaired healing
Injury, poisoning and procedural complications	Common: Bone fractures

In general, the overall safety profile was similar for patients receiving golimumab via the SC or IV routes of administration. The data described in the following section reflect adverse reactions from the SC Phase 2 and 3 clinical trials with differences observed with the IV Phase 3 clinical trials noted.

Infections (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**)

Upper respiratory tract infection was the most common adverse reaction reported in the combined controlled Phase 3 RA, PsA and AS studies through Week 16 and the controlled Phase 2/3 induction studies in UC through Week 6, occurring in 12.6% of SIMPONI-treated patients (incidence per patient-year: 0.61; 95% CI: 0.55, 0.67) as compared with 11.0% of control patients (incidence per patient-year: 0.55; 95% CI: 0.46, 0.64). In controlled and

uncontrolled portions of the studies with a median follow-up of approximately 4 years, the incidence per patient year of upper respiratory tract infections was 0.36 events; 95% CI: 0.34, 0.36, for SIMPONI-treated patients.

In the combined controlled Phase 3 RA, PsA and AS studies through Week 16 and the controlled Phase 2/3 induction studies in UC through Week 6 infections were observed in 23.0% of SIMPONI-treated patients (incidence per patient-year: 1.32; 95% CI: 1.23, 1.41) compared with 20.2% of control patients (incidence per patient-year: 1.22; 95% CI: 1.09, 1.36). In controlled and uncontrolled portions of the trials with a median follow-up of approximately 4 years, the incidence per patient year of infections was 0.81 events; 95% CI: 0.79, 0.83 for SIMPONI treated patients.

Serious infections observed in SIMPONI-treated patients included sepsis, pneumonia, cellulitis, abscess, invasive fungal infections and other opportunistic infections and tuberculosis. Some of these infections have been fatal. In controlled Phase 3 trials through Week 16 in patients with RA, PsA, AS, and nr-Axial SpA, serious infections were observed in 1.2% of SIMPONI-treated and 1.2% of control-treated patients. Through Week 16, the incidence of serious infections per patient-year of follow-up was 0.07; 95% CI: 0.05, 0.11 for the SIMPONI 100 mg group, 0.03; 95% CI: 0.01, 0.06 for the SIMPONI 50 mg group and 0.04; 95% CI: 0.02, 0.07 for the placebo group. In controlled Phase 2/3 trials through Week 6 of SIMPONI induction in UC, serious infections were observed in 0.8% of SIMPONI-treated patients compared with 1.5% of control patients.

In the controlled and uncontrolled portions of the pivotal trials, and AS with a median follow-up of approximately up to 3 years, there was a greater incidence of serious infections, including opportunistic infections and TB in patients receiving SIMPONI 100 mg compared with patients receiving SIMPONI 50 mg. The incidence per patient-year of all serious infections was 0.04; 95% CI: 0.04, 0.05, in patients receiving SIMPONI 100 mg and 0.03; 95% CI: 0.02, 0.03, in patients receiving SIMPONI 50 mg. These results may be confounded by the designs of the pivotal trials and different durations of follow-up across treatment groups.

The incidence per 100 patient-years of TB in patients receiving SIMPONI induction and 100 mg during the maintenance portion of the UC study was 0.52; 95% CI: 0.11, 1.53.

Malignancies (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**)

Lymphoma

The incidence of lymphoma in SIMPONI-treated patients during pivotal trials and was higher than expected in the general population.

In the controlled and uncontrolled portions of these trials with a median follow-up of approximately up to 3 years, a greater incidence of lymphoma was observed in patients receiving SIMPONI 100 mg compared with patients receiving SIMPONI 50 mg. These results may be confounded by the small number of events, designs of the phase 3 studies, and different durations of follow-up across treatment groups. Lymphoma was diagnosed in 11 subjects (1 in the golimumab 50 mg treatment groups and 10 in the golimumab 100 mg treatment groups) with an incidence (95%, CI) per 100 subject-years of follow up of 0.03

(0.00, 0.15) and 0.13 (0.06, 0.24) events for SIMPONI 50 mg and 100 mg respectively. The majority of lymphomas occurred in GO-AFTER, which enrolled patients previously exposed to anti-TNF agents who had longer disease duration and more refractory disease.

Malignancies other than lymphoma

In the combined placebo -controlled periods of the SIMPONI Phase 2 and Phase 3 clinical trials in RA, PsA and AS of the Phase 3 RA, PsA and AS studies (through Week 24 in GO-FORWARD, GO-AFTER, GO-REVEAL and GO-RAISE, and through Week 52 in GO-BEFORE) and placebo-controlled Phase 2/3 induction studies in UC (through Week 6), the incidence of non-lymphoma malignancies (excluding non-melanoma skin cancer) was similar between the SIMPONI and the control groups. Through a median follow-up of approximately 4 years, the incidence of non-lymphoma malignancies (excluding non-melanoma skin cancer) was similar to the general population.

Through approximately 3 years of follow-up of the Phase 2b and Phase 3 studies in RA, PsA and AS among patients receiving SIMPONI, non-melanoma skin cancer was diagnosed in 28 subjects (10 in SIMPONI 50 mg and 18 in SIMPONI 100 mg treatment groups) with an incidence (95% CI) per 100 subject-years of follow-up of 0.49 (0.33, 0.71) events for SIMPONI.

Through approximately 3 years of follow-up, of the Phase 2b and Phase 3 studies in rheumatologic indications, among patients receiving SIMPONI, malignancies besides non-melanoma skin cancer and lymphoma were diagnosed in 32 subjects (18 in SIMPONI 50 mg and 14 in SIMPONI 100 mg treatment groups) with an incidence (95% CI) per 100 subject-years of follow-up of 0.56 (0.38, 0.79) events for SIMPONI.

Cases reported in clinical studies in asthma

In an exploratory clinical study, patients with severe persistent asthma received a golimumab loading dose (150% of the assigned treatment dose) subcutaneously at week 0 followed by golimumab 200 mg, golimumab 100 mg or golimumab 50 mg every 4 weeks subcutaneously through week 52. Eight malignancies were reported in the combined golimumab treatment group (n=230) and none in the placebo treatment group (n=79). Lymphoma was reported in 1 patient, non-melanoma skin cancer in 2 patients, and other malignancies in 5 patients. There was no specific clustering of any type of malignancy.

During the placebo-controlled portion of the study, the incidence (95% CI) of all malignancies per 100 subject-years of follow-up was 3.19 (1.38, 6.28) in the golimumab group. In this study, the incidence (95% CI) per 100 subject-years of follow-up in golimumab-treated subjects was 0.40 (0.01, 2.20) for lymphoma, 0.79 (0.10, 2.86) for non-melanoma skin cancers, and 1.99 (0.64, 4.63) for other malignancies. For placebo subjects, the incidence (95% CI) per 100 subject-years of follow-up of these malignancies was 0.00 (0.00, 2.94). The significance of this finding is unknown.

The potential role of TNF-blocking therapy in the development of malignancies is unknown.

Demyelinating Disorders (see section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE)

In the controlled and uncontrolled periods of the Phase 3 RA, PsA and AS studies and Phase 2/3 UC studies with a median follow-up of up to 3 years, a greater incidence of

demyelination was observed in patients receiving SIMPONI 100 mg compared with patients receiving SIMPONI 50 mg. These results may be confounded by the small number of events, designs of the pivotal trials, and different durations of follow-up across treatment groups. In controlled and uncontrolled portions of the Phase 2/3 studies in UC with a mean follow-up of approximately 1.3 years, there were two cases of demyelination observed with SIMPONI.

Liver Enzyme Elevations

In the pivotal trials in RA, PsA and AS, ALT elevations were seen more commonly than AST elevations. Among those subjects with normal ALT levels at baseline, proportions of ALT elevations were in general greater for treatment regimens that included MTX compared with treatment regimens that did not.

There have been reports of severe hepatic reactions including acute liver failure in patients receiving TNF-blockers. In controlled Phase 3 trials through Week 16, Phase 3 trials through Week 16, mild ALT elevations (> 1 and < 3 x ULN) occurred in similar proportions of SIMPONI and control patients in the RA and PsA studies (22.1% to 27.4% of patients); in the AS study, more SIMPONI-treated patients (25.6%) than control patients (3.9%) had mild ALT elevations. In the controlled and uncontrolled periods of the RA and PsA pivotal trials, with a median follow-up of approximately 5 years, the incidence of mild ALT elevations was similar in the SIMPONI-treated and control patients. In the AS pivotal trial, the incidence of mild ALT elevations was higher in SIMPONI-treated patients than in control patients.

In controlled Phase 2/3 trials through Week 6 of SIMPONI induction in UC, mild ALT elevations (>1 and <3 x ULN) occurred in similar proportions of SIMPONI-treated and control patients (7.8% to 6.9%, respectively). In controlled and uncontrolled periods of the UC pivotal trials with a median follow-up of approximately 1.5 years, the proportion of patients with mild ALT elevations was 24.7% in patients receiving SIMPONI.

In the RA and AS studies through Week 16, ALT elevations ≥ 5 x ULN were uncommon and seen in more SIMPONI-treated patients (0.4% to 0.9%) than control patients (0.0%). This trend was not observed in the PsA population. In the controlled and uncontrolled periods of RA, PsA and AS pivotal trials, with a median follow-up of 5 years, the incidence of ALT elevations ≥ 5 x ULN was similar in both SIMPONI-treated and control patients. The majority of these elevations were asymptomatic. No cases were reported in the controlled and uncontrolled periods of the nr Axial SpA study (up to 1 year).

In controlled Phase 2/3 trials through Week 6 of SIMPONI induction in UC, ALT elevations ≥ 5 x ULN occurred in similar proportions of SIMPONI-treated patients compared to placebo patients (0.3% to 1.0%, respectively). In the controlled and uncontrolled periods of the pivotal UC trials with a median follow-up of approximately 1.5 years, the proportion of patients with ALT elevations ≥ 5 x ULN was 0.8% in patients receiving SIMPONI.

In the IV pivotal trials, liver enzyme elevations were comparable with those observed in the SC studies with the exception of the following:

In the controlled period of the IV PsA pivotal trial, mild ALT elevations (> 1 and < 3 x ULN) were observed in more golimumab-treated patients (34%) than control patients (26%).

In the controlled period of the IV PsA pivotal trial, ALT elevations ≥ 3 and < 5 ULN were observed in more golimumab-treated patients (2.9%) than control patients (0.4%).

In the controlled period of the IV PsA pivotal trial, ALT elevations ≥ 5 x ULN were observed in more golimumab-treated patients (1.7%) than control patients (0.4%).

Hepatobiliary adverse events

In controlled Phase 3 trials in RA, PsA and AS through Week 16, the proportions of patients with hepatobiliary adverse events were 0.8% in the SIMPONI-treated patients and 0.6% in control patients.

Psoriasis: New-Onset and Exacerbations

Cases of new onset psoriasis, including pustular psoriasis and palmoplantar psoriasis, have been reported with the use of TNF-blockers, including SIMPONI. Cases of exacerbation of pre-existing psoriasis have also been reported with the use of TNF-blockers. Many of these patients were taking concomitant immunosuppressants (e.g., MTX, corticosteroids). Some of these patients required hospitalisation. Most patients had improvement of their psoriasis following discontinuation of their TNF-blocker. Some patients have had recurrences of the psoriasis when they were re-challenged with a different TNF-blocker. Discontinuation of SIMPONI should be considered for severe cases and those that do not improve or that worsen despite topical treatments.

Injection site reactions

In the combined controlled Phase 3 RA, PsA and AS trials through Week 16 and a controlled Phase 2/3 induction trial in UC through Week 6, 5.4% of SIMPONI-treated patients had injection site reactions compared with 2.0% in control patients. The majority of the injection site reactions were mild and moderate and the most frequent manifestation was injection site erythema.

In the controlled periods of the pivotal IV trials, 0.2% of placebo treated subjects and 2.8% of golimumab treated subjects had an infusion reaction. The most common infusion reactions were rash and headache. No serious infusion reactions were reported.

In controlled phase 2 and 3 trials in RA, PsA, AS, UC and severe persistent asthma, no patients treated with SIMPONI developed anaphylactic reactions deemed to be related to golimumab.

Antinuclear antibodies (ANA)/anti-double-stranded DNA (dsDNA) antibodies

Use of TNF-blocking agents has been associated with the formation of autoantibodies and, rarely, with the development of a lupus-like syndrome.

In the controlled and uncontrolled periods of the Phase 3 RA, PsA and AS studies and Phase 2/3 UC studies through 1 year of follow-up, 3.5% of SIMPONI-treated patients and 2.3% of control patients were newly ANA-positive (at titres of 1:160 or greater) compared with baseline. The frequency of anti-dsDNA antibodies at 1 year of follow-up in patients with anti-dsDNA negative at baseline was 1.1%.

In the controlled period of the SIMPONI IV trial in RA through Week 20, 17% of SIMPONI IV-treated patients and 15% of control patients were newly Anti-Nuclear Antibody (ANA)-positive. Of these patients, no SIMPONI IV-treated patient or control-treated patient was newly positive for anti-dsDNA antibodies.

In the controlled period of the SIMPONI IV trial in PsA through Week 16, 8% of SIMPONI IV-treated patients and 17% of control patients were newly ANA-positive. Of these patients, 1 SIMPONI IV-treated patient and no control-treated patient were newly positive for anti-dsDNA antibodies.

In the controlled period of the SIMPONI IV trial in AS through Week 16, 8% of SIMPONI IV-treated patients and 5% of control patients were newly ANA-positive. Of these patients, no SIMPONI IV-treated patient or control-treated patient had newly positive anti-dsDNA antibodies through 16 weeks of follow-up.

Patients with non-radiographic axial spondyloarthritis

The safety observed in adult patients with nr-AxSpA was similar to that seen in previous clinical trials of golimumab in adult patients.

Post-marketing Experience

The frequencies provided below reflect reporting rates of adverse drug reactions from the worldwide post-marketing experience with SIMPONI/SIMPONI IV and precise estimates of incidence cannot be made due to voluntary reporting from a population of uncertain size. These adverse drug reactions are ranked by frequency, using the following convention: Very common ($\geq 1/10$), common ($\geq 1/100$ and $< 1/10$), uncommon ($\geq 1/1000$ and $< 1/100$), rare ($\geq 1/10,000$ and $< 1/1000$), very rare ($< 1/10,000$, including isolated reports).

Table 4: Golimumab postmarketing adverse reactions

System Organ Class	Adverse Reaction	Frequency
General Disorders and Administration Site Conditions	Infusion-related reaction	Common
Neoplasm benign and malignant	Melanoma Merkel cell carcinoma Hepatosplenic T-cell lymphoma [*] , Kaposi's sarcoma	Rare Not known
Immune system disorders	Serious systemic hypersensitivity reactions (including anaphylactic reaction) Sarcoidosis	Rare Rare
Skin and subcutaneous tissue disorders	Bullous skin reactions Skin exfoliation	Uncommon Rare

^{*}Observed with other TNF-blocking agents

Reporting suspected adverse effects

Reporting suspected adverse reactions after registration of the medicinal product is important. It allows continued monitoring of the benefit-risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions at www.tga.gov.au/reporting-problems.

4.9 OVERDOSE

Single doses up to 10 mg/kg intravenously have been administered in a clinical study without dose-limiting toxicity. In case of an overdose, it is recommended that the patient be

monitored for any signs or symptoms of adverse effects and appropriate symptomatic treatment be instituted immediately.

For information on the management of overdose, contact the Poisons Information Centre on 13 11 26 (Australia).

5 PHARMACOLOGICAL PROPERTIES

5.1 PHARMACODYNAMIC PROPERTIES

Mechanism of action

Golimumab is a human IgG1k monoclonal antibody produced by a murine hybridoma cell line with recombinant DNA technology. It forms high affinity, stable complexes with both the soluble and transmembrane bioactive forms of human tumour necrosis factor (TNF), which prevents the binding of TNF to its receptors. Elevated expression of TNF has been linked to chronic inflammatory diseases such as rheumatoid arthritis (RA), as well as spondyloarthropathies such as psoriatic arthritis (PsA) and ankylosing spondylitis (AS), and is an important mediator of the articular inflammation and structural damage that are characteristic of these diseases.

The binding of human TNF by golimumab was shown to neutralise TNF-induced cell-surface expression of the adhesion molecules E-selectin, vascular cell adhesion molecule (VCAM)-1 and intercellular adhesion molecule (ICAM)-1 by human endothelial cells. TNF-induced secretion of interleukin (IL)-6, IL-8 and granulocyte-macrophage colony stimulating factor (GM-CSF) by human endothelial cells was also inhibited by golimumab.

SIMPONI was effective in modulating select markers of inflammation and bone metabolism across indications. In non-radiographic axial spondyloarthritis (nr Axial SpA), only CRP levels were evaluated. Improvement in C-reactive protein (CRP) levels were observed relative to placebo groups and treatment with SIMPONI resulted in significant reductions from baseline in serum levels of IL-6, ICAM-1, matrix metalloproteinase-3 (MMP-3) and vascular endothelial growth factor (VEGF) compared to control treatment. In addition, levels of TNF α were reduced in RA and AS patients and levels of IL-8 were reduced in PsA patients. These changes were observed at the first assessment (week 4) after the initial SIMPONI administration and were generally sustained through weeks 14 and/or 24. SIMPONI with or without methotrexate (MTX) resulted in significant changes in serum levels of select markers of bone metabolism [increases in osteocalcin and procollagen type I N-terminal propeptide (PINP) and decreases in deoxy-pyridinolin (DPD) levels] at week 4.

Clinical trials

Rheumatoid arthritis

The efficacy and safety of SIMPONI were evaluated in four (3 subcutaneous [GO-FORWARD, GO-AFTER, and GO-BEFORE] and 1 intravenous [GO-FURTHER]) multicentre, randomised, double blind, placebo controlled studies in over 2100 patients \geq 18 years of age with moderately to severely active RA diagnosed according to American College of Rheumatology (ACR) criteria for at least 3 months prior to screening. In GO-FORWARD, GO-AFTER, and GO-BEFORE, patients had at least 4 swollen and 4 tender joints. SIMPONI was administered subcutaneously at doses of 50 mg or 100 mg, with or without MTX, every 4 weeks. In GO-FURTHER, patients had at least 6 swollen and 6 tender joints. SIMPONI was administered as an intravenous infusion at a dose of 2 mg/kg with MTX at Weeks 0 and 4 and then every 8 weeks thereafter. Clinical

endpoints included ACR response, Disease Activity Score 28 (DAS28), Health Assessment Questionnaire Disability Index (HAQ-DI), and health related quality of life assessments.

Rheumatoid arthritis (subcutaneous)

The Study GO-FORWARD evaluated 444 patients who had active RA despite a stable dose of at least 15 mg/week of MTX. This study excluded patients who previously received TNF blocking agents, and patients with serious or chronic infections, history of congestive heart failure (CHF), demyelinating disorders or a history of malignancy with the exception of treated non-melanoma skin cancers. Patients were randomised to receive placebo + MTX (n=133), SIMPONI 50 mg + MTX (n=89), SIMPONI 100 mg + MTX (n=89) or SIMPONI 100 mg monotherapy + placebo (n=133). The use of disease-modifying anti-rheumatic drugs (DMARDs) including sulfasalazine (SSZ), hydroxychloroquine (HCQ), cytotoxic agents, or other biologicals was prohibited. All patients receiving placebo + MTX received SIMPONI 50mg + MTX after week 24, but the trial remained double-blind until all patients had completed 52 weeks of treatment. At week 52, patients entered the long-term extension phase in which patients continued treatment with either SIMPONI 50 mg + MTX, SIMPONI 100mg + MTX, or SIMPONI 100mg monotherapy. After the last patient completed the week 52 visit and the trial was unblinded, patients receiving SIMPONI 50 mg could have the dose increased to 100 mg at the discretion of the investigator, and patients who were receiving SIMPONI monotherapy could have MTX added. Efficacy data were collected and analysed through week 104.

The study GO-AFTER evaluated 445 patients who were previously treated with one or more of the anti-TNF agents adalimumab, etanercept, or infliximab. This study excluded patients with serious or chronic infections, history of CHF, demyelinating disorders or a history of malignancy with the exception of treated non-melanoma skin cancers. Patients were randomised to receive placebo (n=150), SIMPONI 50 mg (n=147), or SIMPONI 100 mg (n=148). Patients were allowed to continue concomitant DMARD therapy with MTX, SSZ, and/or HCQ during the study. Discontinuation of prior anti-TNF therapies could have been for reasons including lack of efficacy (58%), intolerance (17%), and/or reasons other than safety or efficacy (40%). Other than MTX, SSZ, and HCQ, the use of other DMARDs including cytotoxic agents or other biologics was prohibited. At week 24, patients entered the long-term extension phase in which patients continued treatment with either SIMPONI 50 mg or SIMPONI 100 mg; all patients receiving placebo began receiving SIMPONI 50 mg at week 24. After the last patient completed the week 24 visit and the trial was unblinded, patients receiving SIMPONI 50 mg could have their dose increased to 100 mg at the discretion of the investigator. Efficacy data were collected and analysed through week 24.

The study GO-BEFORE evaluated 637 patients with active RA who were MTX-naïve. This study excluded patients who previously received TNF blocking agents, and patients with serious or chronic infections, history of CHF, demyelinating disorders or history of malignancy with exception of treated non-melanoma skin cancers. Patients were randomised to receive placebo + MTX (n = 160), SIMPONI 50 mg + MTX (n = 159), SIMPONI 100 mg + MTX (n = 159) or SIMPONI 100 mg monotherapy + placebo (n = 159). For patients receiving active MTX, MTX was administered at a dose of 10 mg/week beginning at week 0 and increased to 20 mg/week by week 8. The use of other DMARDs including SSZ, HCQ, cytotoxic agents, or other biologics was prohibited. At week 52, patients receiving placebo + MTX who had at least 1 tender or swollen joint began receiving

SIMPONI 50 mg + MTX. Patients who had no swollen or tender joints at week 52 continued to receive placebo + MTX after week 52. At week 52, patients entered the long-term extension phase in which the majority of patients continued treatment with either SIMPONI 50 mg + MTX, SIMPONI 100 mg + MTX, or SIMPONI 100 mg monotherapy. The trial remained double-blind until all patients had completed 52 weeks of treatment. After the last patient completed the week 52 visit and the trial was unblinded, patients receiving SIMPONI 50 mg could have the dose increased to 100 mg at the discretion of the investigator, and patients who were receiving SIMPONI 100 mg monotherapy could have MTX added. Efficacy data were collected and analysed through week 104.

In GO-AFTER, GO-FORWARD, and GO-BEFORE, the median duration of RA disease was 9.4, 5.7, and 1.2 years, respectively.

The co-primary endpoint in GO-FORWARD and the primary endpoint in GO-AFTER was the percentage of patients achieving an ACR 20 response at week 14. The other co-primary endpoint in GO-FORWARD was the improvement from baseline in the Health Assessment Questionnaire Disability Index (HAQ-DI) score at week 24 and the major secondary endpoint included change from baseline in van der Heijde-modified Sharp (vdH-S) score at week 24. The co-primary endpoints for GO-BEFORE was the percentage of patients achieving ACR 50 response at week 24 and the change from baseline in vdH-S score at week 52. In addition to these endpoint(s), additional assessments of the impact of SIMPONI treatment on the signs and symptoms of arthritis, physical function and health-related quality of life were performed.

Key results for the 50 mg dose are shown in Tables 5 and 6 below. In general, no clinically meaningful differences in measures of efficacy were observed between the SIMPONI 50 mg and 100 mg dosing regimens. In GO-FORWARD and GO-BEFORE, the SIMPONI 100 mg monotherapy groups were not statistically different from the MTX monotherapy groups in ACR response.

Signs and symptoms

In all phase 3 RA studies, a greater percentage of SIMPONI-treated patients achieved ACR and Disease Activity Score 28 (DAS28) responses at weeks 14 and 24 versus the control groups. Responses were observed at the first assessment (week 4) after the initial SIMPONI administration and were maintained through week 24.

Table 5: Key efficacy outcomes from GO-FORWARD, GO-AFTER and GO-BEFORE

	GO-FORWARD Active RA despite MTX		GO-AFTER Active RA, previously treated with one or more anti-TNF agent(s)		GO-BEFORE Active RA, MTX Naïve	
	Placebo + MTX	SIMPONI 50 mg + MTX	Placebo	SIMPONI 50 mg	Placebo + MTX	SIMPONI 50 mg + MTX
N ^a	133	89	150	147	160	159
Responders, % of patients						
ACR 20						
Week 14	33%	55%*	18%	35%*	NA	NA

	GO-FORWARD Active RA despite MTX		GO-AFTER Active RA, previously treated with one or more anti-TNF agent(s)		GO-BEFORE Active RA, MTX Naïve	
	Placebo + MTX	SIMPONI 50 mg + MTX	Placebo	SIMPONI 50 mg	Placebo + MTX	SIMPONI 50 mg + MTX
N ^a	133	89	150	147	160	159
Week 24	28%	60%*	16%	31% p=0.002	49%	62% p=0.028
ACR 50						
Week 14	10%	35%*	7%	15% p=0.021	NA	NA
Week 24	14%	37%*	4%	16%*	29%	40% p=0.042 ^b
ACR 70						
Week 14	4%	14% p=0.008	2%	10% p=0.005	NA	NA
Week 24	5%	20%*	2%	9% p=0.009	16%	24% p=0.064
<p>a: N reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint.</p> <p>*: $p \leq 0.001$</p> <p>b: This p-value (50 mg vs. placebo) should not be interpreted as implying statistical significance, because the p-value for the primary analysis (combined SIMPONI 50 mg and 100 mg groups vs. placebo) was not statistically significant ($p=0.053$) and a hierarchical approach was used for the statistical analyses.</p> <p>NA: Not applicable, as data was not collected at week 14 in this study.</p>						

In GO-FORWARD and GO-BEFORE, the proportions of patients achieving an ACR 20, 50 or 70 response were maintained through Week 104.

The proportion of patients achieving a DAS28 (using CRP) response at week 52 was greater for those patients treated with SIMPONI 50mg + MTX compared with those who received placebo + MTX (72% compared with 61%; $p=0.035$). Similarly, statistically significant results were observed when DAS28 (using ESR) response was assessed. The percent of patients achieving a DAS28 (using CRP) remission at week 52 was greater for those patients treated with SIMPONI 50mg + MTX compared with those who received placebo + MTX (35% compared with 23%; $p=0.018$). The proportions of patients achieving a DAS28 (using CRP) response or remission at week 52 were maintained at week 104.

In GO-FORWARD and GO-AFTER all individual components of the ACR response criteria [number of tender and swollen joints, patient's assessment of pain, patient's and physician's global assessment of disease activity, disability index (as measured by HAQ-DI) and CRP] were significantly improved in the SIMPONI-treated patients versus control patients ($p < 0.001$). The results of the components of the ACR response criteria are shown in Table 6.

Table 6: Percent improvement in components of ACR Response in RA trials GO-FORWARD, GO-AFTER and GO-BEFORE

	GO-FORWARD Active RA despite MTX		GO-AFTER Active RA, previously treated with one or more anti-TNF agent(s)		GO-BEFORE Active RA, MTX Naïve	
	Placebo + MTX	SIMPONI 50 mg + MTX*	Placebo	SIMPONI 50 mg*	Placebo + MTX	SIMPONI 50 mg + MTX
N ^a	133	89	150	147	160	159
Number of swollen joints						
Baseline	12.0	13.0	14	15	11	13
Week 14	38 %	62 %	20 %	44 %	NA	NA
Week 24	32 %	72 %	1 %	33 %	67 %	76 % (p=0.127)
Number of tender joints						
Baseline	21.0	26.0	26	28	26	26
Week 14	30 %	60 %	6 %	34 %	NA	NA
Week 24	21 %	62 %	-7 %	29 %	57 %	67 % (p=0.023)
Patient's assessment of pain						
Baseline	5.7	6.1	7.1	7.0	7	7
Week 14	18 %	55 %	12 %	25 %	NA	NA
Week 24	15 %	50 %	4 %	25 %	44 %	52 % (p=0.028)
Patient's global assessment of disease activity						
Baseline	5.3	6.0	6.7	6.8	6	6
Week 14	15 %	45 %	8 %	29 %	NA	NA
Week 24	17 %	48 %	2 %	22 %	37 %	50 % (p=0.042)
Physician's global assessment of disease activity						
Baseline	5.7	6.1	6.3	6.5	6	6
Week 14	35 %	55 %	12 %	38 %	NA	NA
Week 24	39 %	62 %	10 %	35 %	63 %	67 % (p=0.206)
HAQ-DI score						
Baseline	1.25	1.38	1.75	1.63	1.50	1.50
Week 14	10 %	29 %	0 %	13 %	NA	NA
Week 24	7 %	31 %	0 %	11 %	37 %	44 % (p=0.141)
CRP (mg/L)						
Baseline	8.0	10.0	10.0	9.0	14.0	13.0
Week 14	2 %	44 %	0 %	37 %	NA	NA
Week 24	0 %	39 %	0 %	15 %	43 %	57 % (p=0.002)
*: p ≤ 0.001 for all comparisons.						
a: N reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint.						
NA: Not applicable, as data was not collected at week 14 in this study.						

In GO-FORWARD and GO-BEFORE, the percent improvement in the ACR components measured (swollen joint count, tender joint count and CRP) observed at week 24 was maintained at week 52 and week 104.

In GO-AFTER, the percentage of patients achieving an ACR 20 response was greater for patients receiving SIMPONI 50 mg than for patients receiving placebo regardless of the reason reported for discontinuation of one or more prior anti-TNF therapies.

Major clinical response, defined as maintenance of an ACR 70 response over a continuous 6-month period was measured in GO-BEFORE. At week 52, 15% of patients in the SIMPONI

50mg + MTX group achieved a major clinical response compared with 7% of patients in the placebo + MTX group (p=0.018).

Radiographic response

The progression of structural joint damage (erosions and joint space narrowing) in both hands and feet was evaluated in GO-BEFORE at week 52 as a co-primary endpoint and in GO-FORWARD at week 24 as a major secondary endpoint. The change from baseline in the vdH-S score, a composite score of structural damage that radiographically measures the number and size of joint erosions and the degree of joint space narrowing in hands/wrists and feet was used to assess the degree of structural damage.

In GO-BEFORE, SIMPONI 50 mg + MTX resulted in significantly less radiographic progression than placebo + MTX, as assessed by total vdH-S score (p = 0.015) Results are shown in table 7.

Table 7: Radiographic change from baseline at week 52 in RA trial GO-BEFORE

	Placebo + MTX (N = 160)^a	SIMPONI 50 mg + MTX (N = 159)^a
Total score		
Baseline	19.7 (35.4)	18.7 (32.4)
Change from baseline	1.4 (4.6)	0.7 (5.2)*
Erosion score		
Baseline	11.3 (18.6)	10.8 (17.4)
Change from baseline	0.74 (2.8)	0.48 (2.1)
JSN score		
Baseline	8.4 (17.8)	7.9 (16.1)
Change from baseline	0.6 (2.3)	0.2 (2.0)*
^a N reflects randomised patients		
* p < 0.05		
Values are mean (standard deviation) in total vdH-S score		

In GO-BEFORE, SIMPONI 50mg + MTX demonstrated significant inhibition in radiographic progression compared with placebo + MTX among patients with abnormal (> 1.0 mg/dL) CRP (mean (SD) change from baseline in total vdH-S score 1.3 (7.0) versus 2.2 (5.6) respectively, p=0.010). A greater number of patients in the SIMPONI 50mg + MTX group (71%) had no new erosions in uninvolved joints at baseline compared to MTX alone (54%). There was a significantly greater number of subjects in the SIMPONI 50mg + MTX group without an increase from baseline in total vdH-S score compared with the placebo + MTX group (71% versus 54% respectively, p=0.003).

After week 52, most subjects randomised to placebo + MTX began receiving SIMPONI 50mg + MTX. The effect of SIMPONI + MTX on radiographic progression was maintained at week 104.

At week 104, the mean (SD) change from baseline in total vdH-S score in subjects randomised to placebo + MTX (0.94 ± 4.237) was higher than in subjects randomised to the SIMPONI 50mg + MTX treatment group (-0.03 ± 1.927)

From week 52 to week 104, minimal to no progression in total vdH-S scores was observed in the subjects randomised to placebo + MTX (0.13 ± 2.500) or in the subjects randomised to SIMPONI 50mg + MTX (-0.09 ± 1.141) treatment groups.

At week 104, the proportion of subjects with no new erosions in joints with a score of 0 at baseline was 51.2% in the placebo + MTX group and 63.1% in the SIMPONI 50mg + MTX group.

At week 104, the proportion of subjects with no new JSN in joints with a score of 0 at baseline was 83.2% in the placebo + MTX group and 91.5% in the SIMPONI 50mg + MTX group.

In GO-FORWARD changes from baseline in total vdH-S score at week 24 in all treatment groups were minimal. No significant difference in the change from baseline in total vdH-S score at week 24 was observed in the SIMPONI + MTX groups compared with the placebo +MTX groups.

Physical function and health-related quality of life

In GO-AFTER and GO-FORWARD, the SIMPONI 50 mg groups demonstrated a greater improvement compared to the control groups in the change in mean Health Assessment Questionnaire Disability Index (HAQ-DI) score from baseline to week 24: 0.23 vs. 0.03 in GO-AFTER, 0.47 vs. 0.13 in GO-FORWARD, respectively. Also in GO-AFTER and GO-FORWARD, the SIMPONI 50 mg groups compared to the control groups had a greater proportion of HAQ-DI responders (change from baseline ≥ 0.25) at week 24: 44% vs. 28%, 65% vs. 35%, respectively. In GO-AFTER, 81% of subjects in the SIMPONI 50 mg group, who had a clinically meaningful improvement (≥ 0.25) in HAQ-DI from baseline to Week 24, maintained this level of improvement at Week 100. In GO-FORWARD, 87% of subjects in the SIMPONI 50 mg group, who had a clinically meaningful improvement (≥ 0.25) in HAQ-DI from baseline to Week 24, maintained this level of improvement at Week 104.

In GO-FORWARD clinically meaningful and statistically significant improvements were demonstrated in health-related quality of life as measured by the physical component score of the SF-36 in patients treated with SIMPONI versus placebo. The improvement in SF-36 PCS score observed at week 24 was maintained at week 52 and week 104.

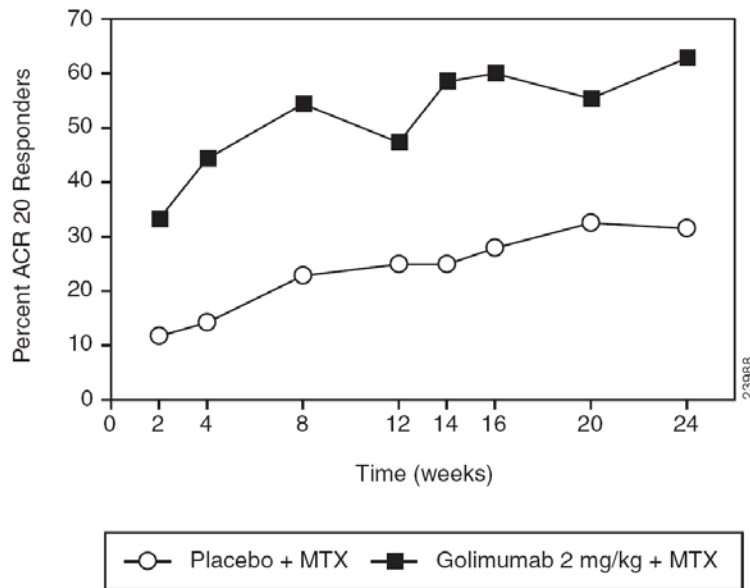
Rheumatoid arthritis (intravenous)

GO-FURTHER (IV RA Study -1) evaluated 592 patients with active RA despite concurrent MTX therapy. Patients were randomised to receive either SIMPONI IV 2 mg/kg IV (N=395) or IV placebo (saline) (N=197) at Week 0, Week 4, and every 8 weeks thereafter in addition to their weekly maintenance MTX dose. All patients receiving IV placebo + MTX received SIMPONI IV 2 mg/kg IV + MTX after Week 24, but the trial remained double-blind through 52 weeks of treatment. Pre-medication prior to infusion was permitted at the discretion of the investigator. The primary endpoint was the percentage of patients achieving ACR 20 response at Week 14. The major secondary endpoints included DAS28 response (using CRP) and change from baseline in HAQ-DI at Week 14 as well as ACR 50 response and change from baseline in vdH-s score at Week 24. Other pre-specified endpoints included improvement in ACR components, ACR response over time, improvement in physical function and health-related quality of life. The median duration of RA disease was 4.7 years.

Reduction in signs and symptom

Treatment with SIMPONI IV in patients with active RA despite MTX resulted in improvement in signs and symptoms as demonstrated by the percentage of patients achieving an ACR 20 response at Week 14 (Table 8). The percent of patients achieving ACR 20 responses by visit is shown in Figure 1.

Figure 1: GO-FURTHER: Percentage of patients achieving ACR 20 response through Week 24; randomised patients in placebo IV + MTX and SIMPONI IV + MTX dose groups



The percentage of patients achieving ACR 50 and ACR 70 responses was also greater in the SIMPONI IV + MTX group than in the placebo IV + MTX group.

The proportions of patients achieving an ACR 20, ACR 50, or ACR 70 response were maintained after Week 24 through Week 52.

The percentage of patients achieving a DAS28 (using CRP) response and DAS 28 remission was significantly greater for those patients treated with SIMPONI IV + MTX compared with those who received placebo IV + MTX at Week 14 (table 8).

Table 8: GO-FURTHER: Key efficacy outcomes

	Placebo IV + MTX (N=197) ^a	SIMPONI IV + MTX (N=395) ^a	Difference from placebo 95% CI ^b
ACR 20 (% responders)			
Week 14	25%	59%	34 (25.9%, 41.4%)*
Week 24	32%	63%	31 (23.3%, 39.4%)*
Week 52	N/A ^c	66%	N/A ^c
ACR 50 (% responders)			
Week 14	9%	30%	21 (15.3%, 27.2%)*
Week 24	13%	35%	22 (15.1%, 28.4%)*
Week 52	N/A ^c	39%	N/A ^c
ACR 70 (% responders)			
Week 14	3%	12%	9 (5.3%, 13.4%)*
Week 24	4%	18%	13 (8.8%, 18.1%)*
Week 52	N/A ^c	18%	N/A ^c
DAS28 (using CRP) response (% responders)			
Week 14	40%	81%	41

	Placebo IV + MTX (N=197) ^a	SIMPONI IV + MTX (N=395) ^a	Difference from placebo 95% CI ^b
			(33.3%, 49.0%)*
Week 24	45%	81%	36 (28.4%, 44.3%)*
Week 52	N/A ^c	81%	N/A ^c
DAS28 (using CRP) remission (% remitters)			
Week 14	5%	15%	11 (6.3%, 15.5%)*
Week 24	5%	18%	13 (7.8%, 17.5%)*
Week 52	N/A ^c	20%	N/A ^c

^a N reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint.

^b For difference in proportions.

^c These results are not reported as all patients received SIMPONI IV + MTX after Week 24 due to study design

* p<0.001

At Week 14, SIMPONI IV MTX treatment also resulted in significantly greater improvement for each ACR component compared with treatment with placebo + MTX (Table 9). The improvement in all ACR components observed at Week 24 was maintained at each visit through Week 52.

Table 9: GO-FURTHER: Percent improvement in ACR components at Week 14, Week 24, and Week 52; randomised patients

	Placebo IV + MTX (N=197) ^a	SIMPONI IV + MTX (N=395) ^a
Number of swollen joints (0-66)		
Baseline (mean)	15	15
Week 14	19%	57%*
Week 24	19%	60%*
Week 52	N/A ^b	71%
Number of tender joints (0-68)		
Baseline (mean)	26	26
Week 14	10%	48%*
Week 24	8%	50%*
Week 52	N/A ^b	57%
Patient's assessment of pain (0-10)		
Baseline (mean)	6.5	6.5
Week 14	1%	34%*
Week 24	9%	38%*
Week 52	N/A ^b	35%
Patient's global assessment of disease activity (0-10)		
Baseline (mean)	6.5	6.5
Week 14	5%	35%*
Week 24	14%	38%*
Week 52	N/A ^b	36%

	Placebo IV + MTX (N=197) ^a	SIMPONI IV + MTX (N=395) ^a
Physician's global assessment of disease activity (0-10)		
Baseline (mean)	6.3	6.2
Week 14 ^c	-1%	47%*
Week 24	5%	51%*
Week 52	N/A ^b	55%
HAQ-DI score (0-3)		
Baseline (mean)	1.6	1.6
Week 14	6%	25%*
Week 24	3%	23%*
Week 52	N/A ^b	28%
CRP (mg/dL)^d		
Baseline (mean)	2.2	2.8
Week 14 ^c	-46%	30%*
Week 24 ^c	-29%	33%*
Week 52	N/A ^b	13%

^aN reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint

^bThese results are not reported as all patients received SIMPONI IV + MTX after Week 24 due to study design

^cPositive values indicate improvement

^dCRP: (Normal Range 0.0-0.60 mg/dL)

* p≤0.001

Radiographic response

In GO-FURTHER, structural joint damage was assessed radiographically and expressed as a change in van der Heijde-Modified Sharp Score (vdH-S), at Week 24 compared to baseline. The SIMPONI IV + MTX treatment group significantly inhibited the progression of structural damage compared with placebo + MTX, as assessed by total vdH-S score as shown in Table 10. Inhibition of radiographic progression continued to be observed in patients receiving SIMPONI IV + MTX at Week 52.

Table 10: GO-FURTHER: Radiographic change from baseline at Week 24 and Week 52

	Placebo + MTX (N=197) ^a	SIMPONI IV + MTX (N=395) ^a
	Mean (SD)	Mean (SD)
Total vdH-S score		
Baseline	50.3 (± 59.8)	47.6 (± 54.6)
Change from baseline at Week 24	1.1 (± 3.2)	0.03 (± 1.9)*
Change from baseline at Week 52	1.2 (± 4.0) ^b	0.13 (± 3.1)
Erosion score		
Baseline	25.6 (± 32.3)	23.9 (± 29.0)
Change from baseline at Week 24	0.5 (± 2.1)	-0.1 (± 1.1)*

Change from baseline at Week 52	0.4 (\pm 2.4) ^b	-0.2 (\pm 1.8)
JSN score		
Baseline	24.6 (\pm 29.5)	23.7 (\pm 28.3)
Change from baseline at Week 24	0.6 (\pm 1.7)	0.1 (\pm 1.3)*
Change from baseline at Week 52	0.8 (\pm 2.2) ^b	0.3 (\pm 2.0)

^a N reflects randomised patients.

^b These results are based on patients who received SIMPONI IV + MTX for at least 6 months.

* $p \leq 0.002$.

At Week 24, a significantly greater proportion of patients in the SIMPONI IV + MTX group (71%) had no progression of structural damage (change in the total vdH-S score \leq 0), compared to 57% of patients in the placebo + MTX group (p -value=0.001).

Improvement in physical function and health-related quality of life

In GO-FURTHER, physical function and health-related quality of life were assessed using the disability index of the Health Assessment Questionnaire Disability Index (HAQ-DI) AND, the SF-36 health survey.

At Week 14, the SIMPONI IV + MTX group showed greater mean improvement in the HAQ-DI compared with placebo + MTX (0.5 compared to 0.2; 95% CI for difference [0.2, 0.4]). SIMPONI IV + MTX showed significantly greater mean improvement from baseline in the SF 36 physical component summary (PCS) score compared with placebo IV + MTX at Week 24 (8.3 vs. 3.8; $p < 0.001$) and in the SF 36 mental component summary (MCS) score compared with placebo IV + MTX at Week 24 (6.9 vs. 1.2; $p < 0.001$). Similar improvements in these scores were observed at Week 24 and 52.

Psoriatic arthritis (subcutaneous)

The safety and efficacy of SIMPONI were evaluated in a multi-centre, randomised, double-blind, placebo-controlled study (GO-REVEAL) in 405 adult patients with active PsA (\geq 3 swollen joints and \geq 3 tender joints) despite non-steroidal anti-inflammatory (NSAID) or DMARD therapy. Patients in this study had a diagnosis of PsA for at least 6 months with a qualifying psoriatic skin lesion of at least 2 cm in diameter. Patients with each sub-type of psoriatic arthritis were enrolled, including polyarticular arthritis with no rheumatoid nodules (43%), asymmetric peripheral arthritis (30%), distal interphalangeal (DIP) joint arthritis (15%), spondylitis with peripheral arthritis (11%), and arthritis mutilans (1%). The median duration of PsA disease was 5.1 years. This study excluded patients previously treated with TNF blocking agents, and patients with serious or chronic infections, history of congestive heart failure, demyelinating disorders or a history of malignancy with the exception of treated basal skin cancer. SIMPONI was administered subcutaneously at doses of 50 mg or 100 mg, with or without MTX, every 4 weeks. Patients were randomly assigned to placebo ($n=113$), SIMPONI 50 mg ($n=146$), and SIMPONI 100 mg ($n=146$). All patients receiving placebo received SIMPONI 50 mg after week 24, but the trial remained double-blind until all patients had completed 52 weeks of treatment. At week 52, patients entered the long-term extension phase in which patients continued treatment with either SIMPONI 50 mg, or SIMPONI 100 mg. After the last patient completed treatment the week 52 visit and the trial was unblinded, patients receiving SIMPONI 50 mg could have the dose increased to 100 mg at the discretion of the investigator. The co-primary endpoints were the percentage of

patients achieving ACR 20 response at week 14 and change from baseline in total PsA modified vdH-S score at week 24. Efficacy data were collected and analysed through week 104.

Signs and symptoms

Key results for the 50 mg dose are shown in Table 11 below. In general, no clinically meaningful differences in measures of efficacy were observed between the SIMPONI 50 mg and 100 mg dosing regimens.

Table 11: Key efficacy outcomes from GO-REVEAL

	Placebo	SIMPONI 50 mg*
N ^a	113	146
Responders, % of patients		
ACR 20		
Week 14	9 %	51 %
Week 24	12 %	52 %
ACR 50		
Week 14	2 %	30 %
Week 24	4 %	32 %
ACR 70		
Week 14	1 %	12 %
Week 24	1 %	19 %
PASI 75^b		
Week 14	3 %	40 %
Week 24	1 %	56 %
HAQ-DI Baseline score		
Median	1.00	1.00
Improvement in HAQ-DI		
Week 14 and 24 Median	0.00	0.25
*: p < 0.05 for all comparisons; p-value calculations are based on comparisons of median values for continuous variables		
a: N reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint		
b: Based on the subset of patients with ≥ 3% body surface area (BSA) involvement at baseline		

Improvements in key measures of disease activity were observed at the first assessment (week 4) after the initial SIMPONI administration and were maintained through week 24. Similar ACR 20 responses at week 14 were observed in patients with different PsA subtypes including polyarticular arthritis with no rheumatoid nodules, asymmetric peripheral arthritis, DIP arthritis, and spondylitis with peripheral arthritis. The number of patients with arthritis mutilans was too small to allow meaningful assessment. Responses observed in the SIMPONI-treated groups were similar in patients receiving and not receiving concomitant MTX. Among 146 patients randomised to SIMPONI 50 mg, 70 were still on this treatment at week 104. Of these 70 patients, 64, 46 and 31 patients had an ACR 20/50/70 response, respectively.

At week 24, improvements in parameters of peripheral activity characteristic of psoriatic arthritis (e.g. number of swollen joints, number of painful/tender joints, dactylitis and enthesitis) were seen in the SIMPONI-treated patients. The median percent improvement in enthesitis and dactylitis scores observed at week 24 were maintained through week 104.

Proportions of patients with PASI 50, 75 or 90 responses observed at week 24 were maintained through week 104.

Radiographic response

Structural damage in both hands and feet was assessed radiographically by the change from baseline in the van der Heijde-Sharp (vdH-S) score, modified for PsA by addition of hand distal interphalangeal (DIP) joints. At week 24, SIMPONI 50 mg significantly inhibited the progression of structural damage compared with placebo. Results are shown in Table 12. Patients treated with SIMPONI with or without MTX had less progression than patients receiving placebo with or without MTX.

Table 12: Radiographic change from baseline at week 24 in PsA trial GO-REVEAL

	Placebo (N = 113)^a	SIMPONI 50 mg (N = 146)^a
Total score		
Baseline	18.2 (27.8)	23.9 (35.4)
Change from baseline	0.27 (1.3)	-0.16 (1.3)*
Erosion score		
Baseline	10.6 (16.1)	13.7 (19.6)
Change from baseline	0.32 (0.9)	-0.09 (0.9)**
JSN score		
Baseline	7.5 (12.5)	10.1 (16.8)
Change from baseline	-0.03 (0.7)	-0.03 (0.6)
^a N reflects randomised patients actual number of patients for each analysis may vary		
* p = 0.011		
**p < 0.001		
Values are mean (standard deviation) in total PsA modified vdH-S score		

A significantly greater number of patients in the SIMPONI 50 mg group had no new erosions or no new joint space narrowing (JSN) in joints that were uninvolved at baseline compared to placebo (see table 13).

Table 13: New erosions and JSN in previously uninvolved joints at week 24 in PsA trial GO-REVEAL

	Placebo (N = 113)^a	SIMPONI 50 mg (N = 146)^a	p-value
Subjects with at least 1 previously uninvolved joint	102	132	
Subjects with no new erosions	73 (72%)	115 (87%)	0.003
Subjects with at least 1 previously uninvolved joint	102	132	
Subjects with no new JSN	90 (88%)	128 (97%)	0.008
^a N reflects randomised patients			
Values are number (%)			

There was a significantly greater number of subjects in the SIMPONI 50 mg group without an increase from baseline in total PsA modified vdH-S score compared with the placebo group (79% versus 63% respectively, p=0.007).

Due to the short duration of the controlled portion (24 weeks) of the GO-REVEAL study, the use of early escape in the study design, and the PsA patient population included in the study, the observed changes in total vdH-S score at Week 24 resulted in a small, but statistically significant, treatment effect size for SIMPONI 50 mg.

The effect of SIMPONI on radiographic progression was maintained at week 104. For the 114 patients randomised to SIMPONI 50 mg who continued SIMPONI treatment after week 52, 77% had a change from baseline in total PsA modified vdH-S score ≤ 0 at week 104. In addition, 84.2% had no new erosions and 94.7% had no new joint space narrowing at week 104.

At week 104, the mean (SD) change from baseline in total vdH-S score in subjects randomised to placebo (0.08 ± 3.193) was higher than in subjects randomised to SIMPONI 50 mg (-0.39 ± 2.041).

From week 52 to week 104, minimal to no progression in total vdH-S score was observed in subjects randomised to the placebo (-0.03 ± 1.585) or SIMPONI 50 mg (-0.01 ± 0.999) treatment groups.

Physical function and health-related quality of life: SIMPONI treatment resulted in significant improvement in physical function as assessed by HAQ-DI, as well as significant improvements in health-related quality of life as measured by the physical and mental component summary scores of the SF-36. Among patients who remained on the SIMPONI treatment to which they were randomised at study start, improvement in physical function and health-related quality of life measures were maintained through week 104.

Psoriatic arthritis (intravenous)

The efficacy and safety of SIMPONI IV were evaluated in a multi-centre, randomised, double-blind, placebo-controlled trial (GO-VIBRANT) in 480 adults with active psoriatic arthritis despite nonsteroidal anti-inflammatory drug (NSAID) or disease-modifying antirheumatic drug (DMARD) therapy. Patients in this trial had a diagnosis of PsA for at least six months and had symptoms of active disease (≥ 5 swollen joints, ≥ 5 tender joints, and a CRP level of ≥ 0.6 mg/dL). Patients were randomised to receive SIMPONI IV 2 mg/kg (N=241) or placebo (N=239) as a 30-minute intravenous infusion at Weeks 0, 4, 12 and 20. All patients on placebo received SIMPONI IV at Week 24, Week 28 and every 8 weeks thereafter through Week 52. Patients in the group treated with SIMPONI IV continued to receive infusions of SIMPONI IV at Week 28 and every 8 weeks through Week 52. Previous treatment with a biologic was not allowed. Pre-medication prior to infusion was permitted at the discretion of the investigator.

Patients were allowed to continue stable doses of MTX, NSAIDs, and low dose oral corticosteroids (equivalent to ≤ 10 mg of prednisone per day) during the study. At study enrollment, the use of other DMARDs including cytotoxic agents or other biologics was prohibited.

Patients with each subtype of PsA were enrolled, including polyarticular arthritis with absence of rheumatoid nodules (44%), asymmetric peripheral arthritis (19%), distal interphalangeal joint involvement (8.1%), spondylitis with peripheral arthritis (25%), and arthritis mutilans (4.8%). The median duration of PsA disease was 3.5 years, 86% of patients had previously used MTX, and 35% of patients received at least one other DMARD in the past. At baseline,

76% and 54% of the patients had enthesitis and dactylitis, respectively. During the trial, the use of concomitant medications was MTX (70%), oral corticosteroids (28%), and NSAIDs (71%).

The primary endpoint was the percentage of patients achieving an ACR 20 response at Week 14. The major secondary endpoints were change in baseline in the HAQ-DI score at Week 14, the proportion of subjects who achieve an ACR 50 response at Week 14, the proportion of subjects (with baseline $\geq 3\%$ Body Surface Area [BSA] psoriatic involvement) who achieve a PASI 75 response at Week 14, and the change from baseline in total modified vdH-S score at Week 24.

Reduction in signs and symptoms

SIMPONI IV treatment, compared with placebo, resulted in a significant improvement in signs and symptoms as demonstrated by the percentage of patients with an ACR 20 response at Week 14 (see Table 14).

Table 14: GO-VIBRANT: Key Efficacy Outcomes

	Placebo (N=239) ^a	SIMPONI IV (N=241) ^a	Difference from placebo (95% CI)
ACR 20 (% responders)			
Week 14	22%	75%	53% (46, 61)
Week 24	24%	77%	53% (45, 60)
ACR 50 (% responders)			
Week 14	6%	44%	37% (30, 44)
Week 24	6%	54%	47% (40, 54)
ACR 70 (% responders)			
Week 14	2%	24%	22% (17, 28)
Week 24	3%	33%	29% (23, 36)
PASI 75^c (% responders)			
Week 14	14%	59%	46% (37, 54)
Week 24	13%	65%	52% (44, 60)
HAQ-DI baseline score			
Mean \pm SD	1.26 \pm 0.58	1.31 \pm 0.56	NA
Improvement from baseline (HAQ-DI)			
Week 14			
Mean \pm SD	0.12 \pm 0.47	0.60 \pm 0.53	NA
Week 24			
Mean \pm SD	0.14 \pm 0.49	0.63 \pm 0.54	NA

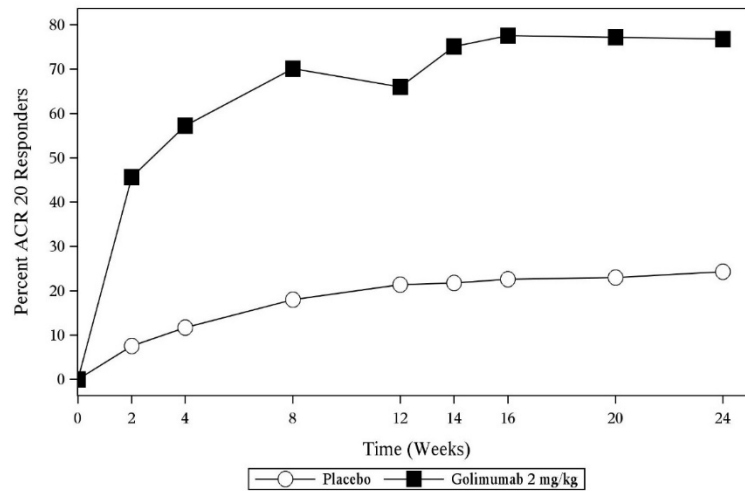
^a N reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint.

^b These results are not reported as all patients received SIMPONI IV + MTX after Week 24 due to study design.

^c Based on the subset of patients with $\geq 3\%$ body surface area (BSA) involvement at baseline

The percentage of patients achieving ACR 20 responses by visit through Week 24 for the GO-VIBRANT is shown in Figure 2.

Figure 2: GO-VIBRANT: Percentage of patients achieving ACR 20 response through Week 24; randomised patients in placebo IV + MTX and SIMPONI IV + MTX dose groups



Patients with enthesitis at baseline were evaluated for mean improvement using the Leeds Enthesitis Index (LEI) on a scale of 0-6. SIMPONI IV-treated patients showed a significantly greater improvement in enthesitis, with a mean reduction of 1.8 as compared with a mean reduction in placebo-treated patients of 0.8 at Week 14. Patients with dactylitis at baseline were evaluated for mean improvement on a scale of 0-60. SIMPONI IV-treated patients showed a significantly greater improvement, with a mean reduction of 7.8 compared with a mean reduction of 2.8 in placebo-treated patients at Week 14.

Radiographic response

Structural joint damage was assessed radiographically and expressed as a change in total modified van der Heijde Sharp (vdH S) score and its components, the erosion score and joint space narrowing (JSN) score, at Week 24 compared to baseline (Table 15).

Table 15: IV PsA Study 1: Radiographic Change from Baseline at Week 24

	Placebo N=237		SIMPONI IV N=237	
	Baseline	Week 24 Change from baseline	Baseline	Week 24 Change from baseline
Total Modified vdH-S Score	34.4 (53.5)	2.0 (0.3)	35.5 (55.1)	-0.4 (0.1)*
Erosion Score	21.1 (30.2)	1.3 (2.8)	22.2 (31.7)	-0.3 (1.7)*
JSN Score	13.3 (24.3)	0.6 (1.7)	13.2 (24.8)	-0.1 (1.1)*

Note: All values are means (standard deviation).

* p<0.001

Among patients with ≥ 1 joint with a JSN score of 0 at baseline (92%), a greater proportion of SIMPONI IV-treated patients showed no new erosions and no new joint space narrowing compared with placebo-treated patients at Week 24 (see Table 16).

Table 16: IV PsA Study: Percentage of Patients with New erosions and JSN in previously uninvolved joints (Week 24)

	Placebo N=237	SIMPONI IV N=237
Patients with at least 1 previously uninvolved joint	213	230
Patients with no new erosions	115 (54%)	171 (74%)*
Patients with at least 1 previously uninvolved joint	214	229
Patients with no new JSN	162 (76%)	205 (90%)*

Values are number (%)

* p<0.001

At Week 24, a greater proportion of patients in the SIMPONI IV-treated group (72%) had no progression of structural damage (change in the total modified vdH-S score ≤ 0), compared to 43% of patients in the placebo group (p<0.001).

Improvement in physical function and health-related quality of life

Physical function and health-related quality of life were assessed using the disability index of the HAQ (HAQ-DI), and the SF-36 health survey.

Patients treated with SIMPONI IV showed significantly greater median improvement from baseline in the HAQ-DI score compared with placebo at Week 14 (0.63 vs. 0.13; p<0.001) and Week 24 (0.63 vs. 0.13; p<0.001). Patients treated with SIMPONI IV showed significantly greater median improvement from baseline in the SF-36 physical component summary (PCS) score compared with placebo at Week 14 (8.7 vs. 1.8; p<0.001) and Week 24 (9.3 vs. 1.5).

Patients treated with SIMPONI IV showed significantly greater median improvement from baseline in the SF-36 mental component summary (MCS) score compared with placebo at Week 14 (5.2 vs. 0.4; p<0.001) and Week 24 (4.1 vs. 1.3).

Ankylosing spondylitis (subcutaneous)

The safety and efficacy of SIMPONI were evaluated in a multi-centre, randomised, double-blind, placebo-controlled study (GO-RAISE) in 356 adult patients with active ankylosing spondylitis (defined as a Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) score ≥ 4 and a visual analog score (VAS) for total back pain of ≥ 4 , on a scale of 0 to 10 cm).

Patients enrolled in this study had symptoms of active disease despite current or previous NSAID or DMARD therapy. The median duration of AS disease was 5.6 years. Patients with complete ankylosis of the spine were excluded from study participation. This study also excluded patients previously treated with TNF blocking agents, and patients with serious or chronic infections, history of congestive heart failure, demyelinating disorders or a history of malignancy with the exception of treated non-melanoma skin cancer. SIMPONI was administered subcutaneously at doses of 50 mg or 100 mg every 4 weeks. Patients were randomly assigned to placebo (n=78), SIMPONI 50 mg (n=138) and SIMPONI 100 mg (n=140). The primary endpoint was the percentage of patients achieving a 20%

improvement in the Assessment in Ankylosing Spondylitis (ASAS 20) response criteria at week 14. Efficacy data were collected and analysed through week 24.

Key results for the 50 mg dose are shown in Table 17 below. In general, no clinically meaningful differences in measures of efficacy were observed between the SIMPONI 50 mg and 100 mg dosing regimens.

Table 17: Key efficacy outcomes from GO-RAISE

	Placebo	SIMPONI 50 mg*
N ^a	78	138
Responders, % of patients		
ASAS 20		
Week 14	22 %	59 %
Week 24	23 %	56 %
ASAS 40		
Week 14	15 %	45 %
Week 24	15 %	44 %
ASAS 5/6		
Week 14	8 %	50 %
Week 24	13 %	49 %
BASFI (0-10): median change from baseline		
Baseline (median)	4.9	5.0
Week 14	0.1	-1.4
Week 24	0.4	-1.6
*: p ≤ 0.001 for all comparisons		
a: N reflects randomised patients; actual number of patients evaluable for each endpoint may vary by timepoint		

Compared with placebo, SIMPONI treatment resulted in a significant improvement in signs and symptoms as demonstrated by the ASAS and BASDAI scores at weeks 14 and 24. Patients treated with SIMPONI achieved significantly greater improvement in all ASAS 20 components compared with placebo. Improvements in key measures of disease activity were observed at the first assessment (week 4) after the initial SIMPONI administration and were maintained through week 24. Consistent efficacy was seen in patients regardless of HLA-B27 antigen status or baseline CRP levels as assessed by ASAS 20 responses at week 14.

SIMPONI treatment resulted in significant improvements in physical function as assessed by changes from baseline in the Bath Ankylosing Spondylitis Functional Index (BASFI) at weeks 14 and 24. Median improvement in BASFI at week 14 was 1.4 in the SIMPONI 50 mg group, compared with worsening by 0.1 in the placebo group (p < 0.001). The improvement in physical function was maintained through week 24 in SIMPONI-treated patients. Health-related quality of life as measured by the physical component score of the SF-36 was also improved significantly at weeks 14 and 24.

Non-radiographic axial spondyloarthritis (subcutaneous)

The safety and efficacy of Simponi were evaluated in a multi-centre, randomised, double-blind, placebo-controlled study (GO-AHEAD) in 197 adult patients with active nr-Axial SpA (defined as those patients meeting the ASAS classification criteria of axial spondyloarthritis but did not meet the modified New York criteria for AS). Patients enrolled in this study had active disease (defined as a BASDAI ≥ 4 and a Visual Analogue Scale (VAS) for total back pain of ≥ 4, each on a scale of 0-10 cm) despite current or previous NSAID therapy and had

not previously been treated with any biological agents including anti-TNF therapy. Patients were randomly assigned to placebo or Simponi 50 mg administered subcutaneously every 4 weeks. At week 16, patients entered an open label period in which all patients received SIMPONI 50 mg administered subcutaneously every 4 weeks through week 48 with efficacy assessments performed through week 52 and safety follow-up through week 60.

Approximately 93% of patients who were receiving SIMPONI at the beginning of the open-label extension (week 16) remained on treatment through the end of the study (week 52). Analyses were performed on both the All Treated (AT, N = 197) and Objective Signs of Inflammation (OSI, N = 158, defined by elevated CRP and/or evidence of sacroiliitis on MRI at baseline) populations. Placebo-controlled efficacy data were collected and analysed through week 16.

Baseline demographics and disease characteristics were generally comparable across both treatment groups. At baseline, the majority of patients (67%) had a diagnosis of nr-Ax SpA of less than 1 year duration. The mean BASDAI score at baseline was 6.5 ± 1.5 cm.

Approximately 81% of the total patient population at baseline received concomitant NSAID therapy. Approximately 41% of patients showed elevated CRP levels > upper limit of normal, 67% of subjects had evidence of sacroiliitis on MRI, and 80% showed evidence of elevated CRP levels > upper limit of normal and/or evidence of sacroiliitis on MRI. Most patients were male (57%), all (100%) were Caucasian, and the mean age was 31.2 (± 7.2) years.

The primary endpoint was the proportion of patients achieving ASAS 20 response at week 16. Key results are shown in Table 18 and described below.

Table 18: Key efficacy outcomes from GO-AHEAD at week 16

Improvements in signs and symptoms				
	All treated population (AT)		Objective signs of inflammation population (OSI)	
	Placebo	SIMPONI 50 mg	Placebo	SIMPONI 50 mg
n ^a	100	97	80	78
Responders, % of patients				
ASAS 20 ^b	40%	71%**	38%	77%**
Difference in % vs placebo (95% CI) p-value	31.2 (17.5, 43.6) <0.0001**		39.6 (24.6, 52.6) <0.0001**	
ASAS 40	23%	57%**	23%	60%**
ASAS 5/6	23%	54%	23%	63%
ASAS Partial Remission	18%	33%*	19%	35%*
BASDAI 50	30%	58%**	29%	59%**

Inhibition of inflammation in sacroiliac (SI) joints as measured by MRI				
	Placebo	SIMPONI 50 mg	Placebo	SIMPONI 50 mg
n ^c	87	74	69	61
Mean change in SPARCC ^d MRI sacroiliac joint score	-0.9	-5.3**	-1.2	-6.4**

^a n reflects randomised and treated patients

^b Primary endpoint

^c n reflects number of patients with baseline and week 16 MRI data

^d SPARCC (Spondyloarthritis Research Consortium of Canada)

** p < 0.0001 for Simponi vs placebo comparisons

* p < 0.05 for Simponi vs placebo comparisons

Statistically significant improvements in signs and symptoms of severe active nr-Axial SpA were demonstrated in patients treated with Simponi 50 mg compared to placebo at week 16 (Table 18). Improvements were observed at the first assessment (week 4) after the initial Simponi administration. SPARCC score as measured by MRI showed statistically significant reductions in SI joint inflammation at week 16 in patients treated with Simponi 50 mg compared to placebo (Table 18). Pain as assessed by the Total Back Pain and Nocturnal Back Pain VAS, and disease activity as measured by ASDAS-C also showed improvement from baseline to week 16 in patients treated with Simponi 50 mg compared to placebo.

Improvements in spinal mobility as assessed by BASMI (Bath Ankylosing Spondylitis Metrology Index) and in physical function as assessed by the BASFI were demonstrated in Simponi 50 mg-treated patients as compared to placebo-treated patients. Patients treated with Simponi experienced more improvements in health-related quality of life as assessed by ASQoL, EQ-5D, and physical and mental components of SF-36, and experienced more improvements in productivity as assessed by greater reductions in overall work impairment and in activity impairment as assessed by the WPAI questionnaire than patients receiving placebo. The endpoints for work time missed and impairment while working, as assessed by the WPAI questionnaire, showed no evidence of difference between the golimumab and placebo groups.

For all of the endpoints described above, improvements were also demonstrated in the OSI population at week 16.

In both the AT and OSI populations, clinical responses were maintained through 52 weeks of therapy (which included 36 weeks open-label).

In the subset of patients who had both a negative MRI and a normal CRP at baseline, a benefit on treatment with SIMPONI was not observed.

There are no data on the effects of golimumab on disease progression or structural damage in nr- Axial SpA patients.

Ankylosing spondylitis (intravenous)

The efficacy and safety of SIMPONI IV were evaluated in a multi-centre, randomised, double-blind, placebo-controlled trial (GO-ALIVE) in 208 adults with active ankylosing spondylitis and inadequate response or intolerance to NSAIDs. Patients had a diagnosis of definite AS for at least 3 months according to modified New York criteria. Patients had symptoms of active disease (Bath AS Disease Activity Index [BASDAI] ≥ 4 , VAS for total back pain of ≥ 4 , on scales of 0 to 10 cm (0 to 100 mm), and a CRP level of ≥ 0.3 mg/dL (3 mg/L)). Patients were randomised to receive SIMPONI IV 2 mg/kg (N=105) or placebo (N=103) as a 30-minute intravenous infusion at Weeks 0, 4 and 12. All patients on placebo received SIMPONI IV at Week 16, Week 20 and every 8 weeks thereafter through Week 52. Patients in the SIMPONI IV -treatment group continued to receive SIMPONI IV infusions at Week 20 and every 8 weeks through Week 52. Pre-medication prior to infusion was permitted at the discretion of the investigator. Patients were allowed to continue stable doses of concomitant MTX, SSZ, hydroxychloroquine (HCQ), low dose oral corticosteroids (equivalent to ≤ 10 mg of prednisone per day), and/or NSAIDs during the trial. At study enrollment, the use of other DMARDs including cytotoxic agents or other biologics was prohibited.

The median duration of AS disease was 2.8 years, median duration of inflammatory back pain was 8 years, 90% were HLA-B27 positive, 8.2% had prior joint surgery or procedure, 5.8% had complete ankylosis of the spine, 14% had received prior therapy with one TNF blocker (other than golimumab) and discontinued for reasons other than lack of efficacy within the first 16 weeks of treatment (primary failure), and 76% received at least one DMARD in the past. During the trial, the use of concomitant medications was NSAIDs (88%), SSZ (38%), corticosteroids (26%), MTX (18%), and HCQ (0.5%).

The primary endpoint was the percentage of patients achieving an Assessment in Ankylosing Spondylitis (ASAS) 20 response at Week 16. The major secondary endpoints were the proportion of subjects who achieve an ASAS 40 response at Week 16, the proportion of subjects who achieve at least a 50% improvement from baseline in BASDAI at Week 16, and the change from baseline in BASFI at Week 16.

Reduction in signs and symptoms

Treatment with SIMPONI IV, compared with placebo, resulted in a significant improvement in signs and symptoms as demonstrated by the percentage of patients with an ASAS 20 response at Week 16 (see Table 19).

Table 19: GO-ALIVE: Key efficacy outcomes

	Placebo N ^a =103	SIMPONI IV N ^a =105	Treatment Difference (95% CI)
% Responders			
ASAS 20	26%	73%	47%^b (35.2, 59.0)
ASAS 40	8.7%	48%	39% ^b (27.9, 49.8)
ASAS partial remission	3.9%	16%	12.3% ^c (4.4, 20.3)
ASAS 5/6	12%	65%	53.0% ^b (42.1, 64.0)
BASDAI 50	15%	41%	26.4 (14.8, 37.9)

^a N reflects randomised patients.

Bold text indicates primary endpoint.

^b p<0.001

^c p=0.003

The percentage of patients achieving ASAS 20 responses by visit through Week 16 for GO-ALIVE is shown in Figure 3. ASAS 20 responses were observed in 37% of patients treated with SIMPONI IV at the first assessment (Week 2) compared with 19% placebo-treated patients.

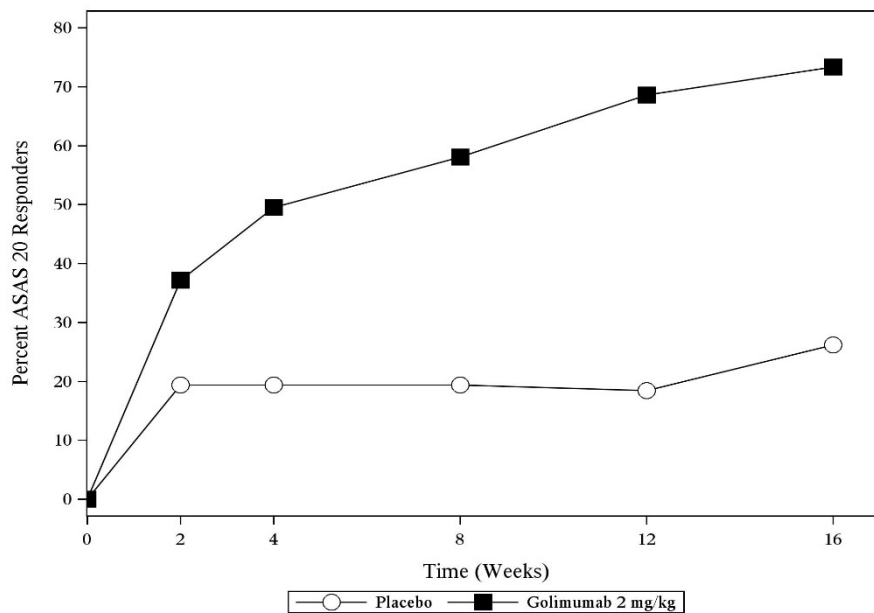
Figure 3: GO-ALIVE: Percentage of Patients Achieving an ASAS 20 Response Through Week 16: randomised patients

Table 20 shows the improvements in the components of the ASAS response criteria and other measures of disease activity, BASMI and BASDAI score at Week 16 for the SIMPONI IV and placebo groups.

Table 20: GO-ALIVE: Change from baseline in ASAS Components and Other Measures of Disease Activity at Week 16: randomised patients

	Placebo N=103 ^a		SIMPONI IV N=105 ^a	
	Baseline	Week 16 change from baseline	Baseline	Week 16 change from baseline
ASAS 20 Response criteria				
Patient Global Assessment of Disease Activity (0-100 mm) ^b	7173	-8.3	73	-34
Total back pain (0-100 mm) ^c	73	-12	72	-32
BASFI (0-10) ^d	6.1	-0.6	6.3	-2.4*
Inflammation (0-10) ^e	7.4	-1.1	7.3	-3.6
CRP (mg/L)	19	-2.3	20	-17
BASMI ^f	5.0	-0.1	5.0	-0.4*
BASDAI Score	7.1	-1.1	7.1	-3.1*

Note: All values are means.

* p<0.001

^a N reflects randomised patients; actual number of patients evaluable for each endpoint may vary.

^b Measured on a Visual Analog Scale (VAS) with 0= very well, 100=very poor

^c Measured on a Visual Analog Scale (VAS) with 0= no pain, 100=most severe pain

^d BASFI is Bath Ankylosing Spondylitis Functional Index.

^e Inflammation is the mean of 2 morning stiffness self-assessments in the BASDAI.

^f BASMI is Bath Ankylosing Spondylitis Metrology Index .

Improvement in physical function

Treatment with SIMPONI IV resulted in significant improvements in physical function as assessed by changes from baseline in BASFI at Week 16. At Weeks 2 and 16, the respective median decrease (improvement) from baseline in the BASFI for the golimumab and placebo groups were -0.9 and -0.3 at Week 2 and -2.2 vs -0.3 at Week 16. The improvement in physical function was maintained at Week 28 in patients treated with SIMPONI IV.

Improvement in range of motion

Bath Ankylosing Spondylitis Metrology Index (BASMI) is a musculoskeletal assessment and is represented as an aggregate score of 5 components (lumbar flexion, lumbar side flexion, intermalleolar distance, tragus to wall distance, and cervical rotation). At Week 16, the median decrease (improvement) from baseline in BASMI was of greater magnitude in patients treated with SIMPONI IV (-0.4) compared to placebo (-0.05, p=0.001).

Improvement in health-related quality of life

Improvements in health-related quality of life was measured by the SF 36 (Short Form 36 Health Survey) Physical and Mental Component Summaries and ASQoL (Ankylosing Spondylitis Quality of Life questionnaire).

Patients receiving SIMPONI IV demonstrated significantly greater median improvement from baseline compared with placebo in the physical component summary (PCS, 7.8 vs. 2.7, p<0.001) score at Week 16.

Patients receiving SIMPONI IV demonstrated significantly greater median improvement from baseline compared with placebo in the mental component summary (MCS, 5.7 vs. 1.8, p<0.001) score at Week 16.

Ankylosing Spondylitis Quality of Life Questionnaire (ASQoL) is a disease-specific instrument used to measure quality of life in the AS patient population. It consists of 18 items requesting a yes or no response to questions related to the impact of pain on sleep, mood, motivation, ability to cope, activities of daily living, independence, relationships, and social life. Lower scores indicate improvement. Median baseline ASQoL scores in the SIMPONI IV -treated group and placebo group were 14 and 13, respectively. Patients treated with SIMPONI IV achieved greater median decrease (improvement) from baseline in the ASQoL score compared to placebo-treated patients at Week 16 (-4.0 vs. -1.0, $p < 0.001$).

Ulcerative Colitis (subcutaneous)

The safety and efficacy of SIMPONI were evaluated in two multicentre, randomised, double-blind, placebo-controlled clinical studies in patients ≥ 18 years of age.

The induction study (PURSUIT-Induction) evaluated patients with moderately to severely active ulcerative colitis (Mayo score 6 to 12; Endoscopy subscore ≥ 2) who had an inadequate response to or failed to tolerate conventional therapies, or were corticosteroid dependent. The study was a combination Phase 2 (dose finding) and Phase 3 (dose confirming) study. In the dose finding portion of the study, patients were randomised to one of 4 treatment groups: 400 mg of SIMPONI administered subcutaneously (SC) at Week 0 and 200 mg at Week 2 (400/200 mg), 200 mg SIMPONI SC at Week 0 and 100 mg at Week 2 (200/100 mg), 100 mg SIMPONI SC at Week 0 and 50 mg at Week 2 (100/50 mg), or placebo SC at Weeks 0 and 2. In the dose confirming portion of the study, 761 patients were randomised to receive either 400 mg SIMPONI SC at Week 0 and 200 mg at Week 2, 200 mg SIMPONI SC at Week 0 and 100 mg at Week 2, or placebo SC at Weeks 0 and 2. Stable treatment with oral 5-aminosalicylic acid, oral corticosteroids, 6-mercaptopurine or azathioprine or a history of failure to response to or tolerate at least one of those previous treatments or steroid dependency were also entry criteria. Subjects with severe extensive colitis, subjects with UC limited to the rectum or to < 2 cm of colon and subjects who had ever received biologic therapy targeted at TNF α (e.g., infliximab, etanercept, certolizumab, adalimumab) were excluded. The primary endpoint was clinical response at Week 6. The major secondary endpoints were clinical remission, mucosal healing, and the improvement in the IBDQ score, all at Week 6.

The maintenance study (PURSUIT-Maintenance) evaluated 456 patients who achieved clinical response from previous induction with SIMPONI. Patients were randomised to receive SIMPONI 50 mg, SIMPONI 100 mg or placebo administered subcutaneously every 4 weeks. Concomitant stable doses of oral aminosalicylates and/or immunomodulatory agents were permitted. Corticosteroids were to be tapered at the start of the maintenance study. The efficacy of SIMPONI through Week 54 was assessed in this study. The primary endpoint was maintenance of clinical response through Week 54. Selected major secondary endpoints included clinical remission at both Week 30 and Week 54 and mucosal healing at both Week 30 and Week 54. Patients who completed the maintenance study through Week 54 continued treatment in a study extension, with efficacy evaluated through Week 216.

In both studies, clinical response and clinical remission were defined based on the Mayo score, which consists of four subscores: stool frequency, rectal bleeding, findings of endoscopy, and physician's global assessment. Each subscore is rated on a scale from 0 to 3, indicating normal (0) to severe (3) activity. The Mayo score is the sum of the 4 subscores.

Clinical response was defined as a decrease from Week 0 of induction in the Mayo score of $\geq 30\%$ and ≥ 3 points, accompanied by a decrease in the rectal bleeding subscore of ≥ 1 or a rectal bleeding subscore of 0 or 1. Clinical remission was defined as a Mayo score ≤ 2 points, with no individual subscore >1 . Mucosal healing was defined as an endoscopy subscore (from the Mayo score) of 0 or 1.

Table 21 Key efficacy outcomes from PURSUIT-Induction and PURSUIT-Maintenance studies

PURSUIT- Induction Study			
	Placebo N=251	SIMPONI 200/100 mg N=253	p value^a
Patients in clinical response ^b at week 6	30.3%	51.0%	<0.0001
Patients in clinical remission ^c at week 6	6.4%	17.8%	<0.0001
Patients with mucosal healing ^d at week 6	28.7%	42.3%	0.0014
PURSUIT-Maintenance Study			
	Placebo N=154	SIMPONI 100 mg N=151	p value
Maintenance of response (Patients in clinical response through Week 54) ^e	31.2%	49.7%	<0.001
Sustained remission (Patients in clinical remission at both Week 30 and Week 54) ^f	15.6%	27.8%	0.004
Sustained mucosal healing (Patients with mucosal healing at both Week 30 and Week 54) ^d	26.6%	42.4%	0.002

^a P value for SIMPONI treatment group vs placebo

^b Defined as a decrease from baseline in the Mayo score of $\geq 30\%$ and ≥ 3 points, accompanied by a decrease in the rectal bleeding subscore of ≥ 1 or a rectal bleeding subscore of 0 or 1

^c Defined as a Mayo score ≤ 2 points, with no individual subscore >1

^d Defined as 0 or 1 on the endoscopy subscore of the Mayo score.

^e Patients were assessed for UC disease activity by partial Mayo score every 4 weeks (loss of response was confirmed by endoscopy). Therefore, a patient who maintained response was in a state of continuous clinical response at each evaluation through Week 54.

^f A patient had to be in remission at both weeks 30 and 54 (without demonstrating a loss of response at any time point through Week 54) to achieve durable remission.

In PURSUIT-Induction, a greater reduction in the partial Mayo score was evident as early as Week 2 in the SIMPONI 200/100 mg group compared with the placebo group and this reduction was maintained through Week 6

Among the 35% of patients (160/456) in clinical remission at the start of PURSUIT-Maintenance, 38.9% (21/54) given SIMPONI 100 mg and 24.1% (13/54) given placebo maintained clinical remission at Weeks 30 and 54 ($p=0.07398$).

There is no experience of the use of SIMPONI in patients with UC who have previously received other TNF antagonists.

Immunogenicity

As with all therapeutic proteins, there is potential for immunogenicity. The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralising antibody) positivity in an assay may be influenced by several factors including assay methodology, sample

handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of the incidence of antibodies to golimumab in the trials described below with the incidence of antibodies in other trials or to other products may be misleading.

Immunogenicity Results with the EIA method

Antibodies to golimumab were detected in 4.3% (57/1322) of SIMPONI-treated patients following SC administration across the Phase 3 RA, PsA and AS studies through week 24 of which all were neutralising *in vitro*. Similar rates were shown across rheumatologic indications. Treatment with concomitant MTX resulted in a lower proportion of patients with antibodies to golimumab than patients receiving SIMPONI without MTX (approximately 2% [14/719] versus 7% [43/603], respectively). Following SC administration in patients with nr-Axial SpA, antibodies to golimumab, all neutralising *in vitro*, were detected in 7% of SIMPONI-treated patients through Week 52.

Following SC administration in UC patients, antibodies to golimumab were detected in 2.7% of SIMPONI-treated patients through week 54. Sixty-eight percent of antibody-positive patients had neutralising antibodies *in vitro*. Treatment with concomitant immunomodulators (azathioprine, 6-mercaptopurine and MTX) resulted in a lower proportion of patients with antibodies to golimumab than patients receiving SIMPONI without immunomodulators (1.3% versus 3.4%, respectively).

Following IV administration of SIMPONI in combination with MTX in RA patients, antibodies to golimumab were detected in 4.2% (39/922) of golimumab-treated patients through approximately 1 year. All patients who were positive for antibodies to golimumab had neutralising antibodies *in vitro*.

The small number of patients positive for antibodies to golimumab with the EIA method limits the ability to draw definitive conclusions regarding the relationship between antibodies to golimumab and clinical efficacy or safety measures.

Immunogenicity Results with the Drug-Tolerant EIA method

A drug-tolerant enzyme immunoassay (drug-tolerant EIA) method for detecting antibodies to golimumab was developed and validated. This method is approximately 16-fold more sensitive than the original EIA method with less interference from golimumab in serum.

Following IV administration in patients with RA, PsA or AS, antibodies to golimumab were detected by the drug tolerant EIA method in 20% of SIMPONI-treated patients (RA: 21%, PsA: 19%, and AS: 19%). Where tested, approximately one-third of the antibodies to golimumab were neutralising. Treatment with concomitant MTX resulted in a slightly lower proportion of patients with antibodies to golimumab than patients receiving golimumab without MTX (approximately 19% vs. 25%, respectively).

The higher incidence of antibodies to golimumab with the drug-tolerant EIA method were mostly due to low-titre antibodies, which did not have an apparent impact on drug concentrations, efficacy and safety. Although higher-titre antibodies, which were mostly neutralising, may be associated with lower drug concentrations and diminished efficacy, there were few patients with high titres in the IV PsA and IV AS studies. Development of antibodies to golimumab did not preclude clinical response.

5.2 PHARMACOKINETIC PROPERTIES

Following subcutaneous (SC) administration of SIMPONI to healthy subjects or patients with RA, the median time to reach maximum serum concentrations (T_{max}) ranged from 2 to 6 days. A SC injection of 50 mg golimumab to healthy subjects produced a mean \pm standard deviation maximum serum concentration (C_{max}) of $3.1 \pm 1.4 \mu\text{g/mL}$. Following a single SC dose in healthy subjects, approximately dose-proportional pharmacokinetics were also observed over a dose range of 50 mg to 400 mg. Golimumab exhibited dose-proportional pharmacokinetics in patients with RA over the dose range of 0.1 to 10.0 mg/kg following a single intravenous (IV) dose. Following a single IV administration over the same dose range in patients with RA, mean systemic clearance of golimumab was estimated to be 4.9 to 6.7 mL/day/kg, and mean volume of distribution ranged from 58 to 126 mL/kg, which indicates that golimumab is distributed primarily in the circulatory system with limited extravascular distribution. Median terminal half-life values were estimated to be 12 ± 3 days in healthy subjects and similar half-life values were observed in patients with RA, PsA, AS or ulcerative colitis (UC). Following a single SC injection of 100 mg, the absorption of SIMPONI was similar in the upper arm, abdomen, and thigh, with a mean absolute bioavailability of 51%. Since golimumab exhibited approximately dose proportional pharmacokinetics following SC administration, the absolute bioavailability of SIMPONI 50 mg or 200 mg dose is expected to be similar to the 100 mg dose.

When 50 mg SIMPONI was administered SC to patients with RA, PsA or AS every 4 weeks, serum concentrations reached steady state by week 12. With concomitant use of MTX, treatment with 50 mg SIMPONI SC every 4 weeks resulted in a median steady-state trough serum concentration of approximately $0.6 \mu\text{g/mL}$ in RA patients with active RA despite MTX therapy, and approximately $0.5 \mu\text{g/mL}$ in patients with active PsA and approximately $0.6 \mu\text{g/mL}$ in patients with AS. Patients with RA, PsA and AS treated with SIMPONI 50 mg and MTX had approximately 52%, 36% and 21% higher mean steady-state trough concentrations of golimumab, respectively, compared with those treated with SIMPONI 50 mg without MTX. The presence of MTX also decreased the incidence of antibodies to golimumab from 7% to 2% (see section **5.1 PHARMACODYNAMIC PROPERTIES, Clinical Trials, Immunogenicity**). Population pharmacokinetic analysis in patients with RA also indicated that concomitant use of MTX could reduce the apparent clearance of golimumab by 17.1%. However, concomitant use of non-steroidal anti-inflammatory drugs, oral corticosteroids or sulfasalazine (SSZ) were not found to influence the apparent clearance of golimumab.

Steady-state mean trough serum golimumab concentrations in patients with nr-Axial SpA were similar to those observed in patients with AS following subcutaneous administration of 50 mg golimumab every 4 weeks.

When 2 mg/kg golimumab was administered intravenously to patients with RA at weeks 0, 4 and every 8 weeks thereafter, serum concentrations reached steady state by Week 12. With concomitant use of MTX, treatment with 2 mg/kg golimumab every 8 weeks resulted in a mean steady-state trough serum concentration of approximately $0.4 \pm 0.4 \text{ mcg/mL}$ in patients with active RA. The mean steady-state trough serum concentration in patients with PsA was $0.7 \pm 0.6 \text{ mcg/mL}$. The mean steady-state trough serum concentration in patients with AS was $0.8 \pm 0.6 \text{ mcg/mL}$.

Following induction doses of 200 mg and 100 mg SIMPONI SC at Week 0 and 2 respectively, and maintenance doses of 100 mg SIMPONI SC every 4 weeks thereafter in patients with UC, serum golimumab concentrations reached steady-state approximately 14 weeks after the start of therapy. Treatment with 100 mg SIMPONI SC every 4 weeks during maintenance resulted in a mean steady-state trough serum concentration of approximately $1.8 \pm 1.1 \mu\text{g/mL}$. Concomitant use of immunomodulators did not have any apparent effect on steady-state trough levels of golimumab when 100 mg SIMPONI was administered SC every 4 weeks to UC patients.

Population pharmacokinetic analyses showed there was a trend toward higher apparent clearance of golimumab with increasing weight. However, subgroup analyses by weight quartiles did not demonstrate a meaningful difference in clinical efficacy between the different dose groups. Treatment with the recommended dose regimen of SIMPONI in UC patients did not result in meaningful differences in clinical efficacy among the different weight subgroups. Therefore, there is no need to adjust the dosage of SIMPONI based on the patient's weight.

Patients who developed antibodies to golimumab generally had increased clearance and low trough steady-state serum concentrations of golimumab (see **5.1 PHARMACODYNAMIC PROPERTIES, Clinical Trials, Immunogenicity**).

Phase 3 studies evaluated the safety and efficacy of SIMPONI at a dosage regimen of every 4 weeks with a prospectively allowed window of 3 to 7 days. Patients would receive a total of 13 doses over 1 year when SIMPONI is given every 4 weeks instead of 12 doses when given monthly. This results in a calculated difference in golimumab exposure of approximately 8% when administered monthly as recommended.

No formal study of the effect of renal or hepatic impairment on the pharmacokinetics of golimumab was conducted.

5.3 PRECLINICAL SAFETY DATA

Genotoxicity

No genotoxicity tests have been conducted with golimumab.

Carcinogenicity

Long-term animal carcinogenicity studies with golimumab have not been conducted.

6 PHARMACEUTICAL PARTICULARS

6.1 LIST OF EXCIPIENTS

Sorbitol
Histidine
Histidine hydrochloride monohydrate
Polysorbate 80
Water for injections

6.2 INCOMPATIBILITIES

Incompatibilities were either not assessed or not identified as part of the registration of this medicine.

6.3 SHELF LIFE

In Australia, information on the shelf life can be found on the public summary of the Australian Register of Therapeutic Goods (ARTG). The expiry date can be found on the packaging.

6.4 SPECIAL PRECAUTIONS FOR STORAGE

SIMPONI pre-filled syringe or SmartJect injector pen

Store in a refrigerator (2°C - 8°C). Do not freeze. Do not shake. Keep the pre-filled pen/syringe in the outer carton in order to protect it from light.

SIMPONI may be stored at room temperature up to a maximum of 25°C for a single period of up to 30 days in the original carton; after which, it should not be refrigerated again. SIMPONI must be protected from light. It should be discarded if not used within 30 days of removal from refrigeration.

SIMPONI IV vial

Store in a refrigerator (2°C – 8°C). Do not freeze. Do not shake. Keep the vial in the outer carton in order to protect it from light.

Once the solution has been diluted, it should be stored at room temperature, protected from light and the infusion should be completed within 6 hours of preparation.

SIMPONI vial for intravenous administration may be stored at room temperature up to a maximum of 25°C for a single period of up to 30 days in the original carton; after which, it should not be refrigerated again. SIMPONI must be protected from light. It should be discarded if not used within 30 days of removal from refrigeration.

6.5 NATURE AND CONTENTS OF CONTAINER

SIMPONI pre-filled syringe

SIMPONI is supplied as a sterile solution in a Type 1 glass syringe with a fixed stainless steel needle. The needle shields are manufactured from dry natural rubber containing latex (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**, “Allergic reactions”).

SIMPONI pre-filled syringe is available in two strengths: 50 mg of golimumab in 0.5 mL and 100 mg of golimumab in 1 mL in packs of 1 or 3* pre-filled syringe(s).

SIMPONI SmartJect injector pen

SIMPONI is supplied as a sterile solution in a Type 1 glass syringe with a fixed stainless steel needle. This syringe is contained in a single-use pre-filled pen called “SmartJect”. The needle shields are manufactured from dry natural rubber containing latex (see section **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**, “Allergic reactions”).

SIMPONI SmartJect injector pen is available in two strengths: 50 mg of golimumab in 0.5 mL and 100 mg of golimumab in 1 mL in packs of 1 or 3* pre-filled pen(s).

* Not currently supplied in Australia.

SIMPONI IV vial for intravenous administration

SIMPONI IV is supplied as a colourless to light yellow solution in a Type 1 glass vial with a laminated serum stopper with aluminium seal and a dark blue coloured flip-off button.

SIMPONI IV is available in a single use vial: 50 mg golimumab per 4 mL vial (or 12.5 mg of golimumab per mL). SIMPONI IV is available in packs of 1 vial.

6.6 SPECIAL PRECAUTIONS FOR DISPOSAL

In Australia, any unused medicine or waste material should be disposed of in accordance with local requirements.

6.7 PHYSICOCHEMICAL PROPERTIES

CAS number

476181-74-5

7 MEDICINE SCHEDULE (POISONS STANDARD)

S4 – Prescription Only Medicine

8 SPONSOR

Janssen-Cilag Pty Ltd,
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Auckland, NEW ZEALAND
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9 DATE OF FIRST APPROVAL

13 November 2009

10 DATE OF REVISION

8 February 2021

SUMMARY TABLE OF CHANGES

Section Changed	Summary of new information
4.8	Add Kaposi's sarcoma in Table 4 of Post-marketing experience