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MEDIA & INVESTOR RELEASE

Novartis presents new 48-week results from Phase III APPLY-PNH trial showing sustained efficacy and long-term safety of Fabhalta® (iptacopan) in adults with paroxysmal nocturnal hemoglobinuria (PNH)

- *APPLY-PNH extension data show that continuous Fabhalta® (iptacopan) treatment in adults with paroxysmal nocturnal hemoglobinuria (PNH) enabled sustained hemoglobin-level increases to near-normal (≥12 g/dL), blood transfusion avoidance, and improved patient-reported fatigue in the majority of patients, with a safety profile consistent with previously reported data*[1-5]

- *Patients switching from anti-C5s to Fabhalta in the extension period achieved outcomes comparable to the Fabhalta arm in the 24-week randomized controlled period, including transfusion avoidance and near-normal hemoglobin-levels (≥12 g/dL) in the majority of patients*[1]

- *Fabhalta was recently approved by the FDA for adults with PNH, including for both previously treated and treatment-naive patients*[6]

Basel, December 11, 2023 – Novartis today announced results from the extension period of the pivotal Phase III APPLY-PNH trial of oral monotherapy Fabhalta® (iptacopan) in adults with paroxysmal nocturnal hemoglobinuria (PNH) who had residual anemia (hemoglobin <10 g/dL) despite previous anti-C5 therapy[1,2]. Continuous Fabhalta treatment (200 mg twice daily) for 48 weeks enabled sustained hemoglobin-level increases to near-normal (12 g/dL or more), blood transfusion avoidance, and reduced patient-reported fatigue in the majority of patients; comparable benefits emerged in those patients switching from anti-C5 therapy to Fabhalta in the extension[1]. Data will be presented at the 65th American Society of Hematology Annual Meeting & Exposition (ASH).

“The new APPLY-PNH data are an expansion of the robust outcomes we saw in the randomized phase and demonstrate that patients with PNH who took Fabhalta experienced meaningful hemoglobin improvement over the longer term – nearly a year,” said principal co-investigator Antonio Risitano, M.D., Ph.D., President of the International PNH Interest Group and Head of the Hematology and Hematopoietic Transplant Unit, Reference Center for Aplastic Anemia and Paroxysmal Nocturnal Hemoglobinuria at the AORN San Giuseppe Moscati, Avellino, Italy. “Additionally, the new data confirm that these benefits may occur within weeks after switching from anti-C5s. The APPLY-PNH findings continue to confirm Fabhalta as a promising therapeutic option for people living with PNH.”

Patients completing the 24-week randomized treatment period of APPLY-PNH could elect to enter the extension, continuing Fabhalta (61/62 patients; one patient discontinued due to

pregnancy) or switching from anti-C5s to Fabhalta (34/35 patients; one patient discontinued based on investigator decision) through week 48[1,2].

In the continuous Fabhalta group, outcomes achieved in the randomized period were sustained at 48 weeks: mean hemoglobin level continued to be near-normal (12.2 g/dL), nearly all patients (91.9%) remained free of transfusions (Weeks 2-48), and improvements in patient-reported fatigue were observed (adjusted mean change from baseline: 9.80-point increase in Functional Assessment of Chronic Illness Therapy – Fatigue [FACIT-F] score)[1].

In the anti-C5-to-Fabhalta group, similar benefits emerged after switch: mean hemoglobin levels increased to near-normal (from 9.1 g/dL at 24 weeks to 12.1 g/dL at 48 weeks), transfusion avoidance was achieved for almost all patients (94.1%, Weeks 26-48), and improvements in patient-reported fatigue were observed after switching to Fabhalta (adjusted mean change from baseline between Week 48 and Week 24: 10.79-point increase in FACIT-F score)[1].

“Coming on the heels of Fabhalta’s recent approval in PNH, these extended data from the APPLY-PNH phase III trial reinforce Fabhalta’s utility as an important new oral monotherapy for people living with PNH,” said David Soergel, M.D., Global Head, Cardiovascular, Renal and Metabolism Development Unit, Novartis. “We are eager to bring this novel treatment to even more people living with rare complement-driven disorders as we pursue several additional indications for Fabhalta.”

Fabhalta had a similar safety profile at 48 weeks vs. 24 weeks[1,2]. Three patients had major adverse vascular events (MAVEs), all considered unrelated to Fabhalta (one serious transient ischemic attack [TIA] occurred in the randomized period and was reported previously)[1,2]. In the extension, there was one non-serious TIA and one serious portal vein thrombosis (PVT; this patient had a history of PVT and discontinued heparin prior to the MAVE)[1]. Six patients of 62 receiving continuous Fabhalta for 48 weeks had clinical breakthrough hemolysis (BTH); one patient in the anti-C5-to-Fabhalta extension arm had clinical BTH after switching (compared to six of 35 patients while on anti-C5s prior to switch)[1,2]. All cases of clinical BTH resolved without changing Fabhalta dosing[1]. During the 48-week study period, the most frequently reported treatment-emergent adverse events (TEAEs) in the Fabhalta arm were COVID-19 (29.0% of patients), headache (19.4%), and diarrhea (16.1%)[1]. Throughout the full 48 weeks on Fabhalta, 9.7% of patients experienced any severe TEAE, and 14.5% experienced any serious TEAE, none of which was suspected to be related to Fabhalta treatment; there were no serious hemolysis TEAEs on Fabhalta[1,2]. There were no serious infections caused by *N. meningitidis, S. pneumoniae,* or *H. influenzae* and no treatment discontinuations because of TEAEs[1,2].

PNH is a rare, chronic, and serious complement-mediated blood disorder in which a large proportion of patients can remain anemic and some dependent on blood transfusions despite currently available standard of care, anti-C5 treatments[7-10].

Full 48-week results from the Phase III APPOINT-PNH trial in treatment-naïve PNH patients will be presented at a congress in 2024.

About APPLY-PNH
APPLY-PNH (NCT04558918) was a Phase III, randomized, multinational, multicenter, active-comparator controlled, open-label trial to evaluate the efficacy and safety of twice-daily, oral Fabhalta monotherapy (200 mg) for the treatment of PNH by assessing if switching to Fabhalta was superior to continuing on anti-C5 therapies (US-approved and non-US-approved eculizumab or ravulizumab) in adult patients presenting with residual anemia (Hb <10 g/dL) despite a stable regimen of anti-C5 treatment in the last six months prior to randomization[4,11]. The trial enrolled 97 patients who were randomized in an 8:5 ratio to either twice-daily, oral Fabhalta monotherapy, or intravenous anti-C5 therapies (continuing with the same regimen as they were on prior to randomization)[4,11].

About paroxysmal nocturnal hemoglobinuria (PNH)

PNH is a rare, chronic and serious complement-mediated blood disorder[7]. People with PNH have an acquired mutation in some of their hematopoietic stem cells (which are located in the bone marrow and can grow and develop into RBCs, white blood cells and platelets) that causes them to produce RBCs that are susceptible to premature destruction by the complement system[7,8]. This leads to intravascular hemolysis (destruction of RBCs within blood vessels) and extravascular hemolysis (destruction of RBCs mostly in the spleen and liver), which cause anemia (low levels of circulating RBCs), thrombosis (formation of blood clots), fatigue and other debilitating symptoms[7,8].

It is estimated that approximately 10-20 people per million worldwide live with PNH[7]. Although PNH can develop at any age, it is often diagnosed in people between 30-40 years old[12-14].

PNH has a significant unmet need not addressed by anti-C5 therapies (eculizumab or ravulizumab): despite treatment with anti-C5s, a large proportion of people with PNH remain anemic, and some dependent on blood transfusions[7-10,15].

About Fabhalta® (iptacopan)
Fabhalta (iptacopan) is an oral, Factor B inhibitor of the alternative complement pathway[14,16,17]. Fabhalta is FDA-approved for the treatment of adults with paroxysmal nocturnal hemoglobinuria (PNH).

Discovered at Novartis, Fabhalta is currently in development for a range of complement-mediated diseases including, immunoglobulin A nephropathy (IgA nephropathy), C3 glomerulopathy (C3G), immune complex membranoproliferative glomerulonephritis (IC-MPGN) and atypical hemolytic uremic syndrome (aHUS).

Based on disease prevalence, unmet needs and data from Phase II studies, Fabhalta has received FDA approval in PNH, FDA Breakthrough Therapy Designation in C3G, orphan drug designations from the FDA and EMA in PNH and C3G, EMA PRIME designation for C3G, and EMA orphan drug designation in IgAN[6,18-22].

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This press release contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995. Forward-looking statements can generally be identified by words such as “potential,” “can,” “will,” “plan,” “may,” “could,” “expectations,” “investigational,” “drives,” “remains,” “ongoing,” “exploring,” “goal,” “expected,” “estimated,” or similar terms, or by express or implied discussions regarding potential marketing approvals, new indications or labeling for FABHALTA (iptacopan), or regarding potential future revenues from such products. You should not place undue reliance on these statements. Such forward-looking statements are based on our current beliefs and expectations regarding future events, and are subject to significant known and unknown risks and uncertainties. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those set forth in the forward-looking statements. There can be no guarantee that FABHALTA (iptacopan) will be submitted or approved for sale or for any additional indications or labeling in any market, or at any particular time. Nor can there be any guarantee that such products will be commercially successful in the future. In particular, our expectations regarding FABHALTA (iptacopan) could be affected by, among other things, the uncertainties inherent in research and development, including clinical trial results and additional analysis of existing clinical data; regulatory actions or delays or government regulation generally; global trends toward health care cost containment, including government, payor and general public pricing and reimbursement pressures and requirements for increased pricing transparency; our ability to obtain or maintain proprietary intellectual property protection; the particular prescribing preferences of physicians and patients; general political, economic and business conditions, including the effects of and efforts to mitigate pandemic diseases; safety, quality, data integrity or manufacturing issues; potential or actual data security and data privacy breaches, or disruptions of our information technology systems, and other risks and factors referred to in Novartis AG’s current Form 20-F on file with the US Securities and Exchange Commission. Novartis is providing the information in this press release as of this date and does not

undertake any obligation to update any forward-looking statements contained in this press release as a result of new information, future events or otherwise.

About Novartis
Novartis is an innovative medicines company. Every day, we work to reimagine medicine to improve and extend people's lives so that patients, healthcare professionals and societies are empowered in the face of serious disease. Our medicines reach more than 250 million people worldwide.

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