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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).