

## **New phase III data show Roche's Vabysmo rapidly improved vision and reduced retinal fluid in people with retinal vein occlusion (RVO)**

- **Vabysmo met its primary endpoint in two clinical trials, BALATON and COMINO, showing non-inferior visual acuity gains compared to aflibercept**
- **More Vabysmo patients showed an absence of blood vessel leakage in the retina compared to aflibercept in a pre-specified exploratory endpoint**
- **If approved, RVO would be the third indication for Vabysmo in addition to neovascular or 'wet' age-related macular degeneration and diabetic macular edema**

Basel, 10 February 2023 - Roche (SIX: RO, ROG; OTCQX: RHHBY) today announced positive new data from two global phase III studies, BALATON and COMINO, evaluating Vabysmo® (faricimab) in macular edema due to branch and central retinal vein occlusion (BRVO and CRVO) at 24 weeks.<sup>1,2</sup> The studies showed that treatment with Vabysmo resulted in early and sustained improvement in vision, meeting the primary endpoint of non-inferior visual acuity gains compared to treatment with aflibercept. Vabysmo also showed rapid and robust drying of retinal fluid from baseline, as measured by reduction in central subfield thickness. The safety profile of Vabysmo was consistent with previous trials. Results will be presented virtually on 11 February at Angiogenesis, Exudation and Degeneration 2023, organised by the Bascom Palmer Eye Institute in Florida, United States.<sup>3</sup>

"These encouraging results reinforce the potential of Vabysmo as a new treatment option for people experiencing vision loss associated with retinal vein occlusion," said Levi Garraway, M.D., Ph.D., Roche's Chief Medical Officer and Head of Global Product Development. "As these positive data continue to accrue, we believe Vabysmo may redefine the standard of care for multiple types of retinal conditions that can cause blindness."

Neovascular or 'wet' age-related macular degeneration (nAMD), diabetic macular edema (DME) and RVO together affect around 70 million people worldwide and are among the leading causes of vision loss.<sup>4-8</sup> Data from the BALATON and COMINO studies will be submitted to health authorities around the world, including the United States Food and Drug Administration and European Medicines Agency, for approval for the treatment of macular edema due to RVO. If approved, this would be the third indication for Vabysmo, which is currently approved in more than 50 countries to treat nAMD and DME.<sup>9</sup>

"Retinal vein occlusion can cause fluid to become trapped within and under the retina, leading to rapid and severe vision loss if left untreated," said Ramin Tadayoni, M.D., Ph.D., president-elect of EURETINA, who is presenting the data at Angiogenesis. "These promising

results show that Vabysmo effectively reduces fluid in the retina and improves vision in patients with retinal vein occlusion.”

Vabysmo’s efficacy and safety in nAMD and DME have been demonstrated by two-year data from four large, global studies involving more than 3,000 participants.<sup>10-13</sup> Vabysmo is the first bispecific antibody approved for the eye with phase III studies supporting treatment intervals of up to four months for people with these conditions.<sup>14</sup> It targets and inhibits two signalling pathways linked to a number of vision-threatening retinal conditions by neutralising angiopoietin-2 (Ang-2) and vascular endothelial growth factor-A (VEGF-A).<sup>10,11</sup> Globally, more than 450,000 Vabysmo doses have been distributed for treatment of these conditions to date.<sup>9</sup>

### Study results<sup>3</sup>

In the BALATON and COMINO studies, patients were randomised 1:1 to receive six monthly injections of either Vabysmo® (faricimab) (6.0 mg) or aflibercept (2.0 mg) for 20 weeks, with the primary endpoint measured at week 24. Both studies met their primary endpoint, with Vabysmo showing non-inferior visual acuity gains compared to aflibercept. The average vision gains from baseline were comparable between the two treatments in both studies. In BALATON, vision gains were +16.9 eye chart letters in the Vabysmo arm and +17.5 letters in the aflibercept arm at 24 weeks. In COMINO, vision gains were +16.9 letters in the Vabysmo arm and +17.3 letters in the aflibercept arm at 24 weeks. Additionally, the percentage of patients gaining 15 or more letters was comparable across treatment arms in both studies.

Fluid in the retina in the back of the eye, which may result from blood vessel leakage, can cause swelling and blurry vision.<sup>15</sup> A secondary endpoint showed that Vabysmo achieved rapid and robust drying of retinal fluid from baseline, as measured by reduction in central subfield thickness (CST). In both studies, reductions in CST were comparable across treatment arms. In BALATON, CST reductions were -311.4 µm in the Vabysmo arm and -304.4 µm in the aflibercept arm. In COMINO, CST reductions were -461.6 µm in the Vabysmo arm and -448.8 µm in the aflibercept arm. Additionally, both studies showed that more Vabysmo patients had an absence of blood vessel leakage in the retina compared to aflibercept patients as seen in a pre-specified exploratory endpoint. In BALATON, one third of patients (34%) treated with Vabysmo had an absence of leakage compared to one fifth (21%) of aflibercept patients. In COMINO, the rates were 44% for Vabysmo patients versus 30% for aflibercept patients.

In both studies, Vabysmo’s safety profile was consistent with previous trials. The most common adverse reaction was conjunctival haemorrhage (3%). Safety results were consistent across study arms.

The studies are ongoing, and data from weeks 24 to 72 will assess the potential of Vabysmo to extend dosing intervals up to every four months.

### About the BALATON and COMINO studies<sup>1,2</sup>

BALATON ([NCT04740905](#)) and COMINO ([NCT04740931](#)) are two randomised, multicentre, double-masked, global phase III studies evaluating the efficacy and safety of Vabysmo® (faricimab) compared to aflibercept. For the first 20 weeks, patients are randomised 1:1 to receive six monthly injections of either Vabysmo (6.0 mg) or aflibercept (2.0 mg). From weeks 24-72, all patients receive Vabysmo (6.0 mg) up to every four months – according to a personalised treatment interval dosing regimen – using a treat-and-extend approach.

The BALATON study is being conducted in 553 people with branch retinal vein occlusion. The COMINO study is being conducted in 729 people with central retinal or hemiretinal vein occlusion.

The primary endpoint of each study is the change in best-corrected visual acuity from baseline at 24 weeks. Secondary endpoints include change in central subfield thickness and drying of retinal fluid from baseline over time up to 24 weeks.

### About retinal vein occlusion (RVO)

RVO is the second most common cause of vision loss due to retinal vascular diseases.<sup>4</sup> It affects an estimated 28 million adults globally, mainly those aged 60 or older, and can lead to severe and sudden vision loss.<sup>4,16</sup> RVO typically results in sudden, painless vision loss in the affected eye because the vein blockage restricts normal blood flow in the affected retina, resulting in ischaemia, bleeding, fluid leakage and retinal swelling called macular edema.<sup>16-18</sup> Currently, macular edema due to RVO is typically treated with repeated intravitreal injections of anti-vascular endothelial growth factor therapies.<sup>18</sup> There are two main types of RVO: branch retinal vein occlusion, which affects more than 23 million people globally and occurs when one of the four smaller ‘branches’ of the main central retinal vein becomes blocked; and central retinal vein occlusion, which is less common, affecting more than four million people worldwide, and occurs when the eye’s central retinal vein becomes blocked.<sup>4,18</sup>

### About the Vabysmo® (faricimab) clinical development programme

Roche has a robust phase III clinical development programme for Vabysmo. The programme includes AVONELLE-X, an extension study of TENAYA and LUCERNE evaluating the long-term safety and tolerability of Vabysmo in neovascular or ‘wet’ macular degeneration (nAMD), and Rhone-X, an extension study of YOSEMITE and RHINE evaluating the long-term safety and tolerability of Vabysmo in diabetic macular edema (DME).<sup>19,20</sup> Roche has also initiated several phase IV studies, including the Elevatum study of Vabysmo in underrepresented patient populations with DME, the SALWEEN study of Vabysmo in a subpopulation of nAMD highly prevalent in Asia, as well as the VOYAGER study, a global real-world data collection platform.<sup>21-23</sup> Roche also supports several other independent studies to further understand retinal conditions with a high unmet need.

### About Vabysmo® (faricimab)

Vabysmo is the first bispecific antibody approved for the eye.<sup>24,25</sup> It targets and inhibits two signalling pathways linked to a number of vision-threatening retinal conditions by neutralising angiopoietin-2 (Ang-2) and vascular endothelial growth factor-A (VEGF-A). Ang-2 and VEGF-A contribute to vision loss by destabilising blood vessels, causing new leaky blood vessels to form and increasing inflammation.<sup>10,11</sup> By blocking pathways involving Ang-2 and VEGF-A, Vabysmo is designed to stabilise blood vessels.<sup>10,11</sup> Vabysmo is approved in more than 50 countries around the world, including the United States, Japan, the United Kingdom and the European Union for people living with neovascular or 'wet' age-related macular degeneration and diabetic macular edema. Review by other regulatory authorities is ongoing.<sup>9,14,24-26</sup>

### About Roche in ophthalmology

Roche is focused on saving people's eyesight from the leading causes of vision loss through pioneering therapies. Through our innovation in the scientific discovery of new potential drug targets, personalised healthcare, molecular engineering, biomarkers and continuous drug delivery, we strive to design the right therapies for the right patients.

We have the broadest retina pipeline in ophthalmology, which is led by science and informed by insights from people with eye diseases. Our pipeline includes gene therapies and treatments for geographic atrophy and other vision-threatening diseases, including rare and inherited conditions.

Applying our extensive experience, we have already brought breakthrough ophthalmic treatments to people living with vision loss. Susvimo™ (previously called Port Delivery System with ranibizumab) 100 mg/mL for intravitreal use via ocular implant is the first United States Food and Drug Administration-approved refillable eye implant for neovascular or 'wet' age-related macular degeneration that continuously delivers a customised formulation of ranibizumab over a period of months.<sup>27</sup> Vabysmo® (faricimab) is the first bispecific antibody approved for the eye, which targets and inhibits two signalling pathways linked to a number of vision-threatening retinal conditions by neutralising angiopoietin-2 (Ang-2) and vascular endothelial growth factor-A (VEGF-A).<sup>10,11,24,25</sup> Lucentis® (ranibizumab injection) is the first treatment approved to improve vision in people with certain retinal conditions.<sup>28</sup>

## About Roche

Founded in 1896 in Basel, Switzerland, as one of the first industrial manufacturers of branded medicines, Roche has grown into the world's largest biotechnology company and the global leader in in-vitro diagnostics. The company pursues scientific excellence to discover and develop medicines and diagnostics for improving and saving the lives of people around the world. We are a pioneer in personalised healthcare and want to further transform how healthcare is delivered to have an even greater impact. To provide the best care for each person we partner with many stakeholders and combine our strengths in Diagnostics and Pharma with data insights from the clinical practice.

In recognising our endeavor to pursue a long-term perspective in all we do, Roche has been named one of the most sustainable companies in the pharmaceuticals industry by the Dow Jones Sustainability Indices for the thirteenth consecutive year. This distinction also reflects our efforts to improve access to healthcare together with local partners in every country we work.

Genentech, in the United States, is a wholly owned member of the Roche Group. Roche is the majority shareholder in Chugai Pharmaceutical, Japan.

For more information, please visit [www.roche.com](http://www.roche.com).

All trademarks used or mentioned in this release are protected by law.

## References

- [1] Clinical Trials.gov. A study to evaluate the efficacy and safety of faricimab in participants with macular edema secondary to branch retinal vein occlusion (BALATON) [Internet; cited January 2023]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04740905>.
- [2] Clinical Trials.gov. A study to evaluate the efficacy and safety of faricimab in participants with macular edema secondary to central retinal or hemiretinal vein occlusion (COMINO) [Internet; cited January 2023]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04740931>.
- [3] Tadayoni R, et al. Faricimab in RVO: Results from the BALATON and COMINO phase 3 studies. Presented at: Angiogenesis, Exudation and Degeneration 2023, 10-11 February 2023; Florida, United States.
- [4] Song P, et al. Global epidemiology of retinal vein occlusion (RVO): a systematic review and meta-analysis of prevalence, incidence and risk factors. J Glob Health. 2019;9:010427.
- [5] Jousen AM, et al. Angiopoietin/Tie2 signalling and its role in retinal and choroidal vascular diseases: a review of preclinical data. Eye. 2021;35:1305-1316.
- [6] Yau JWY, et al. Global prevalence and major risk factors of diabetic retinopathy. Diabetes Care. 2012;35:556-64.
- [7] Connolly E, et al. Prevalence of age-related macular degeneration associated genetic risk factors and four-year progression data in the Irish population. Br J Ophthalmol. 2018;102:1691-95.
- [8] Bright Focus Foundation. Age-related macular degeneration: facts and figures [Internet; cited January 2023]. Available from: <https://www.brightfocus.org/macular/article/age-related-macular-facts-figures>.
- [9] Roche data on file.
- [10] Heier JS, et al. Efficacy, durability, and safety of intravitreal faricimab up to every 16 weeks for neovascular age-related macular degeneration (nAMD) (TENAYA and LUCERNE): two randomised, double-masked, phase III, non-inferiority trials. The Lancet. 2022; 399:729-740.

- [11] Wyckoff C, et al. Efficacy, durability and safety of intravitreal faricimab with extended dosing up to every 16 weeks in patients with diabetic macular edema (DME) (YOSEMITE and RHINE): two randomised, double-masked, phase III trials. *The Lancet*. 2022; 399:741-755.
- [12] Wells JA, et al. Faricimab in DME: two-year results from the phase III YOSEMITE and RHINE trials. Presented at: Angiogenesis, Exudation and Degeneration 2022; 11-12 February 2022; virtual.
- [13] Khanani A, et al. Faricimab in nAMD: year 2 efficacy, safety and durability results from the phase III TENAYA and LUCERNE trials. Presented at: 2022 American Society of Retina Specialists Annual Scientific Meeting; 13-16 July 2022; New York City, NY, USA.
- [14] European Medicines Agency. Summary of Product Characteristics, Vabysmo, 2022 [Internet; cited October 2022]. Available from: [https://www.ema.europa.eu/en/documents/product-information/vabysmo-epar-product-information\\_en.pdf](https://www.ema.europa.eu/en/documents/product-information/vabysmo-epar-product-information_en.pdf).
- [15] National Eye Institute. Macular Edema [Internet; cited January 2023]. Available from: <https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/macular-edema#:~:text=What%20is%20macular%20edema%3F,swelling%20and%20prevent%20vision%20loss.>
- [16] Moorfields Eye Hospital, United Kingdom National Health Service Foundation Trust. RVO [Internet; cited October 2022]. Available from: <https://www.moorfields.nhs.uk/condition/retinal-vein-occlusion>.
- [17] Schmidt-Erfurth U, et al. Guidelines for the Management of Retinal Vein Occlusion by the European Society of Retina Specialists (EURETINA). *Ophthalmologica*. 2019;242:123-162.
- [18] Campochiaro P. Molecular pathogenesis of retinal and choroidal vascular diseases. *Prog Retin Eye Res*. 2015;49:67-81.
- [19] Clinical Trials.gov. A study to evaluate the long-term safety and tolerability of Vabysmo in participants with nAMD (AVONELLE-X) [Internet; cited January 2023]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04777201>.
- [20] Clinical Trials.gov. A study to evaluate the long-term safety and tolerability of Vabysmo in participants with DME (Rhone-X) [Internet; cited January 2023]. Available from: <https://clinicaltrials.gov/ct2/show/NCT04432831>.
- [21] Clinical Trials.gov. A study to investigate faricimab treatment response in treatment-naïve, underrepresented patients with DME (ELEVATUM). [Internet; cited January 2023]. Available from: <https://clinicaltrials.gov/ct2/show/NCT05224102>.
- [22] APVRS. Design and Rationale of the SALWEEN Trial: A Phase 3b/4 Study of Faricimab, a Dual Angiopoietin-2 and Vascular Endothelial Growth Factor-A Inhibitor, in Patients With Polypoidal Choroidal Vasculopathy. [Internet; cited January 2023]. Available from: <https://2022.apvrs.org/abstract/?code=200351>.
- [23] Clinical Trials.gov. A Real-World Study to Gain Clinical Insights Into Roche Ophthalmology Products (VOYAGER). [Internet; cited January 2023]. Available from: <https://clinicaltrials.gov/ct2/show/NCT05476926>.
- [24] United States Food and Drug Administration (U.S. FDA). Highlights of prescribing information, Vabysmo. 2022 [Internet; cited October 2022]. Available from: [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2022/761235s000lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2022/761235s000lbl.pdf).
- [25] Medicines and Healthcare products Regulatory Agency (MHRA). MHRA approves faricimab through international work-sharing initiative [Internet; cited October 2022]. Available from: <https://www.gov.uk/government/news/mhra-approves-faricimab-through-international-work-sharing-initiative>.
- [26] Chugai Pharmaceutical Co. Ltd. Chugai obtains regulatory approval for Vabysmo, the first bispecific antibody in ophthalmology, for nAMD and DME [Internet; cited October 2022]. Available from: [https://www.chugai-pharm.co.jp/english/news/detail/20220328160002\\_909.html](https://www.chugai-pharm.co.jp/english/news/detail/20220328160002_909.html).
- [27] U.S. FDA. Highlights of prescribing information, Susvimo. 2006 [Internet; cited October 2022]. Available from: [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2021/761197s000lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/761197s000lbl.pdf).
- [28] U.S. FDA. Highlights of prescribing information, Lucentis. 2006 [Internet; cited October 2022]. Available from: [https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2017/125156s114lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/125156s114lbl.pdf).

### **Roche Group Media Relations**

Phone: +41 61 688 8888 / e-mail: [media.relations@roche.com](mailto:media.relations@roche.com)

**Hans Trees, PhD**

Phone: +41 79 407 72 58

**Nathalie Altermatt**

Phone: +41 79 771 05 25

**Karsten Kleine**

Phone: +41 79 461 86 83

**Nina Mähltz**

Phone: +41 79 327 54 74

**Dr. Barbara von Schnurbein**

Phone: +41 79 699 97 44

**Sileia Urech**

Phone: +41 79 935 81 48

### **Roche Investor Relations**

**Dr. Bruno Eschli**

Phone: +41 61 68-75284

e-mail: [bruno.eschli@roche.com](mailto:bruno.eschli@roche.com)

**Dr. Sabine Borngräber**

Phone: +41 61 68-88027

e-mail: [sabine.borngraeber@roche.com](mailto:sabine.borngraeber@roche.com)

**Dr. Birgit Masjost**

Phone: +41 61 68-84814

e-mail: [birgit.masjost@roche.com](mailto:birgit.masjost@roche.com)

**Dr. Gerard Tobin**

Phone: +41 61 68-72942

e-mail: [gerard.tobin@roche.com](mailto:gerard.tobin@roche.com)

### **Investor Relations North America**

**Loren Kalm**

Phone: +1 650 225 3217

e-mail: [kalm.loren@gene.com](mailto:kalm.loren@gene.com)