**News Release**

**Media Contact:**
Noah Reymond
Mobile: +31 621 38 5718
Email: NReymond@its.jnj.com

**Investor Relations:**
Christopher DelOrefice
Office: +1 732 524 2955

Jennifer McIntyre
Office: +1 732 524 3922

# Janssen's BCMA CAR-T Therapy JNJ-4528 Showed Early, Deep and Durable Responses in Heavily Pretreated Patients with Multiple Myeloma

*Longer-term follow-up data from Phase 1b/2 CARTITUDE-1 study demonstrate 100 percent overall response rate, 86 percent stringent complete response rate at a median of 11.5 months and 86 percent progression-free survival at nine months*[1]

**BEERSE, BELGIUM, May 14, 2020** – The Janssen Pharmaceutical Companies of Johnson & Johnson today announced updated results from the Phase 1b/2 CARTITUDE-1 study (NCT03548207) evaluating the efficacy and safety of JNJ-4528, an investigational B-cell maturation antigen (BCMA)-directed chimeric antigen receptor T cell (CAR-T) therapy in the treatment of patients with relapsed or refractory multiple myeloma.[1] Longer-term follow-up results from the Phase 1b portion of the study (n=29); to be shared in an oral presentation at the American Society of Clinical Oncology (ASCO) Virtual Scientific Program (Abstract #8505), show that all patients responded to treatment and the responses were deep and durable, with 86 percent of patients achieving stringent complete response at a median follow-up of 11.5 months and 86 percent of patients being alive and

progression free at nine months.[1]

The 100 percent overall response rate (ORR) included 97 percent of patients achieving a very good partial response or better and three percent achieving a partial response.[1] Responses were observed among heavily pre-treated patients (n=29) at median administered dose $0.72x10^6$ CAR+ viable T cells/kg.[1] Patients evaluated had received a median of five (range, 3-18) prior treatment regimens; 86 percent were triple-refractory and 28 percent were penta-refractory.[1] The median time to first response was one month (range, 1-3) and 81 percent of evaluable patients (n=16) achieved minimal residual disease (MRD)-negative disease status at $10^{-5}$ or $10^{-6}$ at the time of first suspected complete response.[1]

"The longer-term results for JNJ-4528, as demonstrated through the latest findings from the CARTITUDE-1 study, show the continued treatment effect for heavily pretreated patients who faced a dismal prognosis," said Jesus G Berdeja, M.D., Director of Myeloma Research, Sarah Cannon Research Institute, and principal study investigator. "We're encouraged by not only the relatively high rate of stringent complete responses, but also the progression-free survival seen in these patients."

"Janssen has a rich heritage in bringing transformational therapies to people living with blood cancers," adds Dr Patrick Laroche, M.D., Haematology Therapy Area Lead, Europe, Middle East and Africa (EMEA), Janssen-Cilag. "I am excited to see these latest results support early promising data previously presented and hope that one day JNJ-4528 can offer a viable treatment option for multiple myeloma patients."

The most common adverse events (AEs) observed in CARTITUDE-1 were neutropenia (100 percent) and cytokine release syndrome (CRS, 93 percent).[1] In patients who experienced Grade 3 and above AEs, the most common were neutropenia (100 percent), thrombocytopenia (69 percent) and leukopenia (66 percent). The median time of onset of CRS was seven days (range, 2-12) post-infusion, with a majority of patients experiencing Grade 1-2 CRS and two patients

(7 percent) experiencing Grade 3 or greater CRS.[1] Neurotoxicity consistent with immune effector cell-associated neurotoxicity syndrome (ICANS) was observed in three patients (10 percent), including one patient (3 percent) with Grade 3 or greater toxicity.[1] Three deaths were reported during the Phase 1b study: one due to CRS, one due to acute myeloid leukaemia (not treatment-related) and one due to progressive disease.[1]

"These recently updated data from the CARTITUDE-1 study suggest a durable response and tolerable safety profile for JNJ-4528," said Sen Zhuang, M.D., Ph.D., Vice President, Oncology Clinical Development, Janssen Research & Development, LLC. "We continue to advance the investigation of this novel CAR-T treatment with the goal of bringing a differentiated immunotherapy to patients with multiple myeloma, many of whom have exhausted all potential prior treatment options."

**About CARTITUDE-1**

CARTITUDE-1 (NCT03548207) is an ongoing Phase 1b/2, open-label, multicentre study evaluating the safety and efficacy of JNJ-4528 in adults with relapsed or refractory multiple myeloma, 97 percent of whom were refractory to the last line of treatment; 86 percent of whom were triple-class refractory meaning their cancer did not, or no longer responds to an immunomodulatory agent (IMiD), a proteasome inhibitor (PI) and an anti-CD38 antibody.[1,2]

The primary objective of the Phase 1b portion of the study was to characterise the safety and confirm the dose of JNJ-4528, informed by the first-in-human study with LCAR-B38M* CAR-T cells (LEGEND-2).[2] Based on the safety profile observed in this portion of the study, outpatient dosing will be evaluated in additional CARTITUDE studies.[1] The Phase 2 portion of the study will evaluate the efficacy of JNJ-4528 with overall response as the primary endpoint.[2]

## About JNJ-4528 (LCAR-B38M*)

JNJ-4528 (LCAR-B38M) is an investigational chimeric antigen receptor T cell (CAR-T) therapy for the treatment of patients with relapsed or refractory multiple myeloma. The design comprises a structurally differentiated CAR-T with two BCMA-targeting single domain antibodies.[1] CAR-T cells are an innovative approach to eradicating cancer cells by harnessing the power of a patient's own immune system.[3] BCMA is a protein that is highly expressed on myeloma cells.[4]

In December 2017, Janssen entered into an exclusive worldwide license and collaboration agreement with Legend Biotech to develop and commercialise JNJ-4528 (LCAR-B38M).[5] In May 2018, Janssen initiated the Phase 1b/2 CARTITUDE-1 trial (NCT03548207) to evaluate the efficacy and safety of JNJ-4528 in adults with relapsed or refractory multiple myeloma, informed by the LEGEND-2 study results.[2]

In April 2019, JNJ-4528 was granted PRIME (PRIority MEdicines) designation by the European Medicines Agency (EMA).[6] PRIME offers enhanced interaction and early dialogue to optimise drug development plans and speed up evaluation of cutting-edge, scientific advances that target a high unmet medical need.[7] In February 2020, the European Commission granted orphan designation for JNJ-4528.[8]

## About Multiple Myeloma

Multiple myeloma (MM) is an incurable blood cancer that starts in the bone marrow and is characterised by an excessive proliferation of plasma cells.[9] In Europe, more than 48,200 people were diagnosed with MM in 2018, and more than 30,800 patients died.[10] Around 50 percent of newly diagnosed patients do not reach five-year survival,[11,12] and almost 29 percent of patients with multiple myeloma will die within one year of diagnosis.[13]

Although treatment may result in remission, unfortunately, patients will most

*LCAR-B38M identifies the investigational product in China, sponsored by Janssen's development partner, Legend Biotech.

likely relapse as there is currently no cure.[14] Refractory MM is when a patient's disease progresses within 60 days of their last therapy.[15] Relapsed cancer is when the disease has returned after a period of initial, partial or complete remission.[15] While some patients with MM have no symptoms at all, others are diagnosed due to symptoms that can include bone problems, low blood counts, calcium elevation, kidney problems or infections.[16] Patients who relapse after treatment with standard therapies, including protease inhibitors and immunomodulatory agents, have poor prognoses and require new therapies for continued disease control.[17]

**About the Janssen Pharmaceutical Companies of Johnson & Johnson**

At Janssen, we're creating a future where disease is a thing of the past. We're the Pharmaceutical Companies of Johnson & Johnson, working tirelessly to make that future a reality for patients everywhere by fighting sickness with science, improving access with ingenuity, and healing hopelessness with heart. We focus on areas of medicine where we can make the biggest difference: Cardiovascular & Metabolism, Immunology, Infectious Diseases & Vaccines, Neuroscience, Oncology, and Pulmonary Hypertension. Learn more at www.janssen.com/emea. Follow us at www.twitter.com/janssenEMEA for our latest news.

Janssen-Cilag International NV and Janssen Research and Development, LLC are part of the Janssen Pharmaceutical Companies of Johnson & Johnson.

# # #

**Cautions Concerning Forward-Looking Statements**

*This press release contains "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 regarding of LCAR-B38M and JNJ-68284528. 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 Pharmaceutical Companies and/or Johnson & Johnson. Risks and uncertainties include, but are not limited to: uncertainty of regulatory approvals; uncertainty of commercial success; challenges to patents; competition, including technological advances, new products and patents attained by competitors; manufacturing difficulties and delays; product efficacy or safety concerns resulting in product recalls or regulatory action; changes to applicable laws and regulations, including global health care reforms; changes in behaviour and spending patterns of purchasers of health care products and services; 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 December 29, 2019, including in the sections captioned "Cautionary Note Regarding Forward-Looking Statements" and "Item 1A. Risk Factors," and in the company's most recently filed Quarterly Report on Form 10-Q, 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. Neither Janssen Pharmaceutical Companies nor Johnson & Johnson undertakes to update any forward-looking statement as a result of new information or future events or developments.*

# # #

[1] Berdeja, J. et. al. Update of CARTITUDE-1: A phase 1b/2 study of JNJ-4528, a B-cell maturation antigen (BCMA)-directed CAR-T cell therapy, in relapsed/refractory multiple myeloma. Abstract #8505 [Oral]. To be presented at American Society of Clinical Oncology Virtual Scientific Program 2020.

[2] ClinicalTrials.gov. A Study of JNJ-68284528, a Chimeric Antigen Receptor T Cell (CAR-T) Therapy Directed Against B-Cell Maturation Antigen (BCMA) in Participants With Relapsed or Refractory Multiple Myeloma (CARTITUDE-1). Available at: https://clinicaltrials.gov/ct2/show/NCT03548207 Last accessed: May 2020.

[3] Hay A, Cheung M. CAR T-cells: costs, comparisons, and commentary. *J Med Econ*. 2019: 22(7): 613-615, DOI: 10.1080/13696998.2019.1582059

[4] Cho SF, Anderson KC, Tai YT. Targeting B-cell maturation antigen (BCMA) in multiple myeloma: potential uses of BCMA-based immunotherapy. *Front Immunol*. 2018;9:18-21.

[5] JnJ.com Janssen Enters Worldwide Collaboration and License Agreement with Chinese Company Legend Biotech to Develop Investigational CAR-T Anti-Cancer Therapy. Available at: https://www.jnj.com/media-center/press-releases/janssen-enters-worldwide-collaboration-and-license-agreement-with-chinese-company-legend-biotech-to-develop-investigational-car-t-anti-cancer-therapy Last accessed: May 2020.

[6] JnJ.com. Janssen Announces Investigational CAR-T Therapy JNJ-68284528 Granted PRIME Designation by the European Medicines Agency. Available at: https://www.jnj.com/janssen-announces-investigational-car-t-therapy-jnj-68284528-granted-prime-designation-by-the-european-medicines-agency Last accessed May 2020.

[7] European Medicines Agency. PRIME Factsheet. Available at: https://www.ema.europa.eu/en/human-regulatory/research-development/prime-priority-medicines Last accessed: May 2020.

[8] European Medicines Agency (EMA). Public summary of opinion on orphan designation. Available at: https://www.ema.europa.eu/en/documents/orphan-designation/eu/3/20/2252-public-summary-positive-opinion-orphan-designation-autologous-human-t-cells-genetically_en.pdf. Last accessed: May 2020.

[9] American Society of Clinical Oncology. Multiple myeloma: introduction. Available at: https://www.cancer.net/cancer-types/multiple-myeloma/introduction Last accessed: May 2020.

[10] GLOBOCAN 2018. Cancer Today Population Factsheets: Europe Region. Available at: https://gco.iarc.fr/today/data/factsheets/populations/908-europe-fact-sheets.pdf. Last accessed: May 2020.

[11] American Society of Clinical Oncology. Multiple Myeloma: Statistics. Available at: https://www.cancer.net/cancer-types/multiple-myeloma/statistics. Last accessed: May 2020.

[12] Cancer Research UK. Myeloma Statistics. Available at: https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/myeloma#heading-Two Last accessed: May 2020.

[13] Costa LJ, Gonsalves WI, Kumar SK. Early mortality in multiple myeloma. *Leukemia*. 2015;29:16168.

[14] Abdi J, Chen G, Chang H, et al. Drug resistance in multiple myeloma: latest findings and new concepts on molecular mechanisms. *Oncotarget*. 2013;4:2186–2207.

[15] Richardson P, Mitsiades C, Schlossman R, et al. The treatment of relapsed and refractory multiple myeloma. *Hematology Am Soc Hematol Educ Program*. 2007:317-23.

[16] American Cancer Society. Multiple Myeloma: Symptoms and Signs. Available at: https://www.cancer.net/cancer-types/multiple-myeloma/symptoms-and-signs. Last accessed: May 2020.

[17] Kumar SK, Lee JH, Lahuerta JJ, et al., Risk of progression and survival in multiple myeloma relapsing after therapy with IMiDs and bortezomib: a multicenter international myeloma working group study. *Leukemia*. 2012;26:149-57.