

BIOSKETCH FOR AGNETE KIRKEBY

Website: [Creative Environment MoDeNT](#)

AIM OF RESEARCH

- Developing GMP-compliant hESC-based cell therapy for Parkinson's Disease
- Understanding and controlling neural patterning of pluripotent cell
- Studying human-specific brain development
- Developing advanced 3D culture systems with microfluidic gradients to mimic human neural development from hESCs

EDUCATION AND POSITIONS

1996-2000: **High school degree** from Horsens Statsskole (Denmark)

2000-2003: **Bachelors degree in Biochemistry** at the University of Copenhagen, Faculty of Science

2003-2006: **Masters degree in Human Biology** from the University of Copenhagen, Faculty of Health Sciences. Masters project at H. Lundbeck A/S: *Neuroprotective effects of EPO and derivatives*

2006-2009: **Ph.D degree:** Performed at Sloan Kettering Institute, New York, University of Copenhagen and H. Lundbeck A/S. Title: *Studying the effects of low oxygen on stem cells.*

2009-2013: **Postdoctoral position:** Lund University, Dept. Developmental and Regenerative Neurobiology. *Development of a stem cell therapy for Parkinson's Disease patients.*

2014-now: **Associated researcher:** Permanent position, Lund University, Dept. Developmental and Regenerative Neurobiology.

PUBLICATION RECORD

- 9 original articles
- 2 review articles and 1 book chapter
- >650 total citations

PATENTS

- In vitro model and device for culturing of stem cell-derived neural cells under microfluidic gradients. *Swedish patent pending 2014, ref #P10646SE00. Applicants: Agnete Kirkeby (35%), Thomas Laurell (25%), Axel Tojo (25%), Malin Parmar (15%)*

RESEARCH CONSORTIA AND NETWORKS

- **NeuroStemCellRepair:** EU consortium with 12 partners from Sweden, UK, Italy and Germany, including industrial partners Miltenyi and Roslin Cells. Budget: 6 mill € over 4 yrs. Aim: Preclinical development of regenerative stem cell treatments for Parkinson's Disease and Huntington's Disease. *Role: Active contributor and coordinator of research within WP5 to optimise and adapt differentiation protocols to GMP-compatible standards*
- **BrainStem:** Danish-Swedish research consortium with 15 partners, including industrial partners Bioneer, Lundbeck A/S and ICDD (France). Budget: 3.2 mill € over 5 yrs. Aim: To use iPSCs for modelling human neurodegenerative diseases for development of new therapies and diagnostic techniques. *Role: Member as independent PI, and leader of WP1 (WP1: Refining the roadmap for neural differentiation in vitro)*
- **Bagadilico** (Basal Ganglia Disorder Linnaeus Consortium): Research network of 21 groups at Lund University with focus on Huntington's Disease and Parkinson's Disease. Budget: 7.5 mill € over 10 yrs. *Role: Associate member and active contributor to WP2 (Translational science)*
- **MultiPark** Strategic Research Area network of 32 groups at Lund University with focus on neurodegenerative diseases. Budget: 28 mill SEK/yr. *Role: Membership through group, and recipient of MultiPark innovation kickstart grant*

SCIENTIFIC PUBLICATIONS

- **Grealish S, Diguët E, Kirkeby A, Mattsson B, Heuer A, Bramouille Y, Camp NV, Perrier AL, Hantraye P, Björklund A and Parmar M.** Human ESC-derived dopamine neurons show similar preclinical efficacy and potency to fetal neurons when grafted in a rat model of Parkinson's disease. *Cell Stem Cell*, 2014 Nov 6; 15(5): 653-65. **2 citations**
- **Kirkeby A, Nelander J, Parmar M.** Generating regionalized neuronal cells from pluripotency, a step-by-step protocol. *Frontiers in Cellular Neuroscience*. 2013 Jan; doi: 10.3389. **8 citations**
- **Kirkeby A, Parmar M.** Building authentic midbrain dopaminergic neurons from stem cells – lessons from development. *Translational Neuroscience*. 2012 Dec; 3(4): 314-19. **2 citations**
- **Kirkeby A, Grealish S, Wolf DA, Nelander J, Wood J, Lundblad M, Lindvall O, Parmar M.** Generation of regionally specified neural progenitors and functional neurons from human embryonic stem cells under defined conditions. *Cell Reports*. 2012 Jun 28;1(6): 703-14. **92 citations**
- **Kirkeby A, Parmar M, Jakobsson J.** Using endogenous microRNA expression patterns to visualize neural differentiation of human pluripotent cells. *Springer Protocols*, book chapter from "Human embryonic and induced pluripotent stem cells – lineage-specific differentiation protocols, 2011.
- **Pfisterer U*, Kirkeby A*, Torper O*, Wood J, Nelander J, Dufour A, Björklund A, Lindvall O, Jakobsson J, Parmar M.** Direct conversion of Thuman fibroblasts to dopaminergic neurons racking differentiating neural progenitors in pluripotent cultures using microRNA-regulated lentiviral vectors. *PNAS*, 2011 Jun 21;108(25):10343-8. **Equal contribution*, **306 citations**
- **Sachdeva R, Jönsson ME, Nelander J, Kirkeby A, Guibentif C, Gentner B, Naldini L, Björklund A, Parmar M, Jakobsson J.** Tracking differentiating neural progenitors in pluripotent cultures using microRNA-regulated lentiviral vectors. *PNAS*. 2010 Jun 22;107(25):11602-7. **27 citations**
- **Lapchak PA, Kirkeby A, Zivin JA, Sager TN.** Therapeutic window for nonerythropoietic carbamylated-erythropoietin to improve motor function following multiple infarct ischemic strokes in New Zealand white rabbits. *Brain Res*. 2008 Oct 31;1238:208-14. **28 citations**
- **Leist M, Bremer S, Brundin P, Hescheler J, Kirkeby A, Krause KH, Poerzgen P, Puceat M, Schmidt M, Schratzenholz A, Zak NB, Hentze H.** The biological and ethical basis of the use of human embryonic stem cells for in vitro test systems or cell therapy. *ALTEX*. 2008;25(3):163-90. **36 citations**
- **Kirkeby A, Torup L, Abel K, Theilgaard-Moench K, Bochsén L, Johanssen P, Kjalke M, Bjørn S, Leist M, Gerwien J.** High-dose erythropoietin alters platelet reactivity and bleeding time in rodents in contrast to the neuroprotective variant carbamyl-erythropoietin (CEPO). *Thromb Haemost*. 2008 Apr;99(4):720-8. **46 citations**
- **Montero M, Poulsen FR, Norberg J, Kirkeby A, van Beek J, Leist M, Zimmer J.** Comparison of neuroprotective effects of erythropoietin (EPO) and carbamylerythropoietin (CEPO) against ischemia-like oxygen-glucose deprivation (OGD) and NMDA excitotoxicity in mouse hippocampal slice cultures. *Exp. Neurol*. 2007 Mar;204(1):106-17. **60 citations**
- **Kirkeby A, van Beek J, Nielsen J, Leist M, Helboe L.** Functional and immunochemical characterisation of different antibodies against the erythropoietin receptor. *J Neurosci Methods*. 2007 Aug 15;164(1):50-8. **45 citations**