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News Release

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Investigational targeted oral peptide JNJ-2113 demonstrated positive results in moderate-to-severe plaque psoriasis in Phase 2b study published in New England Journal of Medicine

Data from FRONTIER 1, a Phase 2b clinical trial, show JNJ-2113, the first and only investigational targeted oral peptide in development that selectively blocks the IL-23 receptor, achieved the primary and all secondary endpoints including PASI[a] 100 and IGA[b] 0 responses of 40 percent and 45 percent, respectively[1]

BEERSE, BELGIUM, 7 February 2024 – The Janssen Pharmaceutical Companies of Johnson & Johnson today announced publication in the *New England Journal of Medicine (NEJM)* of the Phase 2b FRONTIER 1 trial results for JNJ-2113.[1] JNJ-2113 is the first and only investigational targeted oral peptide inhibitor designed to block the IL-23 receptor.[1,2] IL-23 plays a critical role in pathogenic T-cell activation in moderate-to-severe plaque psoriasis and underpins the inflammatory response in psoriasis and other dermatological and gastroenterological IL-23-mediated diseases.[3,4] The FRONTIER 1 clinical trial achieved the primary and all secondary

efficacy endpoints evaluating JNJ-2113 in adults with moderate-to-severe plaque psoriasis.[1]

The primary endpoint of the study was a reduction from baseline of at least 75 percent in the Psoriasis Area and Severity Index score (PASI 75 response) at Week 16. Study results demonstrated a significant dose-response on PASI 75 at Week 16 for adult patients who received JNJ-2113 compared to patients treated with placebo, with 79 percent of patients achieving a PASI 75 response in the highest dose group tested of 100 mg twice daily. The data were consistent with the secondary endpoints, with patients who received the highest dose of JNJ-2113 achieving PASI 100 of 40 percent and IGA 0 (clear skin) of 45 percent.[1]

"The science behind advanced treatments for immune-mediated inflammatory diseases like psoriasis has advanced over the last few decades and patients desire treatment options that combine standard of care efficacy, an acceptable safety profile and flexible routes of administration," said Robert Bissonnette, M.D., Chief Executive Officer and Medical Director at Innovaderm Research, Montreal, Canada[c]. "The Phase 2b FRONTIER 1 data, as reported in NEJM, are very encouraging for the ongoing clinical development program and offer a reason to look forward to the continued research of investigational JNJ-2113 as an oral therapy that may offer an attractive and convenient treatment option for patients."

Improvements were also consistent across Patient Reported Outcomes (PROs) through Week 16.[1] Patients who were treated with JNJ-2113 demonstrated greater improvements from baseline in the severity of their disease-related symptoms by Week 16, as assessed by the Psoriasis Symptoms and Signs Diary (PSSD)[d].[1] Among patients with baseline Dermatology Life Quality Index (DLQI)[e] scores greater than 1, higher proportions of JNJ-2113-treated patients compared with placebo-treated patients achieved DLQI scores of 0/1 (no impact on quality of life) at Week 16.[1]

In this phase 2 study, rates of adverse events (AEs) were generally similar between the JNJ-2113 and placebo groups.[1] The most common (≥5 percent of any treatment

group) AEs were COVID-19 infection, nasopharyngitis, upper respiratory tract infection, diarrhoea, headache, and cough. No relationship between the JNJ-2113 dose group and the occurrence of AEs or serious AEs was observed.[1]

Treatment with JNJ-2113 was also associated with lower serum levels of human beta-defensin 2 (hBD-2), relative to placebo, as early as Week 4.[1] The lowest hBD-2 level was observed with the 100 mg twice-daily dose, beginning by Week 8.[1] Lower levels of hBD-2 have previously been found to correlate with clinical response and indicate inhibition of the IL-17/IL-23 axis.[5,6,7]

"The impacts of living with moderate-to-severe plaque psoriasis are felt across all aspects of life and many patients do not seek advanced treatments because they have concerns with injectables and prefer an oral therapeutic option," said Lloyd Miller, M.D., Ph.D., Vice President, Immunodermatology Disease Area Leader, Johnson & Johnson. "We are encouraged by the study findings published in *NEJM*, including consistency across clinician and patient-reported outcomes and objective biomarkers. If approved, JNJ-2113 has the potential to improve both clinical and quality of life outcomes."

"Approximately twelve million people in Europe live with psoriasis, a debilitating condition that can have a significant impact across all aspects of a person's life, including their relationships and emotional wellbeing," said Dr Andreas Pinter, Director Clinical Research, Goethe-University, Frankfurt am Main, Germany. "These data from a Phase 2 study provide us insight on JNJ-2113, a targeted oral peptide inhibitor of the IL-23 receptor, and demonstrate the potential it may offer for a shift in the management of moderate-to-severe psoriasis."

The pivotal Phase 3 ICONIC clinical development programme of JNJ-2113 in adult and adolescent patients with moderate-to-severe plaque psoriasis was initiated with two studies in Q4 2023 – ICONIC-LEAD and ICONIC-TOTAL – pursuant to the license and collaboration agreement between Protagonist Therapeutics, Inc. and Janssen Biotech, Inc.[8,9,10] ICONIC-LEAD is a randomised controlled trial (RCT) to evaluate the

safety and efficacy of JNJ-2113 compared with placebo in participants with moderate-to-severe plaque psoriasis, with the higher efficacy bar of PASI 90 and IGA score of 0 or 1 with at least a 2-grade improvement as co-primary endpoints.[9] ICONIC-TOTAL is a RCT to evaluate the efficacy and safety of JNJ-2113 compared with placebo for the treatment of psoriasis in participants with at least moderate severity affecting special areas (e.g., scalp, genital, and/or palms of the hands and the soles of the feet) with overall IGA score of 0 or 1 with at least a 2-grade improvement as the primary endpoint.[10] Other Phase 3 studies in the development programme are expected to begin in Q1 2024, including ICONIC-ADVANCE 1 and ICONIC-ADVANCE 2, which will evaluate the safety and efficacy of JNJ-2113 compared with both placebo and deucravacitinib.[11,12]

The findings from the FRONTIER 1 clinical trial suggest the potential of JNJ-2113 across the spectrum of additional IL-23-mediated diseases.[2,13] The Company has initiated the Phase 2b ANTHEM-UC study to evaluate the safety and effectiveness of JNJ-2113 compared with placebo in participants with moderately to severely active ulcerative colitis.[13]

Editor's Notes:

a. The PASI score grades the amount of surface area on each body region that is covered by psoriasis plaques and the severity of plaque redness, thickness, and scaliness.[14]
b. The IGA is a five-point scale with a severity ranging from 0 to 4, where 0 indicates clear, 2 is mild, 3 is moderate, and 4 indicates severe disease.[1]
c. Dr Robert Bissonnette is a paid consultant for Johnson & Johnson. He has not been compensated for any media work.
d. The PSSD is a patient-reported instrument that assesses severity of six symptoms (itch, skin tightness, burning, stinging, and pain) and five signs (dryness, cracking, scaling, shedding/flaking, redness, and bleeding) of psoriasis. An improvement (reduction) of 40 points or more is considered clinically meaningful.[1]

e. The DLQI measures impact of any skin disease on daily life, and assesses symptoms, feelings, daily activities, leisure, work/school, relationships/sex, and treatment effects.[15]

About FRONTIER 1 (EudraCT 2021-003700-41)

The FRONTIER 1 Phase 2b trial (EudraCT 2021-003700-41) is a randomised, multicentre, double-blind, placebo-controlled clinical trial that evaluated three once-daily dosages and two twice-daily dosages of JNJ-2113 taken orally.[1,16] It was designed to assess the efficacy and safety of JNJ-2113 in patients with moderate-to-severe plaque psoriasis.[1] A total of 255 participants were randomised into six treatment groups (placebo [n=43], 25 mg daily [n=43], 25 mg twice daily [n=41], 50 mg daily [n=43], 100 mg daily [n=43], and 100 mg twice daily [n=42]).[1] The total duration of the trial was up to 24 weeks, which included a four-week screening period, a 16-week treatment period and a four-week safety follow-up period.[1]

The primary endpoint of the clinical trial was the proportion of patients achieving PASI 75 at 16 weeks.[1] Secondary endpoints at Week 16 included change from baseline in PASI total score, proportion of participants achieving PASI 90 and PASI 100 score, proportion of participants achieving an Investigator's Global Assessment (IGA) score of cleared (0) or minimal (1), change from baseline in Body Surface Area (BSA), change from baseline in Psoriasis Symptoms and Signs Diary (PSSD) symptoms scores, proportion of participants achieving PSSD symptoms score=0 among participants with a baseline symptom score, ≥1 proportion of participants achieving a Dermatology Life Quality Index (DLQI) of 0 or 1 among participants with baseline DLQI Score >1, change from baseline in Patient-Reported Outcomes Measurement Information System (PROMIS-29) domain score, proportion of participants who achieve ≥5-point improvement from baseline in PROMIS-29 domain score, and number of participants with adverse events and serious adverse events up to 24 weeks.[16]

About Plaque Psoriasis

Psoriasis is an immune-mediated disease resulting in overproduction of skin cells, which causes inflamed, scaly plaques that may be itchy or painful.[17] It is estimated that more than 125 million people worldwide live with the disease.[18] Nearly one-quarter of all people with psoriasis have cases that are considered moderate-to-severe.[18] Living with psoriasis can be a challenge and impact life beyond a person's physical health, including emotional health, relationships, and handling the stressors of life.[19]

About JNJ-77242113 (JNJ-2113)

JNJ-2113 was jointly discovered and is being developed pursuant to the license and collaboration agreement between Protagonist Therapeutics and Johnson & Johnson. Johnson & Johnson retains exclusive worldwide rights to develop JNJ-2113 in Phase 2 clinical trials and beyond, and to commercialize compounds derived from the research conducted pursuant to the agreement against a broad range of indications.[20,21,22]

Investigational JNJ-2113 is the first targeted oral peptide designed to block the IL-23 receptor,[2] which underpins the inflammatory response in moderate-to-severe plaque psoriasis and other IL-23-mediated diseases.[3,4] JNJ-2113 binds to the IL-23 receptor with single-digit picomolar affinity and demonstrated potent, selective inhibition of IL-23 signaling in human T cells.[23] The license and collaboration agreement established between Protagonist and Janssen Biotech, Inc., in 2017 enabled the companies to work together to discover and develop next-generation compounds that ultimately led to JNJ-2113.[24]

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, Retina, Immunology, Neuroscience, Oncology, and Pulmonary Hypertension.

Learn more at www.janssen.com/EMEA. Follow us at www.twitter.com/JanssenEMEA.

Janssen Research & Development, LLC and Janssen Biotech, Inc. are Johnson & Johnson Companies.

Cautions Concerning Forward-Looking Statements

This press release contains "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995 regarding JNJ-2113. 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 Research & Development, LLC 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 clinical success and of obtaining 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 in behavior and spending patterns of purchasers of health care products and services; changes to applicable laws and regulations, including global 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 1, 2023, including in the sections captioned "Cautionary Note Regarding Forward-Looking Statements" and "Item 1A. Risk Factors," and in Johnson & Johnson's subsequent Quarterly Reports on Form 10-Q and other 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 Research & Development, LLC nor Johnson & Johnson undertakes to update

any forward-looking statement as a result of new information or future events or developments.

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