



Principal Investigator

The University of Tokyo **Hideaki Kato**

Adopted Theme

Creating innovative therapies for treatment-resistant disorders through optogenetic technologies

Subject of Research

Creating innovative therapies for treatment-resistant disorders through optogenetic technologies

Overview



We will rapidly identify and optimize photoreceptors with the ideal properties for each disease and translate them into practical applications.

In this project, we aim to develop optogenetic therapeutics that deliver optimal performance against various refractory diseases by leveraging our proprietary resources and high-throughput development and optimization technologies for optogenetic tools, with an emphasis on channelrhodopsins, a light-sensitive ion channels. Using the molecules we develop, we plan to achieve proof-of-concept in mouse models and rapidly establish a startup company.

Business Models (when applying)

By leveraging our proprietary resources and high-throughput development and optimization technologies for optogenetic tools, we will develop and deliver optogenetic therapeutics that exhibit optimal performance against various refractory diseases.

Activity Planning (when applying)

Our research and development plan includes the following activities:

1. Development of ChRmine3.0

We will develop ChRmine3.0, an improved version of ChRmine—the channelrhodopsin discovered by our team that currently exhibits the highest light sensitivity and channel activity.

2. Achieving Mouse Proof-of-Concept (POC)

By using the already developed ChRmine2.0 along with the new ChRmine3.0, we aim to obtain proof-of-concept in mouse models for two types of refractory diseases.