

MEDIA & INVESTOR RELEASE

Novartis presents new long-term Leqvio[®] (inclisiran) data demonstrating consistent efficacy and safety beyond six years

- *Results from the ORION-8 open-label extension trial show twice-yearly* Leqvio, in addition to statin therapy, provides consistent low-density lipoprotein cholesterol (LDL-C) reduction beyond six years of treatment¹*
- *Eight in ten patients achieved target LDL-C threshold**, in line with previously reported Phase III data¹⁻³*
- *Long-term safety data was consistent with previous findings, confirming the well-established and favorable safety profile of Leqvio¹⁻³*
- *Approximately four in five ASCVD patients using statins alone to lower cholesterol, including those who already experienced a heart attack or stroke, do not reach recommended LDL-C target⁴*

August 28, 2023 — Novartis today announced new long-term data from ORION-8, a Phase III open-label extension of ORION-9, ORION-10, ORION-11 and ORION-3 trials. The data demonstrated that with twice-yearly* dosing, Leqvio, in addition to statin therapy, provides consistent low-density lipoprotein cholesterol (LDL-C) reduction beyond six years in patients with atherosclerotic cardiovascular disease (ASCVD), increased risk of ASCVD or heterozygous familial hypercholesterolemia (HeFH)¹. The results were presented in a late-breaking session at the European Society of Cardiology (ESC) Congress 2023 in Amsterdam.

ORION-8, the largest clinical trial completed to date with Leqvio, continues to support the consistent long-term efficacy, safety, and tolerability of Leqvio, with a total exposure of more than 8,500 patient-years during the trial's three-year follow-up¹. Patients from four previous completed Novartis trials (ORION-9, ORION-10, ORION-11 and ORION-3) received Leqvio every six months* for up to an additional three years^{1,5}. Nearly 80% (78.4% (95% CI: 76.8, 80.0)) of patients reached their pre-specified LDL-C targets**, and on average, LDL-C levels were reduced by approximately 50% (49.4% (95% CI: 48.3, 50.4))¹. These results demonstrate consistent efficacy as they are comparable to the LDL-C reductions observed at the end of the initial trials^{1-3,6}. In addition, the long-term safety data was consistent with previous findings, confirming the well-established and favorable safety profile of Leqvio^{1-3,6}.

“These long-term results show that twice-yearly inclisiran, when used in addition to statin therapy, provides consistent LDL-C reduction in patients with ASCVD, and those at increased

risk of developing cardiovascular disease,” said Norman Lopor, M.D., a Los Angeles based cardiologist and Director of the National Heart Institute. “While LDL-C is one of the most readily modifiable risk factors for heart disease, many patients do not reach their recommended LDL-C target through use of statin therapy alone. The demonstrated long-term efficacy of inclisiran indicates that after administration by a health care provider (HCP), both patient and HCP can be confident that a dose has been received for six months.”

ORION-8 is part of VictORION, a large dynamic clinical trial program co-created with healthcare partners worldwide to generate evidence on the impact of cholesterol-lowering with Leqvio. The program is enrolling over 60,000 patients, across more than 50 countries and more than 30 clinical trials⁷.

“The ORION-8 results affirm the benefits of Leqvio in helping patients achieve sustained LDL-C reduction, which is important as cumulative exposure to LDL-C leads to the growth of plaque in the arteries and an increased risk of cardiovascular events,” said David Soergel, M.D., Global Head of Cardiovascular, Renal and Metabolic Drug Development, Novartis. “The trial is part of a growing body of evidence for Leqvio being generated through our ongoing VictORION program that is examining the use of Leqvio in broad and varied patient populations affected by ASCVD.”

Leqvio is the first and only small interfering RNA (siRNA) therapy to lower LDL-C. It is approved in over 80 countries, including the US, EU and China^{8,9,10}. In the US, the FDA approved a label update in July 2023 that allows for earlier use of Leqvio to help reduce LDL-C as an adjunct to diet and statin therapy for patients with elevated LDL-C who have not had a cardiovascular event but are at an increased risk of heart disease^{8,11}.

** After an initial dose and another at three months.*

*** <70 mg/dL, the target for patients with ASCVD or <100mg/dL for patients with increased risk of ASCVD.*

About Leqvio

Leqvio is a subcutaneous injection given by a health care provider with an initial dose, another at three months, and then every six months^{8,9}. As a twice-yearly, HCP-administered treatment, Leqvio may help to circumvent the challenges of treatment adherence, a common issue in cholesterol management^{2,3,11}. Leqvio is approved in more than 80 countries worldwide including the US, EU and China^{8,9,10}.

Novartis has obtained global rights to develop, manufacture and commercialize Leqvio under a license and collaboration agreement with Alnylam Pharmaceuticals, a leader in RNAi therapeutics.

About ORION-8

ORION-8 (NCT03814187) is a three-year open-label extension of the placebo-controlled 18-month Phase III trials ORION-9, ORION-10, and ORION-11 and the four-year Phase II ORION-3 trial (an extension of the one-year Phase II ORION-1 trial)^{5,13}. ORION-8 evaluated the long-term safety, efficacy and tolerability of Leqvio in 3,274 patients with atherosclerotic cardiovascular disease (ASCVD), increased risk of ASCVD (includes patients who have comorbidities such as diabetes and hypertension) or heterozygous familial hypercholesterolemia (HeFH) and elevated low density lipoprotein cholesterol (LDL-C), despite maximum tolerated dose of LDL-C lowering therapies⁵. 2,446 patients completed the trial to Day 1080 (three years)¹. The primary endpoint of the study was the proportion of patients achieving pre-specified LDL-C targets at the end of the study, either Day 1080 or 90 days after the last injection⁵. Patients received 300 mg inclisiran sodium twice yearly (every six months) for up to an additional three years after baseline studies³. Adverse events at the injection site occurred in 5.9% of patients, compared with 8% in the Leqvio arm of the pooled analysis of ORION-9, ORION-10, and ORION-11 trials^{1,8}.

About VictORION

VictORION is an innovative and robust clinical program for Leqvio, comprising more than 30 trials and enrolling over 60,000 patients in more than 50 countries worldwide⁷. The program is designed to expand on the foundational evidence of LDL-C reduction with Leqvio in diverse patient populations to include randomized clinical trials, implementation research, real-world evidence, and trials that aim to establish its potential benefits on cardiovascular outcomes in primary and secondary prevention. A growing number of studies are planned to generate a vast array of data with major trials such as ORION-4 (secondary prevention), V(VictORION)-2-PREVENT (secondary prevention), V-1-PREVENT (high-risk primary prevention), V-INITIATE, V-INCEPTION, V-REAL, V-DIFFERENCE, and V-PLAQUE.

About atherosclerotic cardiovascular disease (ASCVD)

Atherosclerotic cardiovascular disease (ASCVD) refers to a variety of diseases caused by the development and growth of plaques in the inner lining of the arteries¹⁴. The atherosclerotic plaque is mainly composed of low-density lipoprotein cholesterol (LDL-C) which accumulates over time¹⁴. Cumulative exposure to LDL-C is proportionally related to arterial plaque growth and progression leads to subsequent risk of cardiovascular events such as a heart attack or stroke^{14,15}. Accounting for 85% of all cardiovascular disease deaths, ASCVD is the primary cause of mortality in the European Union and its burden in the United States is greater than that from any other chronic diseases¹⁶⁻¹⁹. ASCVD risk-equivalent corresponds to conditions that confer a similar risk for an ASCVD event (e.g., diabetes, heterozygous familial hypercholesterolemia)^{2,19}.

About Novartis in Cardiovascular

Cardiovascular (CV) disease is a global health crisis^{16,20}. CV disease is the number one killer in the world¹⁶. Taking more lives than all cancers combined, it contributes to one in every three deaths globally^{16,20}. Of all CV events, 80% can be prevented²¹. Patients and their families deserve better, and our society deserves more.

Thanks to a combination of our legacy, global footprint and leading science, Novartis is uniquely positioned to help change this landscape. We are transforming the way we think about how CV disease is managed throughout life. Our efforts include the use of early interventions and the development of pioneering treatments that address the spectrum of CV disease, from prevention to management, as well as the creation of innovative access models. By re-writing the way we work with society, we will lead a worldwide effort to improve health outcomes and roll back the crisis of CV death.

Our goal is to bend the curve of life by reducing and stopping premature death from CV disease.

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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 such as COVID-19; 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 reimagining medicine to improve and extend people's lives. We deliver high-value medicines that alleviate society's greatest disease burdens through technology leadership in R&D and novel access approaches. In our quest to find new medicines, we consistently rank among the world's top companies investing in research and development. About 103,000 people of more than 140 nationalities work together to bring Novartis products to nearly 800 million people around the world. Find out more at <https://www.novartis.com>

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References

1. RS Wright, FJ Raal, W Koenig, U Landmesser, LA Leiter, GG Schwartz, A Lesogor, P Maheux, Z Talloczy, S Vikarunnessa, X Zang, KK Ray. ORION-8: Long-term efficacy and safety of twice-yearly inclisiran in high cardiovascular risk patients. Data presented at the ESC Congress on August 28, 2023.
2. Ray KK, Wright RS, Kallend D, et al. Two Phase 3 Trials of Inclisiran in Patients with Elevated LDL Cholesterol. *N Engl J Med.* 2020;382(16):1507– 1519.
3. Raal FJ, Kallend D, Ray KK, et al. Inclisiran for the Treatment of Heterozygous Familial Hypercholesterolemia. *N Engl J Med.* 2020;382(16):1520– 1530.
4. Ray KK, Molemans B, Schoonen WM, et al. EU-Wide Cross-Sectional Observational Study of Lipid-Modifying Therapy Use in Secondary and Primary Care: the DA VINCI study. *Eur J Prev Cardiol.* 2021;28(11):1279-1289.
5. ClinicalTrials.Gov. ORION-8 (NCT03814187). Accessed July 14, 2023. <https://www.clinicaltrials.gov/study/NCT03814187>
6. Ray KK, Troquay RPT, Visseren FLJ, et al. Long-term efficacy and safety of inclisiran in patients with high cardiovascular risk and elevated LDL cholesterol (ORION-3): results from the 4-year open-label extension of the ORION-1 trial. *Lancet Diabetes Endocrinol.* 2023;11(2):109-119.
7. Novartis. Data on file.
8. Food and Drug Administration (FDA). Leqvio. Last updated July 2023. Accessed July 14, 2023. https://www.accessdata.fda.gov/drugsatfda_docs/label/2023/214012s009lbl.pdf
9. European Medicines Agency (EMA). Leqvio. Last updated December 2020. Accessed July 14, 2023. https://www.ema.europa.eu/en/documents/overview/leqvio-epar-medicine-overview_en.pdf
10. National Medical Products Administration (NMPA). August 23 Drug Approval Information. Accessed August 25, 2023. <https://www.nmpa.gov.cn/zfw/sdxx/sdxxyp/yppjfb/20230824155809182.html>
11. Novartis. Media release. US FDA approves expanded indication for Novartis Leqvio® (inclisiran) to include treatment of adults with high LDL-C and who are at increased risk of heart disease. July 10, 2023. <https://www.novartis.com/us-en/news/media-releases/us-fda-approves-expanded-indication-novartis-leqvio-inclisiran-include-treatment-adults-high-ldl-c-and-who-are-increased-risk-heart-disease>
12. Lansberg P, Lee A, Lee ZV, Subramaniam K, Setia S. Nonadherence to statins: individualized intervention strategies outside the pill box. *Vasc Health Risk Manag.* 2018;14:91-102.
13. Ray KK, Landmesser U, Leiter LA, et al. Inclisiran in Patients at High Cardiovascular Risk with Elevated LDL Cholesterol. *N Engl J Med.* 2017;376(15):1430-1440.
14. Goldstein JL, Brown MS. A century of cholesterol and coronaries: from plaques to genes to statins. *Cell.* 2015;161(1):161-172.
15. Ference BA, Graham I, Tokgozoglul L, Catapano AL. Impact of Lipids on Cardiovascular Health: JACC Health Promotion Series. *J Am Coll Cardiol.* 2018;72(10):1141-1156.
16. World Health Organization (WHO). Cardiovascular diseases (CVDs). Published June 2021. Accessed October 2022. [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds))

17. Roger VL, Go AS, Lloyd-Jones DM, et al. Heart disease and stroke Statistics–2012 update: A report from the American Heart Association. *Circulation*. 2012;125(1):e2-e220.
18. Kim H, Kim S, Han S, et al. Prevalence and incidence of atherosclerotic cardiovascular disease and its risk factors in Korea: a nationwide population-based study. *BMC Public Health*. 2019;19(1):1112.
19. National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) final report. *Circulation*. 2002;106(25):3143-3421.
20. World Health Organization (WHO). Fact sheet. Non-communicable diseases. Published June 2018. Accessed October 2022. <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
21. World Health Organization (WHO). Cardiovascular diseases: Avoiding heart attacks and strokes. Published September 2015. Accessed October 2022. <https://www.who.int/news-room/questions-and-answers/item/cardiovascular-diseases-avoiding-heart-attacks-and-strokes>

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Novartis Media Relations

E-mail: media.relations@novartis.com

Central

Richard Jarvis +41 79 584 2326
 Anja von Treskow +41 79 392 9697
 Anna Schäfers +41 79 801 7267

North America

Julie Masow +1 862 579 8456
 Michael Meo +1 862 274 5414
 Marlena Abdinoor +1 617 335 9525

Switzerland

Satoshi Sugimoto +41 79 619 2035

Novartis Investor Relations

Central investor relations line: +41 61 324 7944

E-mail: investor.relations@novartis.com

Central

Samir Shah +41 61 324 7944
 Nicole Zinsli-Somm +41 61 324 3809
 Isabella Zinck +41 61 324 7188

North America

Sloan Simpson +1 862 345 4440
 Parag Mahanti +1 973 876 4912