Chad A. Cowan

Curriculum Vitae

Center for Regenerative Medicine and Technology
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Education

University of Texas Southwestern — Dallas, TX
Doctor of Philosophy in Cell Regulation — *May, 2002*

University of Kansas — Lawrence, KS
Bachelors of Science in Cell Biology (with Honors) — *May, 1995*
Bachelors of Arts in Chemistry and Biochemistry — *May, 1994*

Research Experience

Massachusetts General Hospital,
Center for Regenerative Medicine and Technology,
Cardiovascular Research Center — Boston, MA — *2006-Present*
Assistant Professor of Medicine and
Assistant Investigator, Stowers Medical Institute

Harvard University,
Department of Molecular and Cellular Biology — Cambridge, MA — *2002 -2006*
Post-Doctoral Research Fellow, Advisor: Douglas Melton

University of Texas Southwestern,
Center for Developmental Biology — Dallas, TX — *1995 - 2002*
Doctoral Student, Advisor: Mark Henkemeyer
Doctoral Thesis: Bidirectional Signaling of B-subclass Eph Receptor Tyrosine Kinases and Ephrin Ligands.

University of Kansas,
Department of Pharmacology — Lawrence, KS — *1993 - 1995*
Honors Thesis Research, Advisor: Elias Michaelis

Teaching Experience

The Jackson Laboratory, — Bar Harbor, ME — *2005-Present*
Current Protocols in Stem Cell Biology Workshop

Boston University,
Department of Biochemistry — Boston, MA — *2004-Present*
GMS BI 782 Molecular Biology, Guest Lecturer

Harvard University, Cambridge, MA
Department of Molecular and Cellular Biology *2002-2004*
MCB 125 Stem Cells and Cloning, Guest Lecturer

Original Research

1.) Cowan C.A., Atienza J., Melton, D.A. and Eggan, K.: Nuclear Reprogramming of Somatic Cells After Fusion with Human Embryonic Stem Cells. *Science*. August 26, 2005.

2.) Wang S., **Cowan C.A.**, Chipperfield H. and Powers R. D.: Gene expression in the pre-implantation embryo: in-vitro developmental changes. *Reproductive Biomedicine Online*, May, 2005.

3.) Anneren C, **Cowan C.A.** and Melton D.A.: The Src family of tyrosine kinases is important for embryonic stem cell self-renewal. *Journal of Biological Chemistry*, May 17, 2004.

4.) Cowan, C.A., Yokoyama, N., Saxena, A., Chumley, M.J., Silvany, R.E., Baker, L.A., Srivastava, D. and Henkemeyer, M.: Ephrin-B2 reverse signaling is required for axon pathfinding and cardiac valve formation but not early vascular development. *Developmental Biology*, May 12, 2004.

5.) Dravis, C., Yokoyama, N., Chumley, **Cowan, C.A.**, Silvany, R.E., Shay, J., Baker, L.A., and Henkemeyer, M.: Bidirectional signaling mediated by ephrin-B2 and EphB2 controls urorectal development. *Developmental Biology*, May 10, 2004.

6.) Cowan, C.A., Klimanskaya, I., McMahon, J., Atienza, J., Witmyer, J., Zucker, J.P., Wang, S., Morton, C.C., McMahon, A.P., Powers, D. and Melton, D.A.: Derivation of embryonic stem-cell lines from human blastocysts. *New England Journal of Medicine*, 350(13),1353-6, 2004.

7.) Himanen, J.P., Rajashankar, K.R., Lackmann, M., **Cowan, C.A.**, Henkemeyer, M., and Nikolov, D.B.: Crystal structure of an Eph receptor-ephrin complex. *Nature,* 414, 933-938, 2001.

8.) Cowan, C.A. and Henkemeyer, M.: The SH2/SH3 adaptor Grb4 transduces B-ephrin reverse signals. *Nature,* 413, 174-179, 2001.

9.) Yokoyama, N., Romero, M.I., **Cowan, C.A.**, Galvan, P., Helmbacher, F., Charnay, P., Parada, L.F. and Henkemeyer, M.: Forward signaling mediated by ephrin-B3 prevents contralateral corticospinal axons from recrossing the spinal cord midline. *Neuron,* 29, 85-97, 2001.

10.) Cowan, C.A., Yokoyama, N., Bianchi, L.M., Henkemeyer, M. and Fritzsch, B.: EphB2 guides axons at the midline and is necessary for normal vestibular function. *Neuron*, 26, 417-430, 2000.

11.) Birgbauer, E., **Cowan, C.A.**, Sretavan, D.W., and Henkemeyer, M. Kinase Independent Function of EphB Receptors in Retinal Axon Pathfinding to the Optic Disc from the Dorsal but not Ventral Retina. *Development,* 127, 1231-1241, 2000.

Reviews Comments Opinions

1.) Akutsu, H., **Cowan, C.A.** and Melton, D.A. Human Embryonic Stem Cells. *Methods in Enzymology*, Vol. 418. Robert Lanza Editor, 2006.

2.) Cowan, C.A. and Melton, D.A. "Stemness": Definitions, Criteria and Standards. *Handbook of Stem Cells*, Vol. 1 and 2. Robert Lanza Editor, 2004.

3.) Cowan, C.A. and Henkemeyer, M. Ephrins in reverse, park and drive. *Trends in Cell Biology*, 12, 339-346, 2002.

4.) Cowan, C.A. and Henkemeyer, M. More cables to abl. *Neuron,* 26, 543-544, 2000.

Invited Scientific Lectures

Mount Desert Island Stem Cell Symposia, *August 2005*. Presented: Nuclear Reprogramming of Somatic Cells After Fusion with Human Embryonic Stem Cells. Salisbury Cove, ME.

Columbia University, *July 2005*. Presented: Disease Models with Human Embryonic Stem Cells. New York, NY.

Boston University, *April 2005*. Presented: Nuclear Transplantation and Human Embryonic Stem Cells, Pathways to the Treatment of Disease. Boston, MA.

Keystone Symposia, Molecular Regulation of Stem Cells, *February 2005*. Presented: Nuclear Reprogramming of Somatic Cells After Fusion with Human Embryonic Stem Cells. Alberta, Canada

The Stower's Institute for Biomedical Research, *October 2004,* Presented: Human Embryonic Stem Cells: Derivation, Tools, and Manipulation, Kansas City, MO.

International Symposium "Human Embryonic Stem Cells - Progress Towards Cell Therapies". *July 2004*, Presented: Derivation and Characterization of Human Embryonic Stem Cells. The Centre for Stem Cell Biology. University of Sheffield, England.

The Museum of Science, *May 2004*, Presented: Human Embryonic Stem Cells: Promises and Therapies. Boston, MA.

University of Texas Southwestern Medical Center, Nominata Award Lecture. *May 2001*, Presented: Bidirectional Signaling of EphB receptors and B-ephrin Ligands. Dallas, TX.

Southwest Regional Society for Developmental Biology Meeting, *June 2001*, Presented: An SH2/SH3 Adaptor Protein Transduces B-ephrin Reverse Signals. New Orleans, LA.

Awards

Stowers Medical Institute, *2006-2010*

Rx Foundation Fellow, *2005-2006*.

Damon Runyon Cancer Research Fellow, *2002-2005*.

UT Southwestern Nominata Award, *2001*.

Divisional Honors in Cellular Biology, *1995*.

University of Kansas Leadership Scholarship, *1990*.

National Merit Scholar, *1989*.