

# Identification of a novel neural stem cell type

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In culture, neural stem cells (NSCs) can readily differentiate into neuronal and glial subtypes, but their ability to differentiate into region-specific neuronal cell types is limited. Dr. Studer and colleagues isolated and cloned a population of neural rosette cells (R-NSCs), which have an expanded neuronal subtype differentiation potential.

Dr. Studer and colleagues demonstrate that R-NSCs can differentiate along both the CNS and PNS lineages, and are capable of in vivo engraftment. Furthermore, the researchers identified biomarkers unique to the R-NSC type, as well as signaling pathways required for the maintenance of the R-NSC type.

“Our data suggest that R-NSCs may represent the first neural cell type capable of recreating the full cellular diversity of the mammalian nervous system. As such, R-NSCs should have a major impact for applications in regenerative medicine and have the potential to become the “embryonic stem cell equivalent” of the nervous system,” explains Dr. Studer.

Source: Cold Spring Harbor Laboratory

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