Trailhead Biosystems

PRODUCT DATASHEET

iPSC-Derived OPCs and Pre-Myelinating Oligodendrocytes

Trailhead Biosystems, Inc. offers committed iPSC-derived oligodendrocytes, providing the opportunity for investigations of **functional myelination** in **neural co-culture**, **drug discovery for leukodystrophies**, and **human disease modeling**, and more.

Cells of the oligodendrocyte lineage play a key role in multiple disease states and serve as the major insulating cell type of the brain. Oligodendrocyte loss is observed in multiple sclerosis and is primarily due to autoimmune destruction, and this loss of oligodendrocyte number, or function, can lead to leukodystrophies; a typically fatal. condition, prefigured by loss of sensory functions and motor activity.

Using HD-DoE™*, we created a multistage protocol resulting in rapid (**20 days**) and homogenous induction of OPCs capable of adopting a committed oligodendrocyte fate, expressing terminal markers including CNPase and O4 (Fig. 1).

*HD-DoE™ is a quality-by-design compliant process that explores a high dimensional space for criticality and interactions underpinning cell fate control.

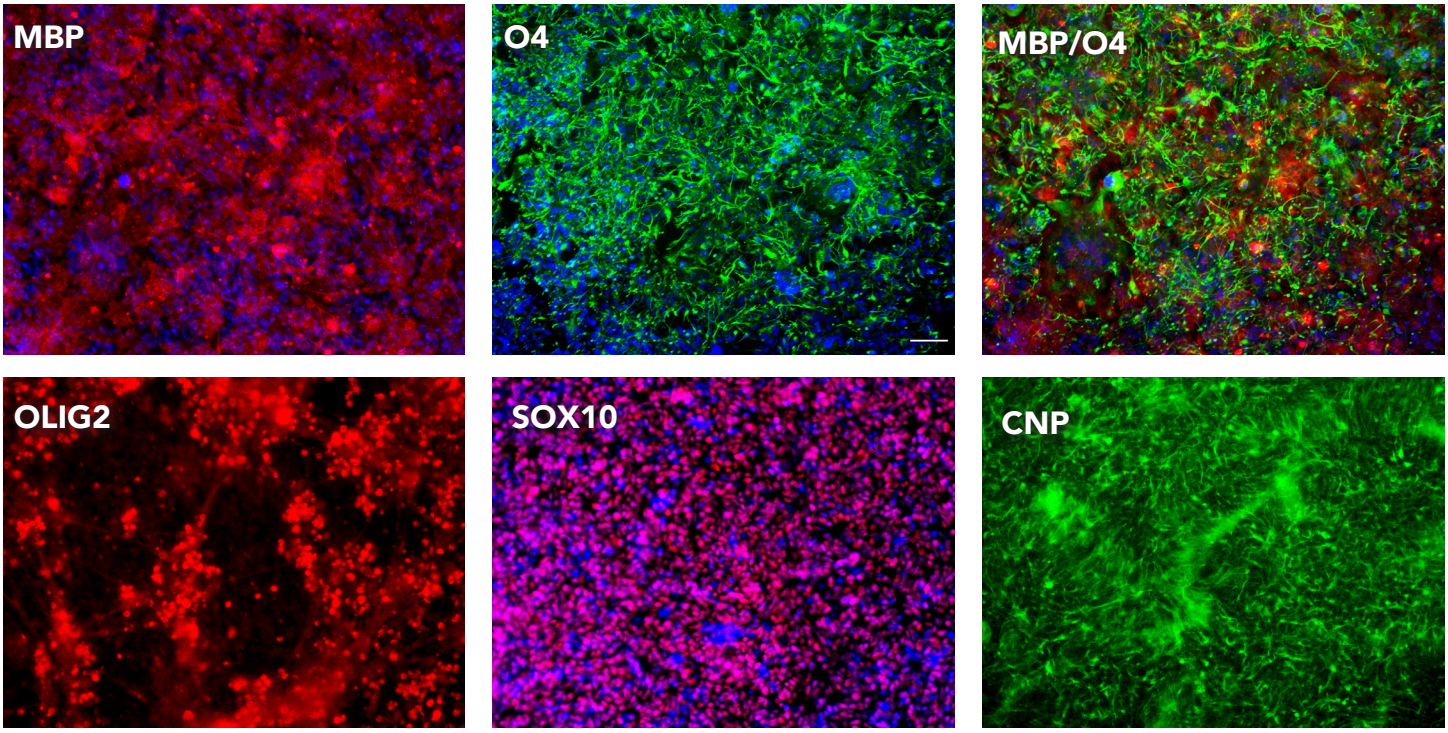

Figure 1: iPSC-derived pre-myelinating oligodendrocytes expressing oligodendroglial transcription factors OLIG2 and SOX10 and terminal markers O4 and CNPase. Scale bar is 100um.

Results from HD-DoE™ Approach

Published protocols for oligodendrocyte induction from pluripotency are typically lengthy (60-90 days) and results in mixtures of neuronal cells and oligodendrocytes.

Using HD-DoE™, we created a multistage protocol for the rapid (20 days) and homogenous induction of OPCs which are capable of effectively adopting a committed oligodendrocyte fate expressing terminal markers including CNPase and express the O4 antigen (Fig. 1).

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