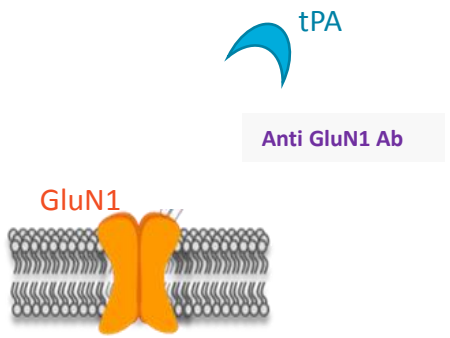
SELECTED OPPORTUNITIES IN NEUROSCIENCE

Antibody Protecting from BSCB leakage induced CNS damages (BIO13193)

ANTIBODY PROTECTING FROM BSCB LEAKAGE INDUCED CNS DAMAGES (BIO13193)

Product factsheet

- **Product:** Anti-GluN1 monoclonal antibody (Glunomab)
- **Mechanism:**
  - tPA positively regulates NMDAR through its interaction with GluN1 subunit in the extracellular compartment.
  - anti-GluN1 antibody prevents tPA binding on GluN1 subunit of NMDAR
  - BSCB opening in Multiple sclerosis and EAE allows CNS entry of neurotoxic elements (fibrinogen, …)
- **Phase of development:** in vivo PoC
  - The anti-GluN1 monoclonal antibody (**Glunomab**) prevents tPA/NMDAR induced BBB/BSCB opening
  - Glunomab is protective in a multiple sclerosis mouse model
- **Potential applications:** multiple sclerosis, neurodegenerative diseases
- **Patent:** WO2014187879 published on Jan 22, 2015
- **Ref:**
  - Macrez et al. Brain 2016
  - Reijerkerk et al.J Neurochem. 2010
  - Gaberel et al. Neuropharmacology 2013
  - Macrez et al. Stroke 2011



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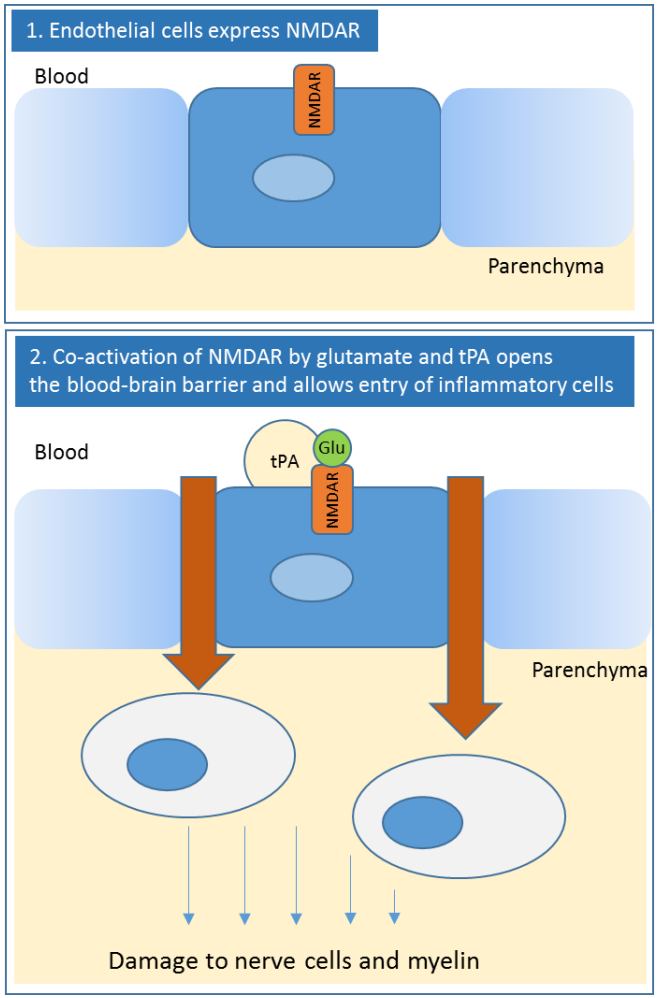
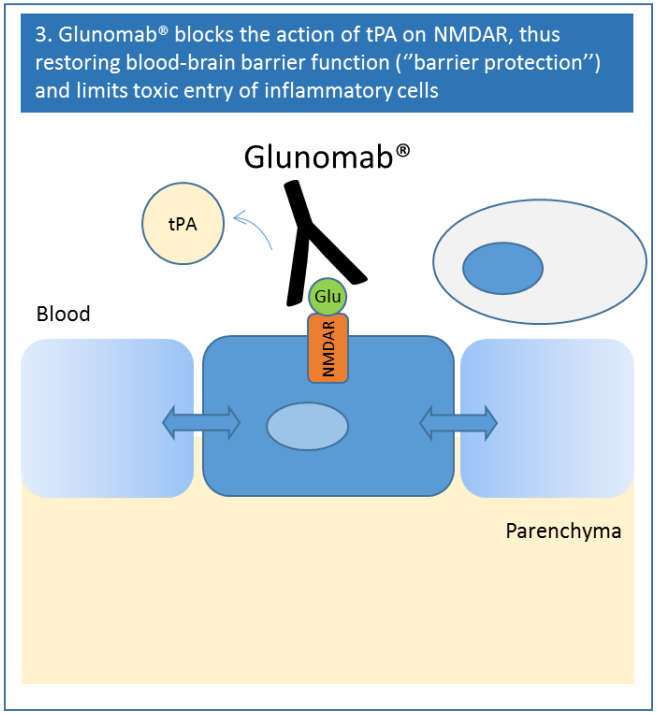
Rationale in Multiple Sclerosis





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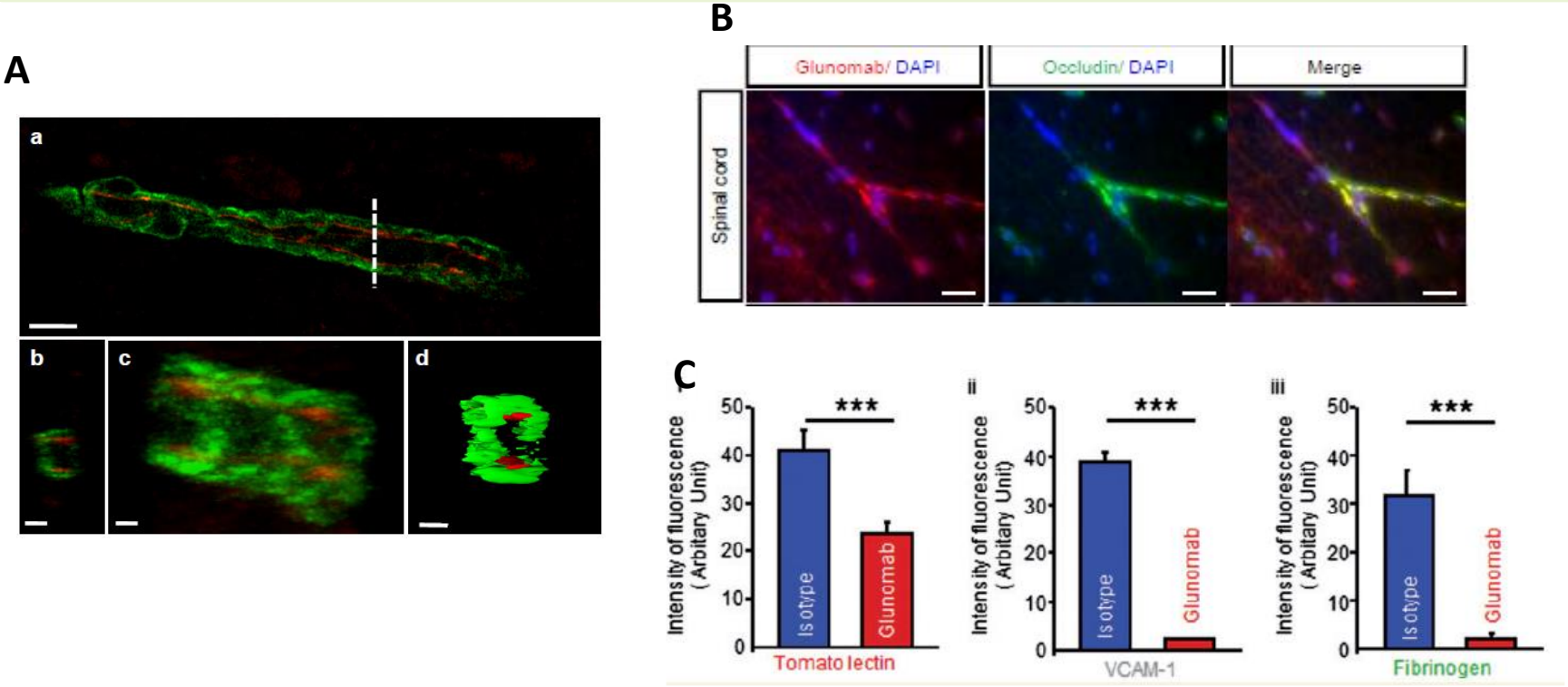
Rationale in Multiple Sclerosis

NMDARs localized at the luminal surface of endothelial cells can be blocked by Glunomab to prevent the blood-spinal cord barrier leakage



A: Confocal analysis of Glunomab staining (red) location in a collagen labeled (green) white matter capillary
B: Immunostaining for Glunomab (in red) and occludin (green) in the spinal cord of mice showing colocalization at tight junctions.
C: Glunomab limits BSCB permeabilisation: Quantification of immunofluorescence intensity in spinal cord tissue

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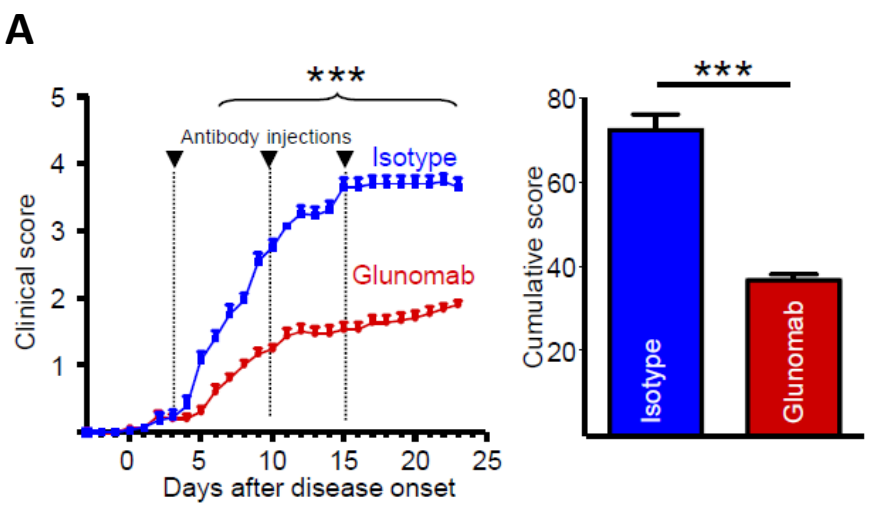
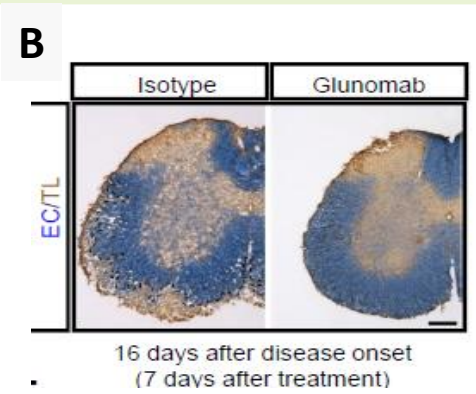
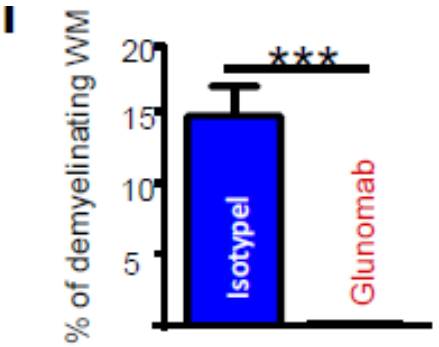
Rationale in Multiple Sclerosis

Disease progression and demyelination is prevented by Glunomab







Glunomab stops the progression of MOG-EAE in mice.
A: Clinical scores of MOG-EAE mice injected with Glunomab (160 µg, red) or control isotype (red) 3, 10 and 15 days after the onset of symptoms. Glunomab drastically reduces EAE clinical symptoms
B: Glunomab dramatically reduces demyelination within inflammatory lesions. Illustrative picture (upper panel) of spinalcord of isotype and glunomab injected mice and quantification (lower panel).

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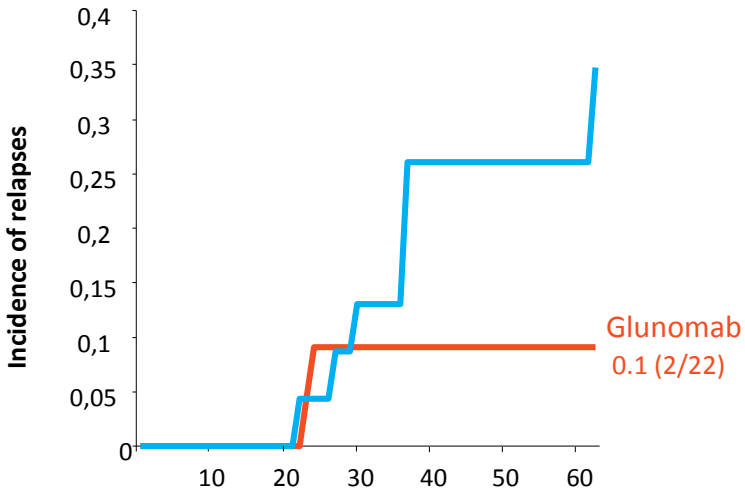
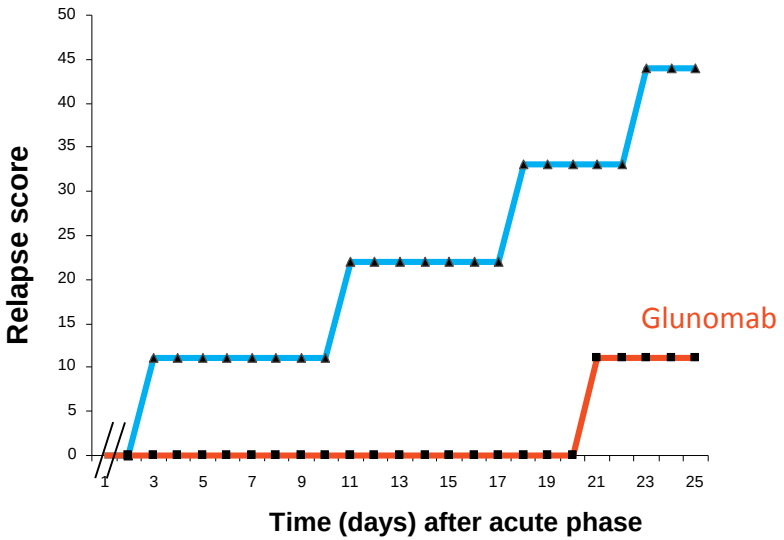
Rationale in Multiple Sclerosis

Glunomab has a therapeutic effect on relapses of plp-EAE mice





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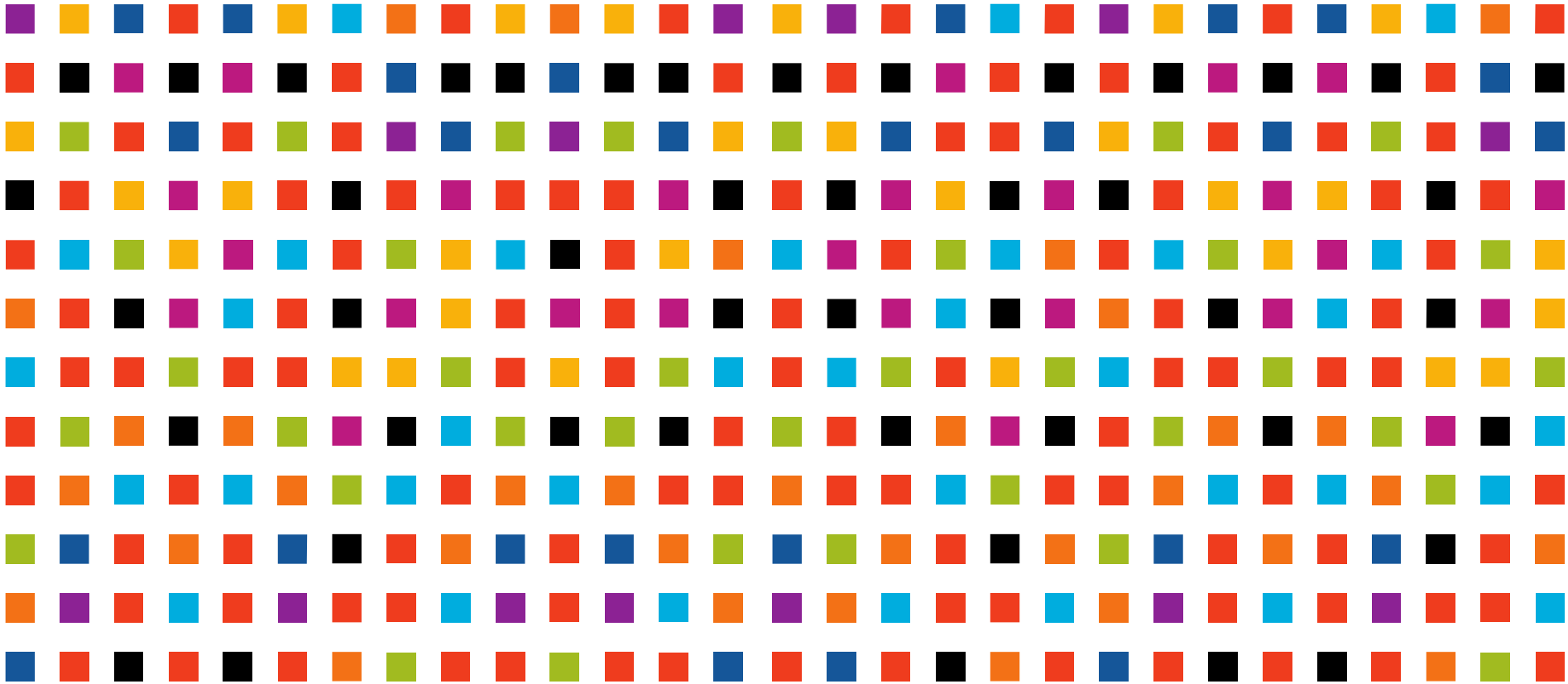

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