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Brainy stem cells

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The search is on to identify and locate [neural stem cells](#) (NSCs). In the August 16 issue of [Nature](#), Rodney Rietze and colleagues at [The Walter and Eliza Hall Institute for Medical Research](#) Australia, report the isolation of a pluripotent stem cell population from mouse brains (*Nature* 2001, **412**:736-739). They performed a series of enrichment steps to purify NSCs from the ependymal and subventricular zones of the lateral ventricular walls. Flow cytometry was used to select a population expressing low amounts of peanut agglutinin (PNAlo) and heat-stable antigen (HSAlo). Although these cells represent just 0.27% of the unsorted population, they contain predominantly NSCs and account for 63.2% of the total NSC activity. The neural stem cells gave rise to neurospheres containing neurons, astrocytes and oligodendrocytes. Rietze *et al.* demonstrate that this cell population is severely reduced (6-fold) in the [querkopf](#) mutant mouse strain which exhibits stem cell deficiency. The isolated NSC could differentiate into neurons *in vivo* and into non-neural cell types *in vitro*. Thus, pluripotent stem cells (PNAlo HSAlo netrin+) can be efficiently isolated from the subventricular zone of the forebrain.

References

1. Generation of neurons and astrocytes from isolated cells of the adult mammalian central nervous system.
2. *Nature* , [<http://www.nature.com>]
3. The Walter and Eliza Hall Institute for Medical Research , [<http://www.wehi.edu.au>]
4. Querkopf, a MYST family histone acetyltransferase, is required for normal cerebral cortex development.