

## PNS-3D Services

The only human peripheral nerve model with electrophysiological readouts of nerve conduction velocity for functional evaluation of peripheral nerve safety and neuroprotective efficacy.

## Overview

PNS-3D incorporates human sensory neurons and Schwann cells in a 3D microenvironment with embedded electrode arrays, forming 10 mm-long myelinated nerve fibers. Longitudinal electrophysiology and morphology endpoints support characterization of peripheral nerve dysfunction and neuroprotective effects over time.

PNS-3D Services provide human-relevant insights into peripheral nerve safety and drug efficacy across therapeutic modalities, including small molecules and antibody-drug conjugates. Studies can be tailored to your program stage, research question, and decision criteria, from early safety profiling to neuroprotection efficacy testing and custom peripheral nerve workflows.

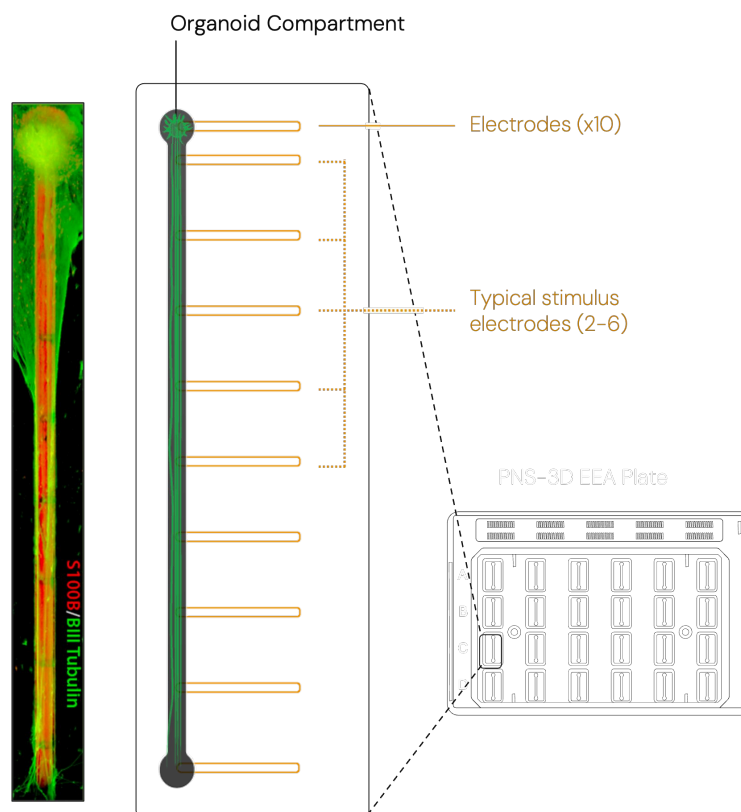


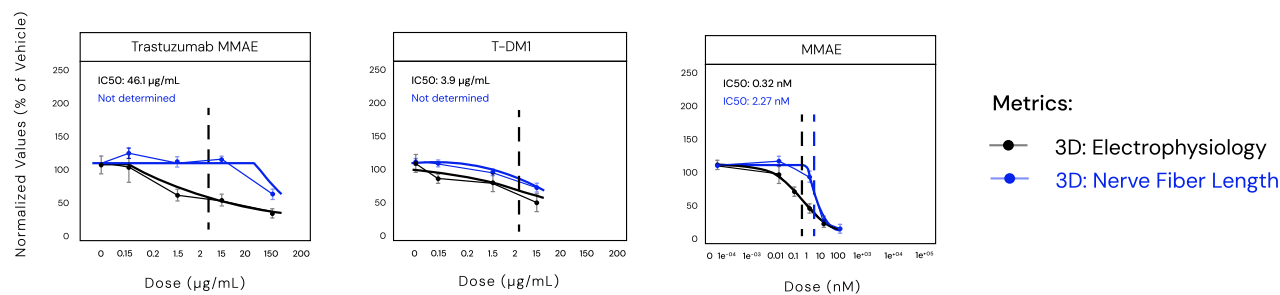
Diagram of the PNS-3D embedded electrode array plate, showing organoid compartment from which myelinated nerve fiber tracts extend across ten electrodes for electrophysiological recording.

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## PNS Toxicity

Predict peripheral neuropathy risk by measuring drug-induced changes in human peripheral nerve conduction and structure.

PNS-3D helps identify peripheral neuropathy risk before clinical testing using human sensory neurons and Schwann cells, integrating longitudinal electrophysiology and morphology measurements for sensitive detection of peripheral nerve dysfunction.



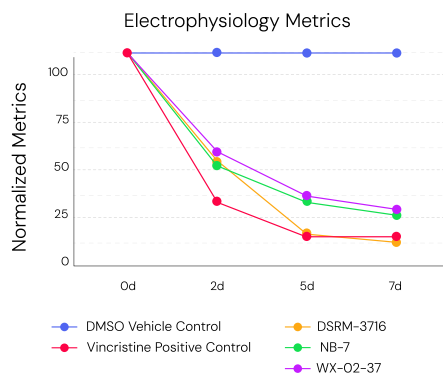
PNS-3D dose-response curves across multiple antibody-drug conjugates, showing detection of functional decline (electrophysiology) at lower doses than morphological decline (nerve fiber length).

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## Peripheral Neuroprotection

Rank neuroprotective candidates by their ability to prevent chemotherapy-induced neuropathy.

PNS-3D enables rank ordering of neuroprotective candidates by measuring protection against chemotherapy-induced nerve dysfunction. Electrophysiological and morphological endpoints reveal whether candidates preserve peripheral nerve function and structure, helping prioritize therapies with the strongest protective effect.

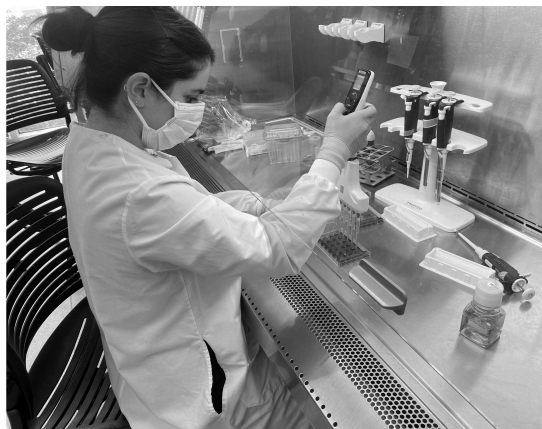


Representative electrophysiology showing differential neuroprotective effects over time, with NB-7 and WX-02-37 preserving function longer than DSRM-3716 following vincristine-induced injury.

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## Custom Services

Partner with 28bio scientists to design custom PNS services beyond standard assay offerings. From tailored endpoint selection and study designs to disease model development, our team helps translate complex research objectives into human-relevant PNS studies that generate decision-ready data.



## Technical Specifications

Specification	Details
Organoid Size	10 mm nerve length
Cell Composition	Human iPSC-derived sensory neurons and primary Schwann cells
Validated Assay Window	Weeks 8+ of maturation
Assay	Electrophysiology, nerve degeneration (morphology phase image analysis), high-content imaging, and transcriptomic profiling.

## Ordering Information

PNS-3D Organoid Standard Services provide a preclinical 3D nerve model for evaluating peripheral neuropathy, neuroprotection, and electrophysiological function, conducted at 24-well scale. Contact us to learn more.