

Cell Fate

Principal investigator(s) and affiliation(s), contact information

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Members of the research group

Doctoral candidates:

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Description of the scientific aims

We take an interdisciplinary and collaborative approach combining cell and molecular biology and in vivo physiology with nanotechnology, tissue engineering, computational models with to understand the basic molecular principles of signaling mechanisms regulating cell fate and organization during development and disease. The ultimate goal is to obtain knowledge and technology to support novel therapeutic approaches in cancer and regenerative therapy.

Selected publications 2010-

1. Rosenholm JM, Gulin-Sarfraz T, Mamaeva V, Niemi R, Özliseli E, Desai D, Antfolk D, von Haartman E, Lindberg D, Prabhakar N, Näreoja T, Sahlgren C. Prolonged dye release from mesoporous silica-based imaging probes facilitates long-term optical tracking of cell populations in vivo. *Small*, 2015, in press.
2. Sjöqvist M, Antfolk D, Ferraris S, Rraklli V, Granqvist C, Antila C, Mutvei A, Imanishi SY, Holmberg J, Jin S, Eriksson JE. Urban Lendahl and Cecilia Sahlgren. aPKC regulates Notch receptor routing and activity in a Notch signalling dependent manner. *Cell Res*, 24(4):433-50, 2014.
3. Wittig R#, Rosenholm J, von Haartman E, Hemming J, Genze F, Bergman L, Simmet T, Linden M, Sahlgren C#. Active targeting of mesoporous silica drug carriers enhances gamma-secretase inhibitor efficacy in an in vivo model for breast cancer. *Nanomedicine*, 9(7):971-87, 2014.
4. Wilhelmsson, UM*, Faizy M, de Pablo FY*, Sjöqvist M, Andersson D*, Widestrand A, Potokar M, Stenovec M, Smith PL, Shinjyo N, Pekny T, Zorec R, Ståhlberg A, Pekna M, Sahlgren C, Pekny M. Astrocytes negatively regulate neurogenesis through the Jagged1-mediated notch pathway. *Stem Cells*, 30(10):2320-9, 2012.
5. Landor SK, Mamaeva V, Mutvei A, Jin S, Busk M, Borra R, Grönroos TJ, Kronqvist P, Lendahl U, Sahlgren CM. Hypo- and hyperactivated Notch signaling resets cellular metabolism in breast tumor cells by distinct mechanisms. *PNAS*, 108(46):18814-9, 2011.