
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES..**

NAME Martin J. Gallagher, M.D., Ph.D.	POSITION TITLE Assistant Professor of Neurology		
eRA COMMONS USER NAME gallgmj			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Notre Dame, Notre Dame, IN	B.S.	1989	Chemistry
Washington University St. Louis, MO	Ph.D.	1997	Molecular Biophysics
Washington University St. Louis, MO	M.D.	1997	Medicine
Washington University, Barnes-Jewish Hospital	Med. intern	1997-1998	Internal Medicine
Washington University, Barnes-Jewish Hospital	Resident	1998-2001	Neurology
Washington University, Barnes-Jewish Hospital	Fellow	2001-2002	Epilepsy

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. Positions and Honors

Positions and Employment

1992-1996 Visiting Scholar, Neurobiology, Harvard Medical School
2001-2002 Instructor, Neurology, Washington University
2002-present Assistant Professor, Neurology, Vanderbilt University

Other Experience and Professional Memberships

2004-2007 American Epilepsy Society National Meeting: Scientific Program Committee
2004-2008 American Epilepsy Society National Meeting: Investigators' Workshop Committee
2004-current Editorial Board, [Epilepsy Currents](#)
1998-present American Academy of Neurology
2001-present American Epilepsy Society
2002-present Society for Neuroscience
2005-present American Society for Biochemistry and Molecular Biology

Honors

1988 Sigma Xi Grant in Aid for Biomedical Research
1989 Phi Beta Kappa University of Notre Dame
1989 Summa Cum Laude, University of Notre Dame
1989 Gamma Sigma Epsilon – Chemistry Honor Society
1989 American Chemical Society – 1st prize for undergraduate research
1989-1997 Distinguished Student Scholar – Washington University Medical School
2003 Young Investigator Award, American Epilepsy Society
2005 Early Career Physician Scientist Award – Milken Family Foundation/American Epilepsy Society

B. Peer-reviewed publications

Peer Reviewed Papers

- Gallagher MJ, Chan YL, Lin A, Wool IG. Primary structure of rat ribosomal protein L36a. DNA 1988;7:269-73.
- Gallagher MJ, Cohen JB. Identification of amino acids of the *Torpedo* nicotinic acetylcholine receptor contributing to the binding site for the noncompetitive antagonist [³H]tetracaine. Mol.Pharmacol. 1999;56:300-7.

3. Blanton MP, McCardy EA, Gallagher MJ. Examining the noncompetitive antagonist-binding site in the ion channel of the nicotinic acetylcholine receptor in the resting state. *J.Biol.Chem.* 2000;275:3469-78.
4. Arias HR, McCardy EA, Gallagher MJ, Blanton MP. Interaction of barbiturate analogs with the *Torpedo californica* nicotinic acetylcholine receptor ion channel. *Mol.Pharmacol.* 2001;60:497-506.
5. Gallagher MJ, Chiara DC, Cohen JB. Interactions between 3-(Trifluoromethyl)-3-(m-[¹²⁵I]iodophenyl)diazirine and tetracaine, phencyclidine, or histrionicotoxin in the *Torpedo* species nicotinic acetylcholine receptor ion channel. *Mol.Pharmacol.* 2001;59:1514-22.
6. Arias HR, McCardy EA, Bayer EZ, Gallagher MJ, Blanton MP. Allosterically linked noncompetitive antagonist binding sites in the resting nicotinic acetylcholine receptor ion channel. *Arch.Biochem.Biophys.* 2002;403:121-31.
7. Gallagher MJ, Eisenman LN, Brown KM, Erbayat-Altay E, Hecimovic H, Fessler AJ, Attarian HP, Gilliam FG. Levetiracetam reduces spike-wave density and duration during continuous EEG monitoring in patients with idiopathic generalized epilepsy. *Epilepsia* 2004;45:90-1.
8. Gallagher MJ, Song L, Arain F, Macdonald RL. The juvenile myoclonic epilepsy GABA_A receptor alpha1 subunit mutation A322D produces asymmetrical, subunit position-dependent reduction of heterozygous receptor currents and alpha1 subunit protein expression. *J.Neurosci.* 2004;24:5570-8.
9. Macdonald RL, Gallagher MJ, Feng HJ, Kang J. GABA_A receptor epilepsy mutations. *Biochem.Pharmacol.* 2004;68:1497-506.
10. Gallagher MJ, Shen W, Song L, Macdonald RL. Endoplasmic reticulum retention and associated degradation of a GABA_A receptor epilepsy mutation that inserts an aspartate in the M3 transmembrane segment of the alpha1 subunit. *J.Biol.Chem.* 2005;280:37995-8004.
11. Jones-Davis DM, Song L, Gallagher MJ, Macdonald RL. Structural determinants of benzodiazepine allosteric regulation of GABA_A receptor currents. *J.Neurosci.* 2005;25:8056-65.
12. Tayah TF, Abou-Khalil B, Gilliam FG, Knowlton RC, Wushensky CA, Gallagher MJ. Musicogenic seizures can arise from multiple temporal lobe foci: intracranial EEG analyses of three patients. *Epilepsia* 2006;47:1402-6.
13. Recio MV, Gallagher MJ, McLean MJ, Abou-Khalil B. Clinical features of epilepsy in patients with cerebellar structural abnormalities in a referral center. *Epilepsy Res.* 2007;76:1-5.
14. Gallagher MJ. Mutant Batten disease protein says "no" to unsaturated fats. *Epilepsy Curr.* 2007;7:82-3.
15. Gallagher MJ, Ding L, Maheshwari A, Macdonald RL. The GABA_A receptor alpha1 subunit epilepsy mutation A322D inhibits transmembrane helix formation and causes proteasomal degradation. *Proc.Natl.Acad.Sci.U.S.A* 2007;104:12999-3004

Recent Chapters

1. Macdonald RL, Kang JQ, Gallagher MJ, Feng HJ. GABA_A receptor mutations associated with generalized epilepsies. *Adv.Pharmacol.* 2006;54:147-69

C. Research Support.

Ongoing Research Support

K02 NS055979 Gallagher (PI)

NIH, NINDS

6/1/2007-5/31/2012

GABA_A Receptor Alpha 1 Subunit Degradation and Its Association with Epilepsy

Objective – to determine the effect of the juvenile myoclonic epilepsy GABA_A receptor α1 subunit mutation on α1 subunit translation, degradation and steady state expression in neurons.

Role: PI

Completed Research Support

K08 NS044257 Gallagher (PI)

NIH, NINDS

8/01/2002-5/31/2007

Physiologic Analysis of Two GABAR Gamma 2-Subunit Domains

Objective –to determine the physiology of GABA_A receptors with γ2 subunits containing point mutations found in human epilepsy syndromes

Role: PI

Early Career Physician Scientist Award Gallagher (PI)

Milken Family Foundation/American Epilepsy Society 1/01/2006-12/31/2006

Small Molecule Rescue of Defective GABA_A Receptor α 1 Subunit Folding in an Autosomal Dominant Juvenile Myoclonic Epilepsy

Objective – to determine if small molecules can increase the expression of a misfolded GABA_A receptor α 1 subunit with a mutation associated with juvenile myoclonic epilepsy

Role: PI