

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME Richard Bernard Mailman		POSITION TITLE Professor, Psychiatry, Pharmacology, Neurology, and Medicinal Chemistry	
eRA COMMONS USER NAME RMAILMAN			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Rutgers University, New Brunswick NJ	B.S.	1968	Chemistry/Food Science
North Carolina State University, Raleigh	M.S.	1972	Physiology/Toxicology
North Carolina State University, Raleigh	Ph.D.	1974	Physiology/Toxicology
North Carolina State University, Raleigh	Post-doc.	1974-5	Drug metabolism
University of North Carolina, Chapel Hill	Post-doc.	1976-7	Neurobiology

A. Positions and Honors.**Employment**

(all at the University of North Carolina School of Medicine at Chapel Hill)

1978-1986: Research Assistant/Research Associate Professor, Department of Psychiatry and Pharmacology

1987-1988: Associate Professor (tenured), Departments of Psychiatry and Pharmacology

1988-present: Professor, Departments of Psychiatry, Pharmacology, and Medicinal Chemistry

1978-present: Chief, Molecular Pharmacology Laboratory and Research Scientist, UNC Neuroscience Center; Member, Neurobiology and Toxicology Faculties.

1993-present: Director, Division of Basic Psychobiology, Department of Psychiatry.

2001-present: Associate Director, Curriculum in Toxicology

Honors

Eugene Hargraves Award in Mental Health Research (1999); Burroughs-Wellcome Fund Travel Award (1999); 1st Distinguished Alumni Speaker, North Carolina State University (1998); Burroughs-Wellcome Scholar in Toxicology (1987-1992); Early Training: Early admissions, Rutgers University; New Jersey State Scholarship; Rutgers College Dean of Men's Grant; ASBC-Brand Travel Grant, 1974;

Federal and Other Advisory Group Memberships

NIH ZRG1 MDCN-L (2001-5); NIMH MATRICS Project (2003); NIMH Neuroscience of Mental Health Advisory Panel, 1993 (Neuropsychopharmacology Redbook); NIH Reviewers Reserve (1991-1995); NIH Toxicology Study Section (1987-1991); EPA Science Review Panel for Health Research (1985-1989); NIMH Special Research Review Committee (1985-1987); Frequent Consultant or ad hoc for NIH agencies, etc.

Current Editorial Board Activities

Current Opinion in Investigational Drugs (1998-present); The Journal of Molecular and Biochemical Toxicology (1992-present); Neurotoxicology (1985-present)

Professional Memberships:

American College of Neuropsychopharmacology (Fellow); Society for Neuroscience; American Society of Neurochemistry; International Society for Neurochemistry; American Society for Pharmacology and Experimental Therapeutics; Society of Toxicology; American Chemical Society; American Association for the Advancement Science

B. Publications (chronological order from total of >150 full peer-reviewed papers & >50 chapters).

Ryman-Rasmussen JP, Nichols DE, and Mailman RB. Differential activation of adenylate cyclase and receptor internalization by novel dopamine D₁ receptor agonists. *Mol Pharmacol* 68(4): 1039-48. 2005.

Oloff S, Mailman RB and Tropsha A. Application of Validated QSAR Models of D₁ Dopaminergic Antagonists for Database Mining. *J. Med. Chem.* (in press) 2005.

- Padilla S, Marshall RS, Hunter DL, Oxendine S, Moser V, Southerland SB, and Mailman RB.. Neurochemical Effects of Chronic Dietary and Repeated High-Level Acute Exposure to Chlorpyrifos in Rats. *Toxicol. Sci.* (in press)
- Gay EA, Urban JD, Nichols DE, Oxford GS and Mailman RB. Functional selectivity of D₂ receptor ligands in a CHO hD_{2L} cell line: evidence for induction of ligand-specific receptor states. *Mol. Pharmacol.* 66: 97-105. 2004.
- Grubbs RA, Lewis MM, Owens-Vance C, Arrington EK, Jassen AK, Mailman RB, and Nichols DE. 8,9-Dihydro-1,2,3,11b-tetrahydrochromeno[4,3,2,-de]isoquinoline (dinoxylene), a high affinity and potent agonist at all dopamine receptor isoforms. *Bioorg. Med. Chem.* 12: 1403-1412, 2004
- Sit S-Y, Xie K, Jacutin-Porte S, Boy KM, Seanz J, Taber MT, Gulwadi AG, Korpinen CD, Burris KD, Molski TF, Ryan E, Xu C, Verdoorn T, Johnson G, Nichols DE, and Mailman RB. Synthesis and SAR exploration of dinapsoline analogues. *Bioorg. Med. Chem.* 12: 715-734, 2004.
- Mailman RB and Gay EA. Novel Mechanisms of Drug Action: Functional Selectivity at D₂ Dopamine Receptors (a lesson for drug discovery). *Med. Chem. Res.* 13 (1/2) 115-126, 2004.
- Qandil AM, Lewis MM, Jassen A, Mailman RB, and Nichols DE. Synthesis and pharmacological evaluation of substituted naphth[1,2,3-de]isoquinolines (dinapsoline analogs) as D₁ and D₂ dopamine receptor ligands. *Bioorg. Med. Chem.* 11(7): 1451-1464, 2003.
- Shapiro DA, Renock S, Arrington E, Sibley DR, Chiodo LA, Roth BL, and Mailman RB. Aripiprazole, a novel atypical antipsychotic drug with a unique and robust pharmacology. *Neuropsychopharmacology* 28: 1400-1411, 2003.
- Leonard SK, Anderson CM, Lachowicz JE, Schulz DW, Kilts CD, and Mailman RB. Amygdaloid D₁ receptors are not linked to stimulation of adenylate cyclase. *Synapse* 50:320-333, 2003.
- Leonard SK, Petitto JM, Anderson CM, Mooney DH, Lachowicz JE, Schulz DW, Kilts CD, and Mailman RB. D₁ Dopamine Receptors in the Amygdala Exhibit Unique Properties. In: *The Amygdala in Brain Function: Basic and Clinical Approaches.* Ann. NY Acad. Sci. 985: 1-4, 2003.
- Mottola, DM, Lawler CP, Jones SR, Einhorn L, Booth RG, Wightman M, Nichols DE and Mailman RB. Functional selectivity of dopamine D₂ receptors. I. Novel postsynaptic functional selectivity of dihydrexidine and its analogs in the rat central nervous system. *J. Pharmacol. Exp. Ther.* 301: 1166-1178 2002.
- Kilts JD, Smith H, Lawler CP, Oxford G, Nichols DE, O'Malley KL, Todd R, and Mailman RB. Functional selectivity of dopamine D₂ receptors. II. D₂ mediated functional selectivity of dihydrexidine and its analogs in model systems. *J. Pharmacol. Exp. Ther.* 301: 1179-1189 2002.
- Andersson C, Hamer R, Lawler CP, Mailman RB, and Lieberman JA. Striatal Volume Changes in the Rat Following Long-Term Administration of Typical and Atypical Antipsychotic Drugs *Neuropsychopharmacology* 27: 143-151, 2002
- Gulwadi AG, Korpinen CD, Mailman RB, Nichols DE, Sit S-Y, and Taber M. J. Dinapsoline: characterization of a D₁ dopamine receptor agonist in a rat model of Parkinson's Disease. *Pharmacol. Exp. Ther.* 296: 1-7, 2001.
- Mailman RB, Huang X, and Nichols DE. Dopamine D₁ full agonists and Parkinson's disease. *Current Opin in Investigational Drugs* 2(11): 2001.
- Huang X, Lawler CP, Nichols DE, Lewis MM, and Mailman RB. Dopamine D₁ Receptors. *International Review of Neurobiology* 48: 66-138, 2001.
- Montague DM, Striplin CD, Overcash JS, Drago J, Mailman RB and Lawler CP. Quantification of D_{1B} (D₅) receptors in dopamine D1A receptor-deficient mice. *Synapse* 39:319-322, 2001.
- Miyamoto S, Mailman RB, Lieberman JA, and Duncan GE. Blunted brain metabolic response to ketamine in mice lacking D_{1A} dopamine receptors. *Brain Res.* 894: 167-180, 2001.
- Miyamoto S, Duncan GE, Mailman RB and Jeffrey A. Lieberman. Developing Novel Antipsychotic Drugs: Strategies and Goals. *Current Opinion in Investigational Drugs.* 2: 25-39, 2000.
- Hoffman B, Cho S-J, Zheng W, Wyrick S, Mailman RB, Nichols DE and Tropsha A. Comparative QSAR Analyses of Dopamine D₁ Antagonists using Comparative Molecular Field Analysis (CoMFA), Genetic Algorithms-Partial Least Squares, and Nearest Neighbor Methods. *J. Med. Chem.* 42: 3217-3226, 1999.
- Lawler CP, Prioleau C, Lewis MM, Mak C, Jiang D, Schetz JA, Gonzalez AM, Sibley DR, Mailman RB. Interactions of the novel antipsychotic aripiprazole (OPC-14597) with dopamine and serotonin receptor subtypes. *Neuropsychopharmacol.* 20:612-627, 1999.
- Montague, D.M., Striplin, C.D., Overcash, S., Mailman, R.B. and Lawler, C.P. Developmental regulation of the D₁ receptor in human caudate and putamen. *Neuropsychopharmacology* 21: 641-649, 1999.
- Doll MK, Nichols DE, Kilts JD, Prioleau C, Lawler CP, Lewis MM, Mailman RB Synthesis and dopaminergic properties of benzo-fused analogues of quinpirole and quinlorane. *J. Med. Chem.* 42:935-940, 1999.

C. Research Support for Last Three Years.**ONGOING**

Project Number (Principal Investigator)	NIH MH073910 (W. Goddard) (R. Mailman UNC Site PI)	Dates of Project:	01/01/06- 12/31/07	Percent Effort	5%
Title of Project (or Subproject)	Subtype specific agonists for D1-D5 receptors				
This project focuses on using novel computational methods and molecular mutation to discover the first subtype selective ligands for these receptors.					

Project Number (Principal Investigator)	NIH MH40537-16 (R. Mailman)	Dates of Project:	04/01/85- 03/31/06	Percent Effort	25%
Title of Project (or Subproject)	A novel molecular site for antidopaminergic action				
This project focuses on understanding D ₁ and D ₅ receptor structure, and designing novel ligands with unique functional properties.					

Project Number (Principal Investigator)	NS39036-05 (R. Mailman)	Dates of Project:	09/01/00- 08/31/06	Percent Effort	25%
Title of Project (or Subproject)	Molecular Regulation of D ₁ Dopamine Receptor Function				
Some, but not all, full D ₁ agonists produce marked tolerance when administered repeatedly. This work is defining the molecular and cellular events that are involved in tolerance caused by D ₁ receptor agonists. The driving hypothesis is that selective conformations are promoted by different full D ₁ agonists, and furthermore, that these conformations represent different, but overlapping receptor states compared to those that promote G protein coupling.					