

Rat hair cells found to be true stem cells

October 4 2005

Cells inside hair follicles are stem cells able to develop into the cell types needed for hair growth and follicle replacement, Swiss researchers claim.

The discovery came through research using rats, conducted by Yann Barrandon of the Swiss Federal Institute for Technology at Lausanne, Switzerland, and colleagues.

The scientists said rat whiskers, as most hair in mammals, grow in stages, with each whisker sprouting from a single follicle underneath the skin.

After a time, the hair bulb wears out, and special cells within the old follicle differentiate to build a new one. The researchers examined those special cells in the rat hair follicle to determine if they were adult stem cells.

They isolated single cells from the follicles of rat whiskers and grew them in culture for 140 generations. They then transplanted the cells into the skin of mice.

The cells were shown to form into new, complete follicles. The presence of a marker in each of the cell types in the new follicle verified the lineage from the transplanted cell. In addition, the cells expressed genes characteristic of stem cells.

The research appears in the online early edition of the National Academy of Sciences.

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