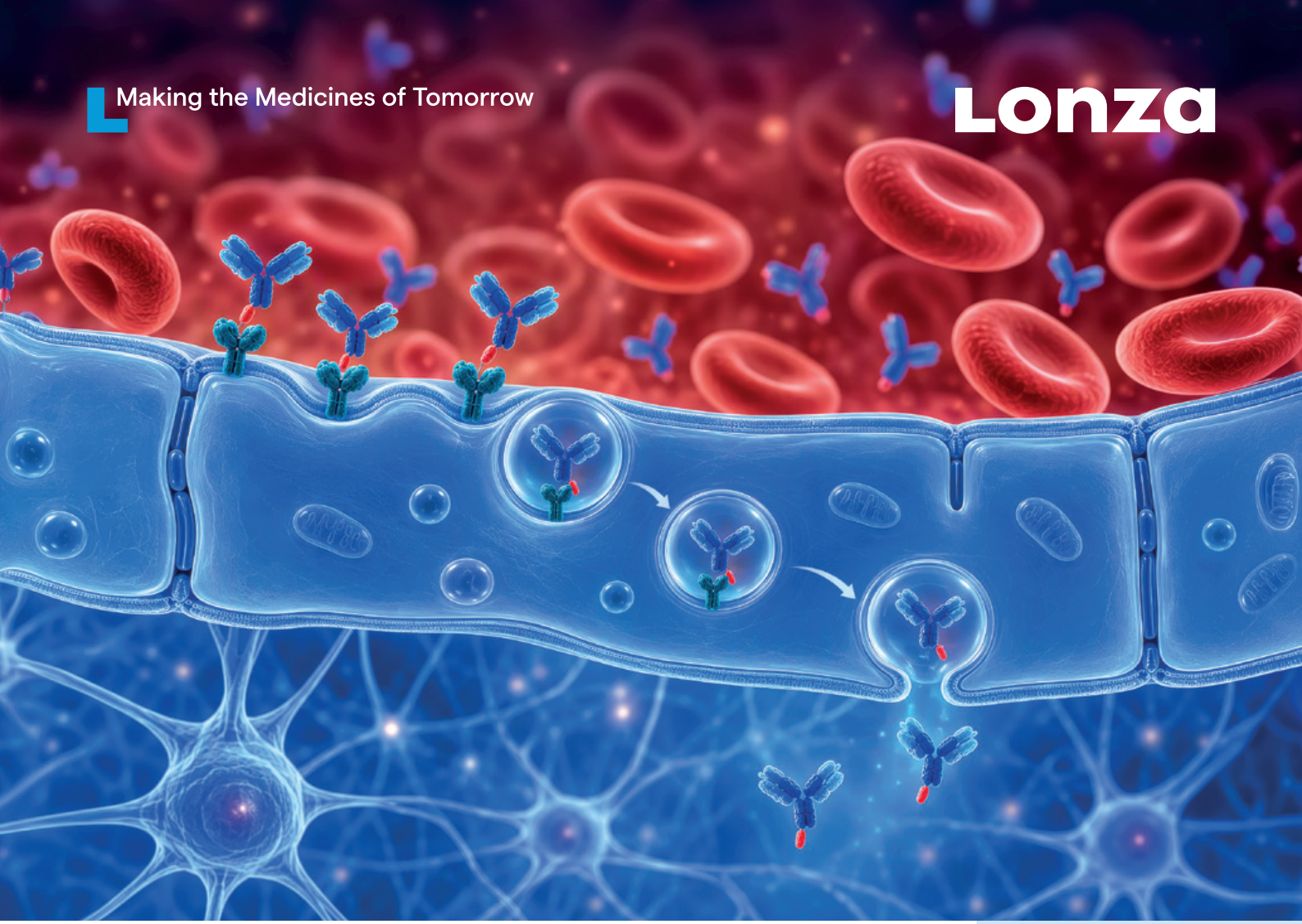
Making the Medicines of Tomorrow

Lonza



CNS drug delivery engineered around your molecule

NeuroPortal™ TfR1-Mediated Blood-Brain Barrier Drug Delivery Platform

Can enough of your therapeutic reach the brain to achieve desired effect?
While the blood-brain barrier (BBB) serves a critical protective function, it remains one of the greatest challenges in biologic drug development. Even highly potent molecules may fail to achieve sufficient exposure in the brain to deliver meaningful therapeutic benefit, while generating excessive exposure elsewhere in the body that can lead to unwanted side effects.

A well-established approach is to leverage receptor-mediated transport through the endogenous transferrin receptor (TfR1) pathway to facilitate delivery of biologics across the BBB. A pre-engineered panel of TfR1-binding VHH molecules with distinct affinity profiles is available to help determine the optimal balance between receptor engagement, BBB transport, and brain exposure for your therapeutic.

Affinity-tunable TfR1-targeting VHH binders designed to enable active transport of biologics across the blood–brain barrier

Unlock CNS access

Precision through affinity tuning

Built for flexibility

Expert development support

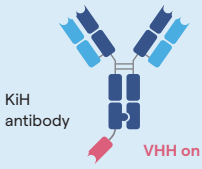
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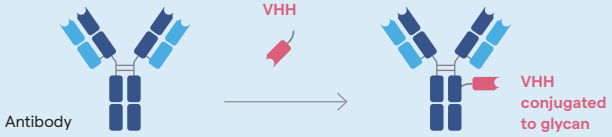
Unlock your BBB transport with NeuroPortal™ TfR1 Technology

NeuroPortal™ TfR1-binding single-domain antibodies (VHHs) are designed to support receptor-mediated transport of biologics across the blood–brain barrier.

Genetic fusion: TfR1-binding VHHs can be incorporated into the molecular design of a new antibody or protein therapeutic.



Bioconjugation: TfR1-binding VHHs can be attached to an existing antibody without the need for antibody re-engineering.



Combined approach: A genetically fused BBB transporter can be combined with a conjugated payload.

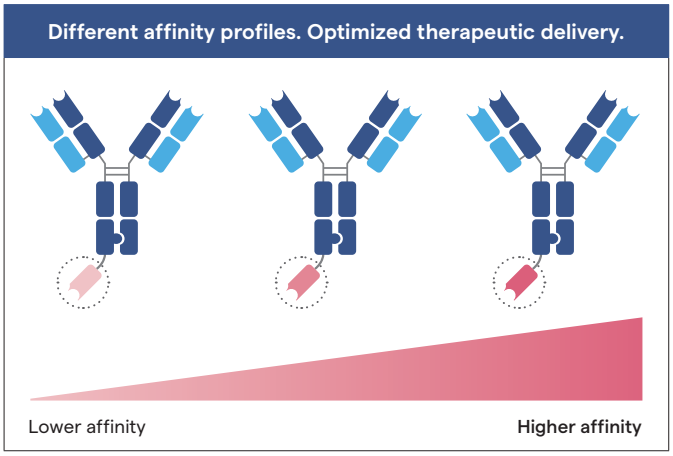


Precision through affinity tuning

Stronger receptor binding does not necessarily mean greater brain exposure. NeuroPortal™ TfR1 technology offers VHH variants with different binding affinities so developers can evaluate which profile best suits their molecule and delivery objectives. This allows you to identify the optimal balance between receptor engagement, BBB transport, and brain exposure for their therapeutic and delivery objectives.

A tailored approach for your CNS program

Every CNS program has unique delivery requirements. Lonza's structured evaluation packages provide a fast and flexible way to assess genetic fusion, bioconjugation, and combined approaches with your drug candidate, helping you identify the optimal path forward for BBB transport and brain exposure.



NeuroPortal™ platform allows you to evaluate different TfR1 binding affinity profiles to explore the valance between receptor engagement, BBB transport and brain exposure.

Discuss your ideas, available antibodies, target and CNS delivery objectives with our experts to explore an appropriate evaluation approach.

Scan or click
the **QR code** to learn more.

Contact us
Email: **licensing@lonza.com**

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