



Media Release

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MorphoSys presents interim results from M-PLACE study with felzartamab during American Society of Nephrology Annual Meeting

Felzartamab has the potential to rapidly and substantially reduce anti-PLA2R antibody titers in patients with anti-PLA2R-positive membranous nephropathy

MorphoSys AG (FSE: MOR; NASDAQ: MOR) presented interim results from the M-PLACE study with felzartamab at the 2021 Annual Meeting of the American Society of Nephrology (ASN) on November 4-7. The poster entitled “Felzartamab in patients with anti-phospholipase A2 receptor autoantibody positive (anti-PLA2R+) membranous nephropathy (MN): Interim results from the M-PLACE study” shows data from the ongoing Phase 1b/2a, proof of concept, open-label, multicenter study designed to assess the safety and efficacy of felzartamab in adults with high anti-PLA2R-positive MN, an autoimmune kidney disease and a leading cause of nephrotic syndrome in adults. Patients with high autoantibody titers are considered a population difficult to induce immunologic remission.

Felzartamab is an investigational, fully human IgG1 monoclonal anti-CD38 antibody that has a high potential to deplete CD38-positive plasma cells that produce and secrete these destructive autoantibodies. Depleting those plasma cells could be effective in the treatment of anti-PLA2R antibody-positive MN.

The M-PLACE study included 31 patients with primarily medium or high levels of anti-PLA2R antibody titers at baseline and/or patients who were refractory to previous treatments. Of the 27 treated patients with evaluable results, 24 showed an initial rapid reduction of anti-PLA2R antibody levels one week after the first treatment. After 12 weeks of treatment, most patients showed a substantial reduction in autoantibody titer. The observed titer reduction was independent of cohort and suggests successful depletion of CD38-positive plasma cells. Safety profile was consistent with the proposed mechanism of action of felzartamab and treatment-emergent adverse events were manageable. An early assessment of urine protein: creatinine ratio (UPCR) results at 6 months of treatment showed a decrease in 6 of 10 patients, with 4 patients having a decrease of $\geq 50\%$ from baseline. The first patient who has already reached the 12-month time point showed a complete immunologic response and a partial clinical response.

“These encouraging early data show that felzartamab has the potential to decrease autoantibodies responsible for the development and progression of membranous nephropathy,” said Dr. Malte Peters, Chief Research and Development Officer, MorphoSys.

“We are looking forward to generating more mature data to confirm how these findings translate into a clinical benefit for patients and the design for a potential pivotal study.”

“Early proteinuria reduction was observed in several patients six months after felzartamab therapy was started”, said Brad Rovin, MD nephrologist at Ohio State University and the lead author of the poster. “We are excited to see how proteinuria changed in response to felzartamab as follow-up data from the M-PLACE trial continue to accumulate.”

More mature data from all patients will be obtained over the following months, including the complete urine protein: creatinine ratios (UPCR) for all patients, to evaluate if the observed immunological response is followed by a clinical response.

About Membranous Nephropathy (MN):

Primary membranous nephropathy (MN) is a rare autoimmune kidney disease and a leading cause of nephrotic syndrome in adults worldwide.¹ MN has a global incidence of approximately 1.2/100,000 per year.² As many as 40-50% of patients with MN progress to end-stage kidney disease (ESKD) within 5-15 years of diagnosis.^{3,4} Even in the absence of ESKD, patients with long-term nephrotic syndrome are at risk of severe and life-threatening thromboembolic events and cardiovascular disease.³ Approximately 75% of primary MN cases arise due to autoantibodies to the phospholipase A2 receptor (PLA2R) that target PLA2R on podocytes^{5,6}. The immune complexes formed by the binding of these autoantibodies to PLA2R induce complement activation and inflammation, which thickens the glomerular membrane and impairs kidney function¹. The main source of autoantibodies is CD38+/CD20- plasma cells and plasmablasts⁷. Higher anti-PLA2R autoantibody titer is associated with more severe disease, a longer time to disease remission, and a decreased response to anti-CD20 rituximab treatment^{5,8,9}. There are no approved therapies for MN, the current standard of care comprises off-label use of non-immunosuppressive agents (e.g. angiotensin-converting enzyme inhibitors or angiotensin receptor blockers, statins, and diuretics)^{1,10}, conventional immunosuppressive treatments (ISTs) (e.g. cyclophosphamide combined with steroids, calcineurin inhibitors, mycophenolate mofetil)^{1,10} or B-cell depleting agents (e.g. anti-CD20 antibodies)^{1,10}. However, these treatments are not effective in all patients and, in particular, conventional ISTs are associated with a high risk of toxicity^{1,5,10}.

About Felzartamab

Felzartamab (MOR202/TJ202) is a therapeutic human monoclonal antibody derived from MorphoSys' HuCAL antibody library and directed against CD38. In Membranous Nephropathy, long-lived plasma cells drive pathogenic antibody production, contributing to functional damage to the glomeruli in the kidney. By targeting CD38, Felzartamab has the potential to deplete the CD38 positive plasma cells, which may ultimately improve patient's kidney functions.

MorphoSys is currently evaluating the safety and efficacy of investigational Felzartamab for patients with anti-PLA2R antibody-positive membranous nephropathy (M-PLACE and NewPLACE trial) and Immunoglobulin A Nephropathy (IGNAZ trial).

In 2017, MorphoSys entered into an exclusive regional licensing agreement with I-Mab Biopharma (NASDAQ: IMAB) to develop and commercialize Felzartamab in Greater China. I-Mab is currently conducting two parallel registrational trials with felzartamab as a third-line monotherapy and as a second-line combination therapy with lenalidomide, both in patients with multiple myeloma (MM) in Greater China. Felzartamab for MM third-line treatment is on track for BLA submission in Q4 2021 and the MM second line registrational trial is on track for completion of patient enrollment.

Felzartamab is an investigational drug that has not yet been approved by any regulatory authorities.

About MorphoSys

MorphoSys (FSE & NASDAQ: MOR) is a biopharmaceutical company dedicated to the discovery, development and commercialization of innovative therapies for people living with cancer and autoimmune diseases. Based on its leading expertise in antibody and protein technologies, MorphoSys is advancing its own pipeline of new drug candidates and has created antibodies that are developed by partners in different areas of unmet medical need. In 2017, Tremfya® (guselkumab) – developed by Janssen Research & Development, LLC and marketed by Janssen Biotech, Inc. for the treatment of plaque psoriasis – became the first drug based on MorphoSys' antibody technology to receive regulatory approval. In July 2020, the U.S. Food and Drug Administration granted accelerated approval

of the company's proprietary product Monjuvi® (tafasitamab-cxix) in combination with lenalidomide for patients with a certain type of lymphoma. Headquartered near Munich, Germany, the MorphoSys Group, including the fully owned U.S. subsidiaries MorphoSys US Inc. and Constellation Pharmaceuticals, Inc., has more than 750 employees. For more information visit www.morphosys.com or www.morphosys-us.com.

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¹⁰ Rovin BH, et al. Kidney Int 2021;100(4):S1-276.