

## In vitro Model for Testing Efficacy and Neurotoxicity of Neurotherapeutic

**Track Code:** 2020-KNIP-68758

**Categories:**

- Biotechnology
- Pharmaceuticals

**Keywords:**

- Biotechnology
- Blood Brain Barrier
- Drug Development
- In Vitro Screening
- Neurite Inhibition
- Neurite Outgrowth
- Neuron Viability
- Neurotherapeutic
- Neurotoxicant
- neurovascular unit
- Pharmaceuticals
- Toxicity

Researchers at Purdue University have developed a physiologically relevant in vitro screening tool combining blood-brain barrier (BBB) permeability testing with subsequent neuronal response to evaluate the effects of permeation on observed neuroactivity in one assay. Clinical translation of neurotherapeutics significantly lags behind the rapid increase in neurological disorders seen worldwide. One of the primary hurdles to neurotherapeutic development is the blood brain barrier (BBB). Others have developed in vitro assays to emulate the BBB; however, the result of these assays does not translate to real efficacy, because the assays do not incorporate downstream neuroactivity or associated neurotoxicity as the Purdue technology does. Preliminary tests of the Purdue technology revealed it correctly rank-orders compounds compared to known parameters. The technology is versatile and can be adapted to utilize multiple cell types. The technology promises to reduce the resources needed for ranking hit and lead candidate compounds in the development of new neurotherapeutic agents.

**Advantages**

- Promises to reduce time and cost associated with pharmaceutical development
- Flexible system: adaptable to multiple cell types
- Increased translational efficiency

## Potential Applications

- Neurotherapeutic drug development
- Drug Discovery and Development

### **People:**

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### **Intellectual Property:**

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