



## BLOOD-NERVE BARRIER TARGETING CONJUGATES AND METHODS OF USE

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### The Invention

UW-Madison researchers have identified new antibodies and related single-chain antibody fragments (scFvs) that bind and transport across the brain vasculature. These promising antibodies were discovered using in vivo phage screening methods in combination with the inventors' previously disclosed iPSC-derived BBB models. The scFvs selectively bind to brain endothelial cell membranes and can be conjugated to an active payload (e.g., drug, antisense oligonucleotide, etc.).

Recognizing the need for treatments for peripheral neuropathies (e.g., Charcot-Marie-Tooth disease (CMT)) and malignancies of Schwann cells (e.g., schwannomas and neurofibromatosis), the researchers investigated the utility of certain scFvs in targeted delivery to the peripheral nervous system (PNS). In so doing they identified scFv17 as having particularly desirable characteristics for targeted and localized delivery of an active payload to Schwann cells. The conjugated compound (i.e., payload + scFv17) was able to target the blood-nerve barrier (BNB) and cross into the PNS, specifically the peripheral nerve epineurium, where it localized to Schwann cells. As a result, scFv17, and possibly others, could be leveraged in the development and delivery of therapeutics to treat CMT, schwannomas, and neurofibromatosis.

### Additional Information

#### For More Information About the Inventors

- [Eric Shusta](#)
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#### Related Technologies

- [See WARF reference number P200063US02 for related technology "HUMAN BLOOD-BRAIN BARRIER TARGETING ANTIBODIES"](#)

#### Tech Fields

- [Drug Delivery : Other drug delivery technologies](#)

For current licensing status, please contact Jennifer Gottwald at [jennifer@warf.org](mailto:jennifer@warf.org) or 608-960-9854