Life is Rare

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JCR Pharmaceuticals Co., Ltd.

JCR Pharmaceuticals' Research Presentations at the 18th International Symposium on MPS and Related Lysosomal Diseases 2026 Showcase Data from Its Investigational Treatments for Lysosomal Storage Disorders

Hyogo, Japan – June 8, 2026 – JCR Pharmaceuticals Co., Ltd. (TSE 4552; "JCR"), a global specialty biopharmaceutical company dedicated to developing therapies for rare and genetic diseases, announced today that it presented new clinical data in a poster session at the 18th International Symposium on MPS and Related Lysosomal Diseases, which was held June 4-7, 2026, in Florence, Italy.

"Due to the protective blood-brain barrier, lysosomal storage disorders historically have been challenging to treat due to the inability to deliver a therapy into the central nervous system. With our J-Brain Cargo® platform technology, we have the potential to address the progressive neurological symptoms associated with these rare and life-limiting diseases, many of which have inadequate treatment options or no approved therapies available," said Hiroyuki Sonoda, Ph.D., President and Chief Scientific Officer of JCR Pharmaceuticals. "The data presented at this symposium demonstrate the safety and efficacy evidence of JR-171 (lepunafusp alfa) in people with mucopolysaccharidosis type I (MPS I) and highlight its potential. We look forward to sharing additional data from our J-Brain Cargo® platform technology as they are available. We wish to thank all of the patients who have participated in our clinical programs and their families, clinical investigators, and other partners who continue to support our work."

New Clinical Data Presentation

Three-Year safety and pharmacodynamics of lepunafusp alfa (JR-171) in patients with mucopolysaccharidosis type I (MPS-I): Results from a phase I/II trial and extension study (Presentation Number: 63)

Lead Author: Paul Harmatz, M.D. (UCSF Benioff Children's Hospital, Oakland, CA)

Researchers reported on three years of data describing safety and pharmacodynamics of lepunafusp alfa (JR-171) in patients with mucopolysaccharidosis type I (MPS I) who were treated in a Phase I/II trial plus a three-year extension study (NCT04227600 and NCT04453085). Patients with MPS I were randomized to weekly intravenous lepunafusp alfa at a "Low" (2.0 mg/kg; n=6) or a "High" (4.0 mg/kg; n=8) dose and followed for three years. Enrollment was open to all MPS I phenotypes (Hurler [n=7], Hurler-Scheie [n=5], Scheie [n=2]); one Low-dose Hurler patient did not continue in the extension study.

Both the High- and Low-dose cohorts demonstrated a favorable safety and tolerability profile, with compliance exceeding 90% in both groups. Overall, six patients experienced serious adverse events (SAEs) [5/8 in the High dose group, 1/5 in the Low dose group]. Of the 8 serious treatment-emergent adverse events (TEAEs), none were attributed to lepunafusp alfa. Adverse events of special interest — specifically anaphylaxis or infusion-associated reactions — were uncommon,

occurring in fewer than 5% of participants across both dose groups.

By Week 12, cerebrospinal fluid-heparan sulfate (CSF-HS) decreased in all patients. In the High dose group, CSF-HS decreases remained stable during the three-year study period in most patients; partial rebound was observed in one patient. In the Low dose group, two patients, both with Hurler syndrome, had a subsequent rebound in HS levels. Rebound did not correlate with presence/absence of antibodies.

The somatic symptoms (including serum HS levels, and liver and spleen volume) remained stable, or improved, in patients in both doses who received previous laronidase and decreased in the treatment-naïve patient.

With three years of follow-up, researchers concluded that weekly lepunafusp alfa is safe and well tolerated in a broad spectrum of patients with MPS I, with no serious TEAEs attributable to the study drug. Pharmacodynamic response of CSF-HS demonstrates that lepunafusp alfa crosses the blood-brain barrier (BBB), with a trend toward greater reduction in CSF-HS in the High dose cohort (4mg/kg). The long-term safety and clinical efficacy warrants evaluation in a larger clinical trial.

Encore Clinical Data Presentations

The following encore presentations provide additional evidence and context for the use of JR-141 (pabinafusp alfa) in the treatment of MPS II and were shared at the 22nd Annual WORLD*Symposium*™ 2026 (February 2-6, 2026).

Sustained cognitive and adaptive behavior outcomes of long-term treatment with pabinafusp alfa in patients with severe or attenuated mucopolysaccharidosis type II
(Presentation Number: 61)
Lead Author: Roberto Giugliani, M.D., Ph.D. (Federal University of Rio Grande do Sul, Brazil)

In a longitudinal, pooled, *post hoc* analysis of patients with MPS II receiving pabinafusp alfa across five open-label trials with up to five years of follow-up, researchers reported on sustained cognitive and adaptive behavior outcomes of long-term treatment with pabinafusp alfa in patients with severe or attenuated MPS II. Researchers concluded that long-term treatment with pabinafusp alfa was well tolerated and associated with stabilization or continued skill acquisition in many patients with severe or attenuated MPS II, suggesting that, with timely initiation prior to the onset of irreversible neurodegeneration, treatment with pabinafusp alfa may provide a benefit to patients with MPS II.

Long-term somatic efficacy of pabinafusp alfa across a broad spectrum of age groups and phenotypes in patients with mucopolysaccharidosis type II
(Presentation Number: 62)
Lead Author: Ana Maria Martins, M.D., Ph.D. (Federal University of São Paulo)

In a longitudinal, pooled, *post hoc* analysis of patients with MPS II receiving pabinafusp alfa in open-label trials with up to five years of follow-up, researchers reported on the somatic effects of pabinafusp alfa in a heterogenous population of patients with MPS II who initiated treatment at different ages. Researchers concluded that long-term treatment with pabinafusp alfa was well tolerated and provided positive somatic effects to a broad spectrum of severe and attenuated patients with MPS II.

About the International Symposium on MPS and Related Lysosomal Diseases

The International Symposium on MPS and Related Lysosomal Diseases brings together healthcare professionals, researchers, and industry leaders to accelerate progress in mucopolysaccharidoses (MPS) and related lysosomal storage disorders through collaborative innovation. We unite diverse perspectives to advance early diagnosis through cutting-edge technologies, develop revolutionary therapies, and ensure equitable global access to care. Our mission is to foster the next generation of rare disease advocates and professionals while creating sustainable partnerships that transform scientific breakthroughs into real-world improvements in patient outcomes worldwide. For more information, please visit https://mps2026.com/.

About the J-Brain Cargo® Platform Technology

JCR Pharmaceuticals has developed a proprietary blood-brain barrier (BBB)-penetrating technology, J-Brain Cargo®, to bring biotherapeutics into the central nervous system (CNS). The first drug developed based on this technology is IZCARGO™ (INN: pabinafusp alfa), which is approved in Japan for the treatment of a lysosomal storage disorder (LSD). With J-Brain Cargo®, JCR seeks to address the unresolved clinical challenges of LSDs by delivering the enzyme to both the body and the brain.

About Mucopolysaccharidosis Type I (Hurler, Hurler-Scheie, Scheie Syndrome)

Mucopolysaccharidosis type I (MPS I) is an autosomal recessive lysosomal storage disorder (LSD) caused by a deficiency of α-L-iduronidase, an enzyme that breaks down glycosaminoglycans (mucopolysaccharides) in the body. The current worldwide prevalence of MPS I is estimated to be approximately 3,000-4,000 (according to JCR internal research). MPS I gives rise to a wide range of somatic and neurological symptoms. A major limitation of current enzyme replacement therapy (ERT) is that it does not address central nervous system (CNS) symptoms because of the enzyme's inability cross the blood-brain barrier (BBB). MPS I is the only LSD in which hematopoietic stem cell transplantation (HSCT) is part of the standard of case for the severe form of the disease. Significant unmet medical need persists in all forms of MPS I.

About JR-171

JR-171 (lepunafusp alfa) is a recombinant fusion protein of an antibody against the human transferrin receptor and α-L-iduronidase, the enzyme that is missing or malfunctioning in patients with mucopolysaccharidosis type I (MPS I).[1,2] By crossing the blood brain-barrier (BBB) through transferrin receptor mediated transcytosis, it is expected to be effective against central nervous system (CNS) signs and symptoms of the disease thereby addressing a significant unmet need for the treatment of MPS I. JR-171 previously was granted Fast Track designation by the US Food and Drug Administration (FDA).

About Mucopolysaccharidosis Type II (Hunter Syndrome)

Mucopolysaccharidosis type II (MPS II, or Hunter syndrome) is an X-linked recessive lysosomal storage disorder caused by a deficiency of iduronate-2-sulfatase, an enzyme that breaks down complex carbohydrates called glycosaminoglycans (GAGs, also known as mucopolysaccharides) in the body. Hunter syndrome, which affects an estimated 2,000-3,000 individuals worldwide (according to JCR research), gives rise to a wide range of somatic and neurological symptoms. The current standard of care for Hunter syndrome is enzyme replacement therapy. Central nervous system symptoms related to MPS II have been unmet medical needs so far.

About JR-141

JR-141 (pabinafusp alfa) is a recombinant fusion protein of an antibody against the human transferrin receptor and iduronate-2-sulfatase, the enzyme that is missing or malfunctioning in subjects with Hunter syndrome. It incorporates J-Brain Cargo®, JCR's proprietary blood-brain barrier (BBB)-penetrating technology, to cross the BBB through transferrin receptor-mediated transcytosis, and its uptake into cells is mediated through the mannose-6-phosphate receptor. This novel mechanism of action is expected to make IZCARGO™ effective against the central nervous system (CNS) symptoms of Hunter syndrome.

In pre-clinical trials, JCR has confirmed both high-affinity binding of pabinafusp alfa to transferrin receptors and passage across the BBB into neuronal cells. In addition, JCR has confirmed enzyme uptake in various brain tissues. The company has also confirmed a reduction of substrate accumulation in the CNS and peripheral organs in an animal model of Hunter syndrome.[3,4]

In several clinical trials of pabinafusp alfa, JCR obtained evidence of reducing heparan sulfate (HS) concentrations in the cerebrospinal fluid (CSF), a biomarker for assessing effectiveness against CNS symptoms; these results were consistent with those obtained in pre-clinical studies.[5] Clinical studies have also demonstrated the positive effects of pabinafusp alfa on CNS symptoms.[6,7,8]

Pabinafusp alfa was approved in Japan by the Ministry of Health, Labour and Welfare and marketed since May 2021 under the brand name "IZCARGO™ I.V. Infusion 10mg."

About JCR Pharmaceuticals Co., Ltd.

JCR Pharmaceuticals Co., Ltd. (TSE 4552) is a global specialty pharmaceutical company that develops treatments that go beyond rare diseases to solve the world's most complex healthcare challenges. We continue to build upon our 50-year legacy in Japan while expanding our global footprint into the U.S., Europe, and Latin America. We improve patients' lives by applying our scientific expertise and unique technologies to research, develop, and deliver next-generation therapies. Our approved products in Japan include therapies for the treatment of growth disorder, MPS II (Hunter syndrome), Fabry disease, acute graft-versus host disease, and renal anemia. Our investigational products in development worldwide are aimed at treating rare diseases including MPS I (Hurler, Hurler-Scheie and Scheie syndrome), MPS II, MPS IIIA and B (Sanfilippo syndrome type A and B), and more. Our core values – Putting people first, Forging our own path, Always advancing, and Committed to excellence – mean that the work we do benefits all our stakeholders, including partners, patients and employees. We strive to expand the possibilities for patients while accelerating medical advancement at a global level. For more information, please visit JCR's global website: https://jcrpharm.com/.

Cautionary Statement Regarding Forward-Looking Statements

This document contains forward-looking statements that are subject to known and unknown risks and uncertainties, many of which are outside our control. Forward-looking statements often contain words such as "believe," "estimate," "anticipate," "intend," "plan," "will," "would," "target" and similar references to future periods. All forward-looking statements regarding our plans, outlook, strategy and future business, financial performance and financial condition are based on judgments derived from the information available to us at this time. Factors or events that could cause our actual results to be materially different from those expressed in our forward-looking statements include, but are not limited to, a deterioration of economic conditions, a change in the legal or governmental system, a delay in launching a new product, impact on competitors' pricing and product strategies, a decline in marketing capabilities relating to our products, manufacturing difficulties or delays, an infringement of our intellectual property rights, an adverse court decision

in a significant lawsuit and regulatory actions. This document involves information on pharmaceutical products (including those under development). However, it is not intended for advertising or providing medical advice. Furthermore, it is intended to provide information on our company and businesses and not to solicit investment in securities we issue. Except as required by law, we assume no obligation to update these forward-looking statements publicly or to update the factors that could cause actual results to differ materially, even if new information becomes available in the future.

References

1: Kida S, et al. Enzyme replacement with transferrin receptor-targeted α-L-iduronidase rescues brain pathology in mucopolysaccharidosis I mice. Mol Ther Methods Clin Dev. 2023; 29: 439-449.
2: Harmatz P, et al. α-L-iduronidase fused with humanized anti-human transferrin receptor antibody (lepunafusp alfa) for mucopolysaccharidosis type I: A phase 1/2 trial. Mol Ther. 2024; 32(3): 609-618.
3: Sonoda, et al. A blood-brain-barrier-penetrating anti-human transferrin receptor antibody fusion protein for neuronopathic mucopolysaccharidosis II. Mol. Ther. 2018; 26(5): 1366-1374.
4: Morimoto, et al. Clearance of heparin sulfate in the brain prevents neurodegeneration and neurocognitive impairment in MPS II mice. Mol. Ther. 2021; 29(5): 1853-1861.
5: Okuyama, et al. Iduronate-2-sulfatase with Anti-human Transferrin Receptor Antibody for Neuropathic Mucopolysaccharidosis II: A Phase 1/2 Trial. Mol Ther. 2020; 27(2): 456-464.
6: Okuyama, et al. A Phase 2/3 Trial of Pabinafusp Alfa, IDS Fused with Anti-Human Transferrin Receptor Antibody, Targeting Neurodegeneration in MPS-II. Mol Ther. 2021; 29(2): 671-679.
7: Giugliani, et al. Iduronate-2-sulfatase fused with anti-human transferrin receptor antibody, pabinafusp alfa, for treatment of neuronopathic and non-neuronopathic mucopolysaccharidosis II: Report of a phase 2 trial in Brazil. Mol Ther. 2021; 29(7): 2378-2386.
8: Giugliani, et al. Enzyme Replacement Therapy with Pabinafusp Alfa for Neuronopathic Mucopolysaccharidosis II; an Integrated Analysis of Preclinical and Clinical Data. Int. J. Mol. Sci. 2021, Volume 22, Issue 20, 10938.

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