

Glial Cell Type Composition in a 3D Model of the Central Nervous System #183

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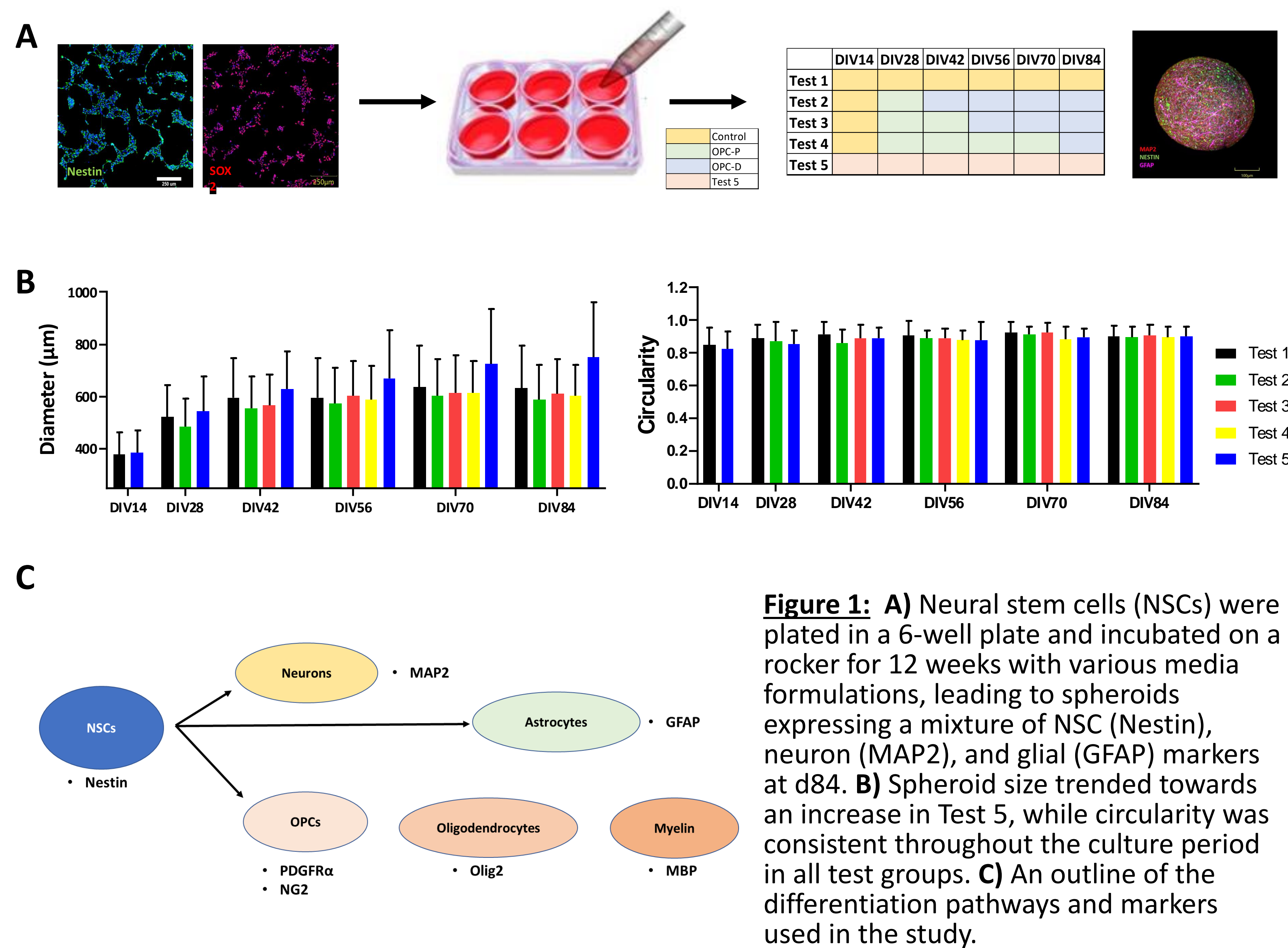
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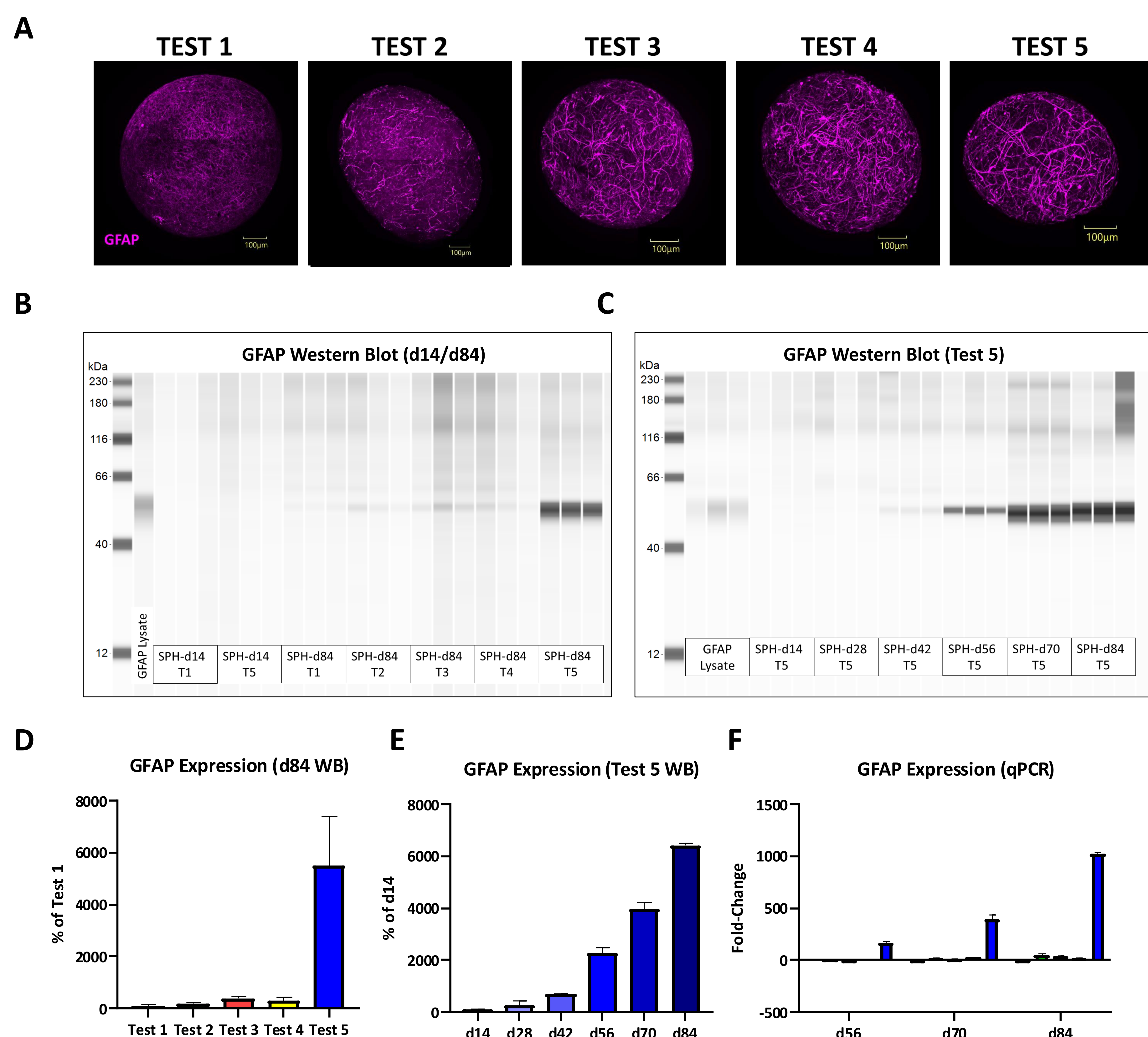
Overview

We successfully cultured iPSC-derived neurons for 12 weeks using variable growth factor formulations, reaching variable levels of glial differentiation. Differentiation of astrocytes, oligodendrocyte precursor cells (OPCs), and oligodendrocytes were assessed via the presence of cell-type specific markers in IHC, qPCR, and Western blot. Of the five media timelines tested, Test 5 proved to have the highest abundance of all glial cell types, with considerable evidence of glia as early as DIV42.

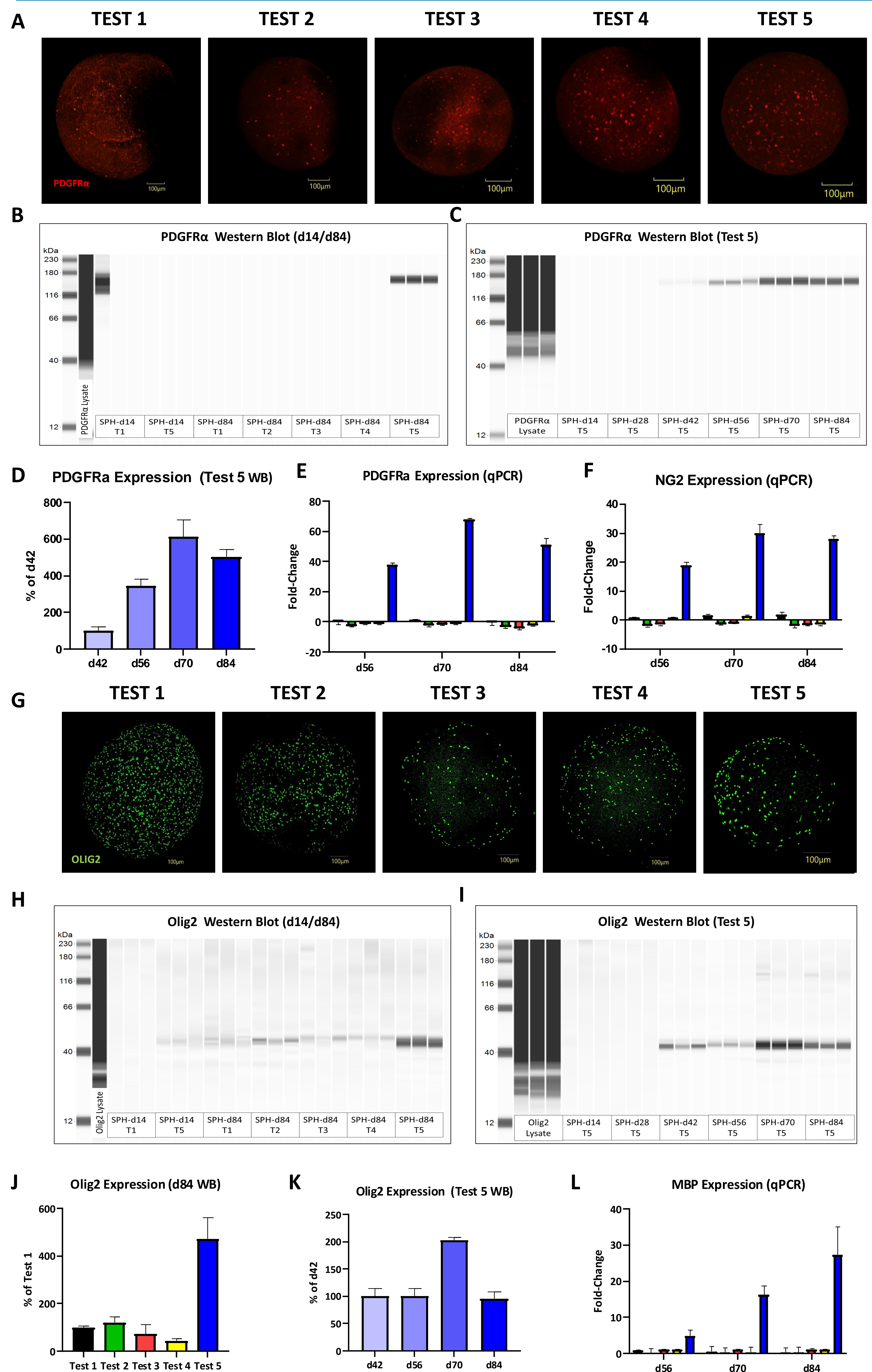
Methods



Astrocyte Differentiation



OPC and Oligodendrocyte Differentiation



Conclusions

- Test 5 shows a peak in OPC and non-myelinating oligodendrocyte markers at DIV70, and a steady increase in astrocyte and myelin markers across 12 weeks of development.
- Future work will aim to detect the effects of demyelinating and promyelinating drugs on oligodendrocyte development and differentiation.