CASE STUDY

Gene Therapy

Background and Problem

Allucent's client requested support to bring an AAV gene therapy for a rare neurodegenerative disease into the clinic for a Phase 1b study in patients. Dose scaling from pharmacology and toxicology studies by brain volume alone for administration directly into the brain by MRI-Guided Convection-Enhanced Delivery led to human equivalent doses that lacked a margin of safety.

Our Solution

Allucent evaluated the preclinical data and developed a PK/PD model that related dose to brain distribution of vector genome, transduction of brain tissue, and transgene expression to preclinical safety and efficacy outcomes. With this approach, differences in transduction efficiency between the rodent pharmacology studies and the NHP toxicology studies became apparent and revealed a large safety margin. A FIH (first-in-human) starting dose and dose escalation strategy with potential clinical benefit for patients, in addition to safety, for the Phase 1b study was provided to support the IND and Clinical protocol.

Outcome

The IND and clinical protocol submitted to the FDA were approved for initiation of the clinical study. The FDA agreed with the starting dose and dose escalation rationale to enable the Phase 1b study to start.

Services

Allucent has broad and deep expertise and experience to support the Discovery, Preclinical and Clinical Development of Cell and Gene Therapy Products. From translational modeling and simulation as presented here to Clinical Pharmacology, Regulatory Consulting, and conducting Clinical Trials, Allucent has the scope to help sponsors bring their CGT product into the clinic and then forward to marketing approval.

Allucent®
Helping bring new therapies to light

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