



DARZALEX™ (daratumumab) Approved by Health Canada as the First Human Anti-CD38 Monoclonal Antibody for the Treatment of Multiple Myeloma

A new therapy providing an important option for multiple myeloma patients who have received three or more prior lines of therapy

Toronto, ON, June 30, 2016 – Janssen Inc. announced today Health Canada has issued a Notice of Compliance with Conditions (NOC/c) approving DARZALEX™ (daratumumab) for the treatment of patients with multiple myeloma who have received at least three prior lines of therapy including a proteasome inhibitor (PI) and an immunomodulatory agent (IMiD), or who are refractory to both a PI and an IMiD. Health Canada approved this product on the condition that Janssen Inc. carries out confirmatory trials to verify the clinical benefit of DARZALEX™.¹

Multiple myeloma is an incurable blood cancer that can be very complex to treat. Most patients relapse or become resistant to standard therapies, which makes the approval of new treatment options so important.^{2,3} DARZALEX™ is a first-in-class, fully human monoclonal antibody (mAb), targeting CD38, a surface protein highly expressed across multiple myeloma cells.⁴ DARZALEX™ inhibits the growth of CD38-expressing tumour cells, and may utilize multiple effector functions resulting in immune-mediated tumour cell death.

“The clinical data showed striking efficacy and safety for patients with multiple myeloma who have tried and failed on other available treatment options,” says Dr. Darrell White, Hematologist, Queen Elizabeth II Health Sciences Centre, Halifax.* “DARZALEX™ fills a critical unmet need in the treatment of this devastating disease because it works using a mechanism of action that is unique among other approved therapies.”

The NOC/c policy provides access to promising new drugs for patients suffering from serious, life-threatening or severely debilitating diseases, or conditions for which no drug is currently marketed in Canada, or for which a significant increase in efficacy or significant decrease in risk is demonstrated in relation to existing drugs marketed in Canada.⁵ The DARZALEX™ approval with conditions was based on the primary efficacy endpoint of overall response rate demonstrated in the Phase 2 single-arm SIRIUS study that was published in [The Lancet](#) in 2016. The study enrolled patients with multiple myeloma who had received at least three prior lines of therapy, including a proteasome inhibitor (PI) and an immunomodulatory agent (IMiD), or were double refractory to a PI and an IMiD.⁶ The data showed DARZALEX™ demonstrated a 29 per cent overall response rate and a tolerable safety profile in these heavily pre-treated patients.⁷

The approval was also supported by data from other studies, including the multi-centre, two-part open-label Phase 1/2 GEN501 monotherapy study published in [The New England Journal of Medicine](#) in September 2015. This study enrolled patients with multiple myeloma who had a relapse after, or had disease that was refractory to, two or more different prior therapies, including IMiDs, PIs, chemotherapy, and autologous stem-cell transplantation. The study showed DARZALEX™ demonstrated a tolerable safety profile and a 36 per cent overall response rate in patients treated with a 16 mg/kg dose, with responses deepening over time.⁸

“The reality is multiple myeloma is an incurable cancer and despite treatment advances, most patients relapse or become resistant to available therapies,” says Aldo Del Col, Co-Founder and Chairman, Myeloma Canada. “That unfortunate reality means patients are eventually left without options. For the increasing number of Canadians living with myeloma, this news provides hope for urgently-needed new treatment options that will improve patient outcomes while providing a good quality of life. The patient community is therefore very excited about the approval of DARZALEX™ as a new, effective treatment option to turn to.”

In [August 2012](#), Janssen Biotech, Inc. and Genmab A/S entered a worldwide agreement, which granted Janssen an exclusive license to develop, manufacture and commercialize DARZALEX™.

About Multiple Myeloma

Multiple myeloma is the most common plasma cell cancer⁹ and is characterized by an excess proliferation of plasma cells.¹⁰ In Canada, there were an estimated 2,700 new cases in 2015 and an estimated 1,400 deaths associated with the disease.¹¹ While some patients with multiple myeloma have no symptoms at all, most patients are diagnosed due to symptoms which can include bone fractures or pain, low blood counts, calcium elevation, and kidney problems.¹²

About DARZALEX™ (daratumumab)

DARZALEX™ is the first CD38-directed monoclonal antibody (mAb) to be approved to treat multiple myeloma. It binds to CD38, a surface protein highly expressed across multiple myeloma cells.¹³ DARZALEX™ induces tumour cell death through cell lysis via multiple immune-mediated mechanisms of action, including complement-dependent cytotoxicity (CDC), antibody-dependent cellular cytotoxicity (ADCC) and antibody-dependent cellular phagocytosis (ADCP).¹⁴ DARZALEX™ has also demonstrated immunomodulatory effects such as increasing CD4+ and CD8+ T-cells counts, which may contribute to clinical response.¹⁵

Infusion-related reactions (IRR) were the most frequently observed treatment-emergent adverse events (TEAEs) and occurred in 48 per cent of patients treated at 16 mg/kg. Almost all IRRs (95 per cent)



occurred at the first infusion and were mainly Grade 1 or 2.¹⁶ Severe infusion-related reactions were observed in 3 per cent of patients, and included bronchospasm, dyspnea, hypoxia and hypertension.¹⁷

Other frequently reported TEAEs (incidence ≥ 20 per cent) were: fatigue, nausea, back pain, pyrexia, cough, anemia, neutropenia, thrombocytopenia, and upper respiratory tract infection.¹⁸ Four per cent of patients discontinued treatment due to TEAEs.¹⁹ The most common (≥ 2 per cent) serious TEAEs were pneumonia (6 per cent), general physical health deterioration, hypercalcemia and pyrexia (each at 3 per cent), cross-match incompatible and herpes zoster (each at 2 per cent).²⁰

More information about DARZALEX™ is available at www.janssen.com/canada.

About the Janssen Pharmaceutical Companies

At the Janssen Pharmaceutical Companies of Johnson & Johnson, we are working to create a world without disease. Transforming lives by finding new and better ways to prevent, intercept, treat and cure disease inspires us. We bring together the best minds and pursue the most promising science. We are Janssen. We collaborate with the world for the health of everyone in it. Learn more at www.janssen.com/canada. Follow us on Twitter at [@JanssenCanada](https://twitter.com/JanssenCanada).

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**Dr. White was not compensated for any media work. He has been a paid consultant to Janssen Inc.*

References:

¹ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

² Kumar, SK et al. Improved survival in multiple myeloma and the impact of novel therapies. *Blood* 2008;111:2516–20.

³ Turesson, I et al. Patterns of improved survival in patients with multiple myeloma in the twenty-first century: a population-based study. *J Clin Oncol* 2010;28: 830–34.

⁴ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

⁵ Health Canada. "Guidance Document: Notice of Compliance with Conditions (NOC/c)," Available at: http://www.hc-sc.gc.ca/dhp-mps/prodpharma/applic-demande/guide-ld/compli-conform/noccc_accd-eng.php. Accessed September 2015.

⁶ Lonial, S et al. Daratumumab monotherapy in patients with treatment-refractory multiple myeloma (SIRIUS): an open-label, randomised, phase 2 trial. *The Lancet*. Volume 387, Issue 10027, 9–15 April 2016, p1551–1560. Available online at: [http://thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)01120-4/fulltext](http://thelancet.com/journals/lancet/article/PIIS0140-6736(15)01120-4/fulltext). Accessed May 2016.

⁷ Lonial, S et al. Daratumumab monotherapy in patients with treatment-refractory multiple myeloma (SIRIUS): an open-label, randomised, phase 2 trial. *The Lancet*. Volume 387, Issue 10027, 9–15 April 2016, p1551–1560. Available online at: [http://thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)01120-4/fulltext](http://thelancet.com/journals/lancet/article/PIIS0140-6736(15)01120-4/fulltext). Accessed May 2016.

⁸ Lokhorst, HM et al. *New England Journal of Medicine*, "Targeting CD38 with Daratumumab Monotherapy in Multiple Myeloma." September 24, 2015 DOI: 10.1056/NEJMoa1506348. Available at: <http://www.nejm.org/doi/full/10.1056/NEJMoa1506348>. Accessed September 2015.

⁹ Canadian Cancer Society. "Types of Multiple Myeloma," Available at: <http://www.cancer.ca/en/cancer-information/cancer-type/multiple-myeloma/multiple-myeloma/types-of-multiple-myeloma/?region=on>. Accessed September 2015.

¹⁰ American Cancer Society. "Multiple Myeloma Overview" <http://www.cancer.net/cancer-types/multiple-myeloma/overview>. Accessed June 2015.

¹¹ Canadian Cancer Society. "Canadian Cancer Statistics 2015." Available at <https://www.cancer.ca/~/media/cancer.ca/CW/cancer%20information/cancer%20101/Canadian%20cancer%20statistics/Canadian-Cancer-Statistics-2015-EN.pdf>. Accessed September 2015.

¹² Canadian Cancer Society. "Signs and Symptoms of Multiple Myeloma," Available at: <http://www.cancer.ca/en/cancer-information/cancer-type/multiple-myeloma/signs-and-symptoms/?region=on>. Accessed September 2015.

¹³ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

¹⁴ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

¹⁵ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

¹⁶ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

¹⁷ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

¹⁸ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

¹⁹ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

²⁰ [DARZALEX™ Product Monograph, Janssen Inc., June 29, 2016]

Cautions Regarding Forward-Looking Statements

This press release contains "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 regarding expectations for DARZALEX™. The reader is cautioned not to rely on these forward-looking statements. These statements are based on current expectations of future events. If underlying assumptions prove inaccurate or known or unknown risks or uncertainties materialize, actual results could vary materially from the expectations and projections of Janssen Inc. and/or Johnson & Johnson. Risks and uncertainties include, but are not limited to: challenges and uncertainties inherent in product research and development, including the uncertainty of continued clinical success and regulatory approvals; uncertainty of commercial success; manufacturing difficulties and delays; competition, including technological advances, new products and patents attained by competitors; challenges to patents; product efficacy or safety concerns resulting in product recalls or regulatory action; changes to applicable laws and regulations, including health care reforms; and trends toward health care cost containment. A further list and descriptions of these risks, uncertainties and other factors can be found in Johnson & Johnson's Annual Report on Form 10-K for the fiscal year ended January 3, 2016, including in Exhibit 99 thereto, and the company's subsequent filings with the Securities and Exchange Commission. Copies of these filings are available online at www.sec.gov, www.jnj.com or on request from Johnson & Johnson. None of the Janssen Pharmaceutical Companies or Johnson & Johnson undertakes to update any forward-looking statement as a result of new information or future events or developments.