



News Release

Takeda Announces Positive Topline Results from Phase 2b Study Evaluating TAK-279, a highly selective oral TYK2 Inhibitor, for the Treatment of Active Psoriatic Arthritis

- *Topline Results for TAK-279 Show that a Significantly Greater Proportion of Psoriatic Arthritis Patients Achieved at Least an ACR20 Response Compared to Placebo at Week 12¹*
- *Based on the Positive Results, Takeda Intends to Initiate a Phase 3 Study of TAK-279 in Psoriatic Arthritis*
- *Full Clinical Results Will be Presented at an Upcoming Medical Meeting*

OSAKA, Japan and CAMBRIDGE, Massachusetts, September 11, 2023 – Takeda

([TSE:4502/NYSE:TAK](#)) today announced positive topline results from its randomized, double-blind, placebo-controlled, multiple-dose Phase 2b trial evaluating TAK-279, an investigational oral allosteric tyrosine kinase 2 (TYK2) inhibitor with next generation selectivity, in people with active psoriatic arthritis. The study met its primary endpoint with a greater proportion of patients treated once-daily with TAK-279 achieving at least a 20 percent improvement in signs and symptoms of disease (American College of Rheumatology 20 response) at week 12 compared to placebo, supporting its potential as a highly selective oral option for patients with psoriatic arthritis.¹ The safety and tolerability profile of TAK-279 in the Phase 2b trial was consistent with previous TAK-279 clinical trials.¹ Analysis of the results are ongoing, and Takeda plans to present clinical results at an upcoming medical meeting.

“Psoriatic arthritis can impose a profound burden on patients and there is an unmet need for therapeutic options that combine efficacy, safety, tolerability, and convenience. These Phase 2b results highlight the potential of TAK-279, a highly selective, oral TYK2 inhibitor, to improve clinical outcomes for people living with psoriatic arthritis,” said Andy Plump, President R&D, Takeda. “Our hypothesis is that high selectivity, as seen with TAK-279, can enable high levels of TYK2 inhibition, while potentially avoiding toxicities associated with JAK inhibition. We look forward to sharing the results soon and exploring the potential of TAK-279 in further clinical studies.”

Psoriatic arthritis is a chronic immune-mediated inflammatory disease, characterized by inflammation causing joint pain, stiffness and swelling,² that affects approximately 10 million people globally.³ Chronic inflammation seen in psoriatic arthritis may result in irreversible joint damage if not managed appropriately,² and progressive disease is associated with substantial physical disability⁴ and significant mental health disorders, such as anxiety and depression.⁵

Based on the Phase 2b results, Takeda intends to initiate a Phase 3 study of TAK-279 in psoriatic arthritis. Takeda will initiate a Phase 3 study of TAK-279 in plaque psoriasis in FY2023 and plans to evaluate TAK-279 in systemic lupus erythematosus, Crohn's disease, ulcerative colitis, and additional immune-mediated inflammatory diseases.

Results from the Phase 2b study have no impact on the full year consolidated reported forecast for the fiscal year ending March 31, 2024 (Fiscal Year 2023).

About TAK-279

TAK-279 is a highly selective, oral allosteric tyrosine kinase 2 (TYK2) inhibitor in late-stage development,⁶ with approximately 1.3 million-fold greater selectivity for TYK2 as compared with JAK1⁷. TAK-279 has potential to become an important treatment option in multiple immune-mediated inflammatory diseases. In Phase 1 studies, TAK-279 showed a good tolerability profile, a dose-dependent trend in exploratory clinical activity and a pharmacokinetic profile allowing for once-daily solid oral dosing.⁸ In a Phase 2b study in patients with moderate-to-severe psoriasis, a statistically significant greater proportion of patients receiving TAK-279 achieved Psoriasis Area and Severity Index (PASI) 75, 90 and 100 in the 5mg, 15mg and 30mg dosing arms compared to placebo at 12 weeks.⁶ TAK-279 is an investigational compound that has not been approved for use by any regulatory authority.

About the TAK-279 Phase 2b Study in Psoriatic Arthritis

The Phase 2b study ([NCT05153148](#)) is a randomized, multicenter, double-blind, placebo-controlled multiple-dosed trial designed to evaluate the efficacy, safety and tolerability of TAK-279 in people with active psoriatic arthritis.⁶ 290 patients were randomly assigned (1:1:1:1 ratio) to receive one of three doses of TAK-279 or placebo once daily for 12 weeks with a 4 week safety follow up period. The primary endpoint was the proportion of patients achieving at least an ACR20 response at week 12.

The ACR20 is a composite measure defined as both improvement of 20% in the number of tender and number of swollen joints, and a 20% improvement in three of the following five criteria: patient global assessment of psoriatic arthritis, physician global assessment of psoriatic arthritis, patient pain scale, disability history questionnaire and an acute phase reactant.⁹

About Tyrosine Kinase 2 (TYK2) Inhibitors

Tyrosine kinase 2 (TYK2) is an intracellular enzyme that belongs to the Janus family of protein tyrosine kinases.¹⁰ TYK2 is a member of the Janus kinase -signal transducer and activator of transcription (JAK-STAT) signaling pathway, which mediates signaling downstream of key immune cytokine receptors.¹⁰ Inflammatory cytokine signaling is associated with several immune-mediated inflammatory diseases, including psoriasis, psoriatic arthritis, systemic lupus erythematosus, and inflammatory bowel disease.¹¹ Selective allosteric inhibition of TYK2 may be a promising therapeutic approach to target immune-mediated inflammation while potentially decreasing the risk of JAK-related toxicity.¹²

About Takeda

Takeda is focused on creating better health for people and a brighter future for the world. We aim to discover

and deliver life-transforming treatments in our core therapeutic and business areas, including gastrointestinal and inflammation, rare diseases, plasma-derived therapies, oncology, neuroscience and vaccines. Together with our partners, we aim to improve the patient experience and advance a new frontier of treatment options through our dynamic and diverse pipeline. As a leading values-based, R&D-driven biopharmaceutical company headquartered in Japan, we are guided by our commitment to patients, our people and the planet. Our employees in approximately 80 countries and regions are driven by our purpose and are grounded in the values that have defined us for more than two centuries. For more information, visit www.takeda.com.

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The companies in which Takeda directly and indirectly owns investments are separate entities. In this press release, “Takeda” is sometimes used for convenience where references are made to Takeda and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies.

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This press release and any materials distributed in connection with this press release may contain forward-looking statements, beliefs or opinions regarding Takeda’s future business, future position and results of

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¹ Takeda Pharmaceuticals. Data on File.

² American College of Rheumatology. Psoriatic Arthritis. Available at: <https://rheumatology.org/patients/psoriatic-arthritis>. Last accessed: August 2023.

³ Scotti L, Franchi M, Marchesoni A, Corrao G. Prevalence and incidence of psoriatic arthritis: A systematic review and meta-analysis. *Semin Arthritis Rheum*. 2018 Aug;48(1):28-34. doi:10.1016/j.semarthrit.2018.01.003.

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- ⁴ Mease P, Strand V, Gladman D. Functional impairment measurement in psoriatic arthritis: Importance and challenges. *In* *Seminars in arthritis and rheumatism* 2018 Dec 1 (Vol. 48, No. 3, pp. 436-448). WB Saunders.
 - ⁵ Zhao SS, Miller N, Harrison N, Duffield SJ, Dey M, Goodson NJ. Systematic review of mental health comorbidities in psoriatic arthritis. *Clinical Rheumatology*. 2020 Jan;39:217-25.
 - ⁶ Armstrong A, Lynde C, Forman S, et al. Efficacy and safety results from the randomized double-blind, placebo-controlled phase 2b trial of TYK2 inhibitor NDI-034858 in moderate-to-severe psoriasis. Presented March 17-21, 2023, New Orleans, Louisiana at the 2023 American Academy of Dermatology Annual Meeting.
 - ⁷ Leit S, J, Greenwood Carriero S, et al. Discovery of a potent and selective tyrosine kinase two inhibitor: TAK-279. *J Medicinal Chemistry*.2023;66(15):10473-10496. doi.org/10.1021/acs.jmedchem.3c00600.
 - ⁸ Gangolli EA, Carreiro S, Leit S, et al. Characterization of pharmacokinetics, pharmacodynamics, tolerability and clinical activity in Phase 1 studies of the novel allosteric tyrosine kinase 2 (TYK2) inhibitor NDI-034858. Presented May 18-21, 2022, Portland, OR at the 2022 Society for Investigative Dermatology Annual Meeting.
 - ⁹ ClinicalTrials.gov. A Study to Evaluate the Efficacy, Safety, and Tolerability of NDI-034858 in Subjects With Active Psoriatic Arthritis. Available at: <https://classic.clinicaltrials.gov/ct2/show/NCT05153148>. Last accessed: August 2023
 - ¹⁰ Muromoto R, Oritani K, Matsuda T. Current understanding of the role of tyrosine kinase 2 signaling in immune responses. *World J Biol Chem*. 2022;13(1):1–14. doi:10.4331/wjbc.v13.i1.1.
 - ¹¹ Gonciarz M, Pawlak-Buś K, Leszczyński P, et al. TYK2 as a therapeutic target in the treatment of autoimmune and inflammatory diseases. *Immunotherapy*. 2021;13(13):1135-1150. doi:10.2217/imt-2021-0096.
 - ¹² Krueger JG, McInnes IB, Blauvelt A. Tyrosine kinase 2 and Janus kinase–signal transducer and activator of transcription signaling and inhibition in plaque psoriasis. *J Am Acad Dermatol*. 2022;86(1):148-157. doi:10.1016/j.jaad.2021.06.869.