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# Uncovering the In Vivo Source of Adult Neural Crest Stem Cells

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## Abstract

Some late embryonic and adult postmigratory neural crest-derived cells (NCDCs) from diverse tissues were shown to grow as multipotent neurospheres. Neural crest stem cells (NCSCs) contained in these spheres were found to give rise not only to neuroectodermal derivatives but also to some of the progeny of the other embryonic germ layers. In this review, evidences regarding the in vivo properties of NCDCs contributing to NCSCs are discussed. Even though in many cases the final proof for the phenotype identity of in vivo cells generating NCSCs is lacking, some evidences suggest that such postmigratory NCDCs would differ from neural crest cells. The streamline of this review follows a historical perspective that helps understanding the advancements in knowledge of this field of research and highlighting its importance, in an appropriate context. Finally, the potential for regenerative medicine purpose of NCDCs and more specifically of tissues that can be a source of peripheral glia progenitors in the adult is underlined.

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