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# Widespread functional opsin transduction in the rat cortex via convection-enhanced delivery optimized for horizontal spread

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## Highlights

1. Determined the protocol for optogenetic transduction of the rat cortex (optimized for horizontal spread) by using the convention-enhanced delivery technique
2. Achieved widespread functional opsin expression in the rat motor cortex
3. Obtained functional motor maps by optical stimulation in the transduced motor cortex

## Abstract

### Background

Widespread opsin expression in the cortex of rats, where transgenic models have not been established, is not practical to achieve with the traditional diffusion-based virus transduction methods (DBD).

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