

Ben Emery, Ph.D.

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Academic Qualifications

- **Ph.D.**, University of Melbourne, Australia, March 2005
Thesis title; "Identification of the role that Suppressors of Cytokine Signalling play in modulating Oligodendrocyte Survival and in Susceptibility to Demyelinating Disease"
- **BSc (Hons, First class)**, University of Melbourne, Australia, Department of Anatomy and Cell Biology. December 2000
- **Victorian Certificate of Education (VCE)**, Braemar College, Australia December 1996

Professional Experience

- **2005-Present** Postdoctoral Scholar, Prof. Ben Barres Laboratory, Department of Neurobiology, Stanford University, CA, USA
- **2004-2005** Researcher at the Howard Florey Institute, University of Melbourne, Vic., Australia. Supervisor: Prof. Trevor Kilpatrick
- **2001-2004** Ph.D. Candidate at Walter and Eliza Hall Institute, University of Melbourne, Vic. Australia. Supervisor: Prof. Trevor Kilpatrick
- **2000** Honours student, University of Melbourne, Department of Anatomy and Cell Biology Vic., Australia. Supervisor: Prof. Sandra Rees
- **1999** Research student at Walter and Eliza Hall Institute, Vic., Australia Supervisor: Dr Helen Cooper

Fellowships

- **2006-Present** CJ Martin Overseas Biomedical Fellowship, National Health and Medical Research Council, Australia
- **2001-2004** Australian Postgraduate Award (APA)

Teaching Experience

- **2006** Training of rotation student within Barres Laboratory
- **2002-2003** Mentoring and training of three medical students within their year placement in the Kilpatrick laboratory
- **2002-2003** Demonstrator in Science/Physiotherapy Structure and Function of the Brain course, Department of Anatomy and Cell Biology, University of Melbourne, Vic., Australia

Grant/Journal Reviewing

- **2008** Invited reviewer for Multiple Sclerosis Research Australia (MSRA) grant
- **2008** Invited reviewer for Craig H. Neilson Foundation grant
- **2008** Assisted Prof. Barres in reviewing a paper for MCN
- **2006** Invited reviewer for J. Neuroscience
- **2006** Assisted Prof. Barres in reviewing papers for J. Neuroscience, JCB and EMBO

Professional Societies

- Society for Neuroscience

Awards

Young Investigators Prize, *Progress in MS Research Meeting*, Melbourne, 2004

Student Poster Prize (commendation), *Australian Neuroscience Society*, 24th Annual Meeting 2004

Exhibition in Psychology, University of Melbourne, 1998

Dean's Honour List, Faculty of Science, University of Melbourne, 1997

PUBLICATIONS

Emery, B., Agalliu, D., Cahoy, J.D. Watkins, T.A., Dugas, J.C., Mulinyawe, S., Ibrahim, A., Ligon, K.L., Rowitch, D., Barres, B.A. Myelin-gene Regulatory Factor is a Critical Transcriptional Regulator Required for CNS Myelin Gene Expression and Myelination. *Cell*, in press.

Emery B, Barres BA. Unlocking CNS cell type heterogeneity. *Cell*. 2008 Nov 14;135(4):596-8

Watkins TA, **Emery B**, Mulinyawe S, Barres BA. Distinct stages of myelination regulated by gamma-secretase and astrocytes in a rapidly myelinating CNS coculture system. *Neuron*. 2008 Nov 26;60(4):555-69.

Cahoy JD,* **Emery B**,* Kaushal A,* Foo LC, Zamanian JL, Christopherson KS, Xing Y, Lubischer JL, Krieg PA, Krupenko SA, Thompson WJ, Barres BA. A transcriptome database for astrocytes, neurons, and oligodendrocytes: a new resource for understanding brain development and function. *J Neurosci*. 2008 Jan 2;28(1):264-78 *Equal contributing authors

Marriott MP, **Emery B**, Cate HS, Binder MD, Kemper D, Wu Q, Kolbe S, Gordon IR, Wang H, Egan G, Murray S, Butzkueven H, Kilpatrick TJ. Leukemia inhibitory factor signaling modulates both central nervous system demyelination and myelin repair. *Glia*. 2008 Apr 15;56(6):686-98

Emery, B., Cate, H.S., Marriott, M., Binder, M.D., Snell, C., Murray, S., Croker, B., Zhang, J.G., Alexander, W.S., Cooper, H., Butzkueven, H., and Kilpatrick, T.J. Suppressor of Cytokine Signaling-3 limits the protective influence of Leukaemia inhibitory factor receptor signaling against central demyelination (2006). *Proc Natl Acad Sci U S A*. 16;103(20):7859-64

Butzkueven, H, **Emery B**, Cipriani C, and Kilpatrick T.J. Endogenous Leukemia Inhibitory Factor production limits autoimmune demyelination and oligodendrocyte loss (2006). *Glia* 53(7) 696-703

Emery, B., Merson, T.D., Snell, C., Young, K.M., Ernst, M., and Kilpatrick, T.J SOCS3 negatively regulates LIF signaling in Neural Precursor Cells (2006). *Mol Cell Neurosci* 31(4):739-47

Emery, B., Butzkueven, H., Snell, C., Binder, M. and Kilpatrick, T.J. (2006) Oligodendrocytes exhibit selective expression of SOCS genes and STAT1 independent inhibition of IFN γ induced toxicity in response to LIF. *Neurosci* 137(2):463-72

Kilpatrick TJ, Butzkueven H, **Emery B**, Marriott M, Taylor BV, Tubridy N (2004) Neuroglial responses to CNS injury: prospects for novel therapeutics. *Expert Rev Neurotherapeutics* 4:869-878

Pitman M, **Emery B**, Binder M, Wang S, Butzkueven H, Kilpatrick TJ (2004) LIF receptor signaling modulates neural stem cell renewal. *Mol Cell Neurosci* 27:255-266

Petratos S, Butzkueven H, Shipham K, Cooper H, Bucci T, Reid K, Lopes E, **Emery B**, Cheema SS, Kilpatrick TJ (2003) Schwann cell apoptosis in the postnatal axotomized sciatic nerve is mediated via NGF through the low-affinity neurotrophin receptor. *J Neuropathol Exp Neurol* 62:398-411

Butzkueven H, Zhang JG, Soilu-Hanninen M, Hochrein H, Chionh F, Shipham KA, **Emery B**, Turnley AM, Petratos S, Ernst M, Bartlett PF, Kilpatrick TJ (2002) LIF receptor signaling limits immune-mediated demyelination by enhancing oligodendrocyte survival. *Nat Med* 8:613-619

Seaman C, Anderson R, **Emery B**, Cooper HM (2001) Localization of the netrin guidance receptor, DCC, in the developing peripheral and enteric nervous systems. *Mech Dev* 103:173-175

Conference Presentations

B. Emery, D. Agalliu, T. Watkins, J. Cahoy, S. Mulinyawe and B.A. Barres. The oligodendrocyte specific transcription factor Myelin-gene Regulatory Factor is vital for oligodendrocyte development and CNS myelination. American Society for Neurochemistry 40th Annual Meeting 2009. Oral Presentation.

B. Emery, D. Agalliu, T. Watkins, J. Cahoy, S. Mulinyawe and B.A. Barres. The oligodendrocyte specific transcription factor Myelin-gene Regulatory Factor is vital for oligodendrocyte development and CNS myelination. Cold Spring Harbor *Glia in Health and Disease* Meeting, 2008. Oral Presentation

B. Emery, J. Cahoy, T. Watkins, S. Mulinyawe, B.A. Barres. Identification of Myelin-Gene Regulatory Factor, a novel oligodendrocyte transcription factor. Society for Neuroscience 2007. Oral Presentation

T.A. Watkins, **B. Emery**, S. Mulinyawe, B.A. Barres; A critical period for myelination during the maturation of an oligodendrocyte. Society for Neuroscience 2007. Poster Presentation

L.C. Foo, J. D. Cahoy, **B. Emery**, J. L. Zamanian, A. Kaushal, W. Hong, K. S. Christopherson, J. L. Lubischer, B.A. Barres; Genomic analysis of purified astrocytes reveals in vivo astrocyte gene expression and molecular pathways for phagocytosis in the mammalian CNS. Society for Neuroscience 2007. Poster presentation

Merson, TD, Oluich, LJ, **Emery, B**, Snell, C, Young, KM, Ernst, M and Kilpatrick, TJ. Modulation of LIFRb signalling in neural precursor cells in the normal and demyelinated CNS. IBRO 7th World Congress of Neuroscience, Melbourne, Australia 2007. Poster presentation

T. D. Merson, **B. Emery**, C. Snell, K. M. Young, M. Ernst, T. J. Kilpatrick. SOCS3 is a negative regulator of LIF signaling in neural precursor cells. Society for Neuroscience 2006. Poster presentation

J. D. Cahoy, **B. Emery**, J. L. Zamanian, A. Kaushal, K. S. Christopherson, J. L. Lubischer, B.A. Barres. Genomic analysis of acutely isolated astrocytes from the postnatal mouse CNS. Society for Neuroscience 2006. Poster presentation

Merson TD, **Emery B**, Snell C, Young KM, Ernst M and Kilpatrick TJ. The role of LIFR in neural precursor cell biology & its potential application to demyelinating disease. Centre for Neuroscience Research Symposium, University of Melbourne 2006. Poster presentation

H. Butzkueven; **B. Emery**; T.J. Kilpatrick. Characterizing the transcriptional response to LIF in oligodendrocytes. Society for Neuroscience 2005. Poster presentation

T.J. Kilpatrick; B. Emery; M. Pitman; C. Snell; M. Binder; H. Butzkueven; T. Merson LIF receptor signalling modulates neural stem cell renewal and is negatively regulated by SOCS3. Society for Neuroscience 2005 (oral presentation)

B. Emery; H. Butzkueven; H. Cate; M. Marriott; S.S. Murray; T.J. Kilpatrick. Conditional deletion of Suppressor of Cytokine Signaling 3 potentiates oligodendrocyte survival in response to Leukemia Inhibitory Factor. Society for Neuroscience 2004. Poster presentation

Emery, B., Butzkueven, H., Cate, H.S., Marriott, M. and Kilpatrick T.J. Conditional deletion of Suppressor of Cytokine Signaling 3 reduces the severity of experimental demyelination Progress in MS Research Meeting, Australia, 2004. Oral Presentation

T.J. Kilpatrick, M. Pitman, **B. Emery**. LIF Receptor Signaling Modulates Neural Stem Cell Renewal. Society for Neuroscience 2003. Poster presentation

Emery, B., Butzkueven, H., Marriott, M., and Kilpatrick T.J. Oligodendrocyte specific deletion of SOCS3 reduces severity of experimental autoimmune encephalomyelitis Australian Neuroscience Society, 2003. Poster Presentation

Emery, B., Butzkueven, H. and Kilpatrick, T.J. Oligodendrocyte expression of SOCS3: Implications for LIF receptor signaling. Australian Neuroscience Society, 2003. Poster presentation

B. Emery, H. Butzkueven and T.J. Kilpatrick Analysis of the molecular mechanisms by which LIF modulates oligodendrocyte survival. Australian Neuroscience Society, 2002. Poster Presentation

B. Emery, H. Butzkueven and T.J. Kilpatrick (2002) SOCS expression in inflammatory demyelination: A basis for the modulation of cytokine responsiveness of oligodendroglia? Progress in MS Research Meeting, Australia, 2002. Poster Presentation

REFERENCES

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