
BIOGRAPHICAL SKETCH

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NAME Ronald Stanton Duman	POSITION TITLE Professor		
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
College of William and Mary, Williamsburg, VA	BS	1976	Biology
University of Texas Medical School, Houston, TX	PhD	1985	Neuropharmacology
University of Texas Medical School, Houston, TX	Postdoc	1985-1986	Neuropharmacology
Yale University School of Medicine	Postdoc	1986-1988	Molecular Neuroscience

A. Positions

8/77 - 7/80 Laboratory Coordinator, Department of Biology, University of Notre Dame
7/88 - 6/93 Assistant Professor, Departments of Psychiatry and Pharmacology, Yale University
7/93 - 6/97 Associate Professor, Departments of Psychiatry and Pharmacology, Yale University
7/97 - 7/99 Tenured Associate Professor, Departs. of Psychiatry and Pharmacology, Yale University
7/99 - present Tenured Professor, Departments of Psychiatry and Pharmacology, Yale University
11/00-present Director, Abraham Ribicoff Research Facilities, Department of Psychiatry, Yale University
4/01-present Elizabeth Mears and House Jameson Professor of Psychiatry, Yale University

Honors and Awards

Laureate Investigator Award, 1989; NARSAD Young Investigator Award, 1989; Eli Lilly Young Investigator Award, 1996; NARSAD Independent Investigator Award, 1997; van Ameringen Investigator Award, 1997, 1998; Anna-Monika Award for Research in Depression, 2001; NARSAD-Nola Maddox Falcone Award for Research in Mood Disorders, 2002; Paul Janssen Prize for Psychopharmacology, 2003; Distinguished Alumni Award, Univ. Texas, 2004; NARSAD Distinguished Investigator Award, 2005; NIMH MERIT Award, 2005; CINP Basic Science Research Award, 2006; Plenary Lecture, Japanese Pharmacological Society, 2008; Presidents Symposium, Psychoneuroimmunology Research Society, 2009.

Editorial/Scientific Advisory Board Memberships

Critical Rev Neurobiology, Editorial Advisory Board (EAB), 1995-1997; Neuropsychopharmacology-EAB, 1996-present, Associate Editor, 1998-2002; J Neurochem, EAB and Handling Editor, 1997-present; JPET, Associate Editor, 1998-present; Mol Pharmacol-EAB, 1998-present; Anxiety Disorders Association of America, SAB, 1999-present; Biological Psychiatry-EAB, 2000-present; Psychopharmacology- EAB and advisory editor, 2005-present; Brain Stimulation-EAB, 2007-present; Psychogenics-SAB, 1997-2009.

B. Selected peer-reviewed publications (in chronological order).

Nestler, E.J., A. McMahon, E. Sabban, J.F. Tallman and R.S. Duman: Chronic antidepressant administration decreases tyrosine hydroxylase in rat locus coeruleus. Proc Natl Acad Sci 87:7522-7526, 1990.
Melia, K.R. and R.S. Duman: Chronic stress regulation of the brain noradrenergic system is mediated by corticotropin-releasing factor. Proc Natl Acad Sci USA 88:8382-8386, 1991.
Morinobu, S. and R.S. Duman: Chronic antidepressant treatment down-regulates the induction of c-fos mRNA in response to acute stress in rat frontal cortex. Neuropsychopharmacol 12:221-228, 1995.
Nibuya, M., M. Morinobu, and R.S. Duman: Regulation of BDNF and trkB mRNA in rat brain by chronic electroconvulsive seizure and antidepressant drug treatments. J Neurosci 15:7539-7547, 1995.
Nibuya, M., E.J. Nestler, and R.S. Duman: Chronic antidepressant treatment increases the expression of CREB and BDNF in rat hippocampus. J Neurosci.16:2365-2372, 1996.
Vaidya VA, GJ Marek, GK Aghajanian, and RS Duman (1997) 5-HT2A receptor mediated regulation of BDNF mRNA in the hippocampus and neocortex. J Neurosci 17:2785-2795.
Malison, R, LH Price, EJ Nestler, GR Heninger, and RS Duman (1997) Efficacy of Papaverine addition in treatment-refractory major depression. Am J Psychiatry 154:579-580.
Duman RS, GR Heninger, and EJ Nestler (1997) A molecular and cellular theory of depression. Arch Gen Psych, 54:597-06.
Fujimaki K, S Morinobu, and RS Duman (1999) Administration of a PDE4 inhibitor enhances antidepressant induction of BDNF mRNA in rat hippocampus. Neuropsychopharmacology 22:42-51.

- Takahashi M, R Terwilliger, C Lane, PS Mezes, M Conti, and RS Duman (1999) Chronic antidepressant administration increases the expression of cAMP PDE4A and 4B isoforms. J Neurosci 19:610-618.
- Vaidya VA, J Siuciak, F Du, and RS Duman (1999) Mossy fiber sprouting and synaptic reorganization induced by chronic electroconvulsive seizure: Role of BDNF. Neuroscience, 89:157-166.
- Thome J, S Impey, D Storm, and RS Duman (2000) Induction of CRE gene expression by antidepressant treatment. J Neurosci 20:4030-4036.
- Malberg JE, AJ Eisch, EJ Nestler, and RS Duman (2000) Chronic antidepressant treatment increases neurogenesis in adult hippocampus. J Neurosci 20:9104-9110.
- Duman RS, J Malberg, S. Nakagawa, and C D'Sa (2000) Neuronal plasticity and survival in mood disorders. Biol Psychiatry 48:732-739.
- Chen A-H, Y Shirayama, KH Shin, RL Neve, and RS Duman (2001) Expression of the CREB in hippocampus produces antidepressant effect. Biol Psychiatry 49:753-762.
- Shirayama Y, S Nakagawa, AC-H Chen, DS Russell, and RS Duman (2002) Brain derived neurotrophic factor produces antidepressant effects in behavioral models of depression. J Neurosci 22:3251-61.
- Nakagawa S, J-E Kim, R Lee, JE Malberg, J Chen, C Steffen, Y-J Zhang, EJ Nestler, and RS Duman (2002) Regulation of neurogenesis in adult hippocampus by cAMP and CREB. J Neurosci 22(9):3673-3682.
- Rasmuson AM, L Shi, and RS Duman (2002) Down-regulation of BDNF mRNA in hippocampus after re-exposure to cues previously associated with footshock. Neuropsychopharmacology 27:133-142.
- Sakai N, J Thome, J Chen, M Kelz, EJ Nestler, and RS Duman (2002) Inducible and region specific expression of CREB. Mol Pharmacol 61:1453-1464.
- Nakagawa S, J-E Kim, R Lee, J Chen, T Fujioka, J Malberg, S Tsuji, and RS Duman (2002) Localization of phosphoCREB in immature neurons of adult hippocampus. J Neurosci 22:9868-9876.
- Newton SS, J Thome, T Wallace, A Dow, L Schlesinger, N Sakai, J Chen, EJ Nestler, and RS Duman (2002) Inhibition of CREB/dynorphin produces antidepressant effects. J Neurosci 24:10883-10890.
- Coyle JT and RS Duman (2003) Finding the intracellular signaling pathways affected by mood disorder treatments. Neuron 38:157-160.
- Chen JS, SS Newton, L Zeng, DH Adams, AL Dow, TM Madsen, EJ Nestler, RS Duman (2003) Down-Regulation of CEBP by ECS is Mediated by Δ FosB. Neuropsychopharmacology 29:23-31.
- Newton SS, E Collier, J Hunsberger, D Adams, R Terwilliger, E Salvanayagam, and RS Duman (2003) Gene profile of ECS: induction of neurotrophic and angiogenic factors. J Neurosci 23:10841-10851.
- Madsen T, DS Russell, and RS Duman (2003) Chronic ECS up-regulates β -catenin signaling in rat hippocampus: role in adult neurogenesis. Biol Psychiatry 54:1006-1014.
- Santarelli L, M Saxe, C Gross, A Surget, F Battaglia, S Dulawa, N Weisstaub, J Lee, R Duman, O Aranico, C Belzung, and R Hen (2003) Requirement of hippocampal neurogenesis for the behavioral effects of antidepressants. Science 301:805-809.
- Ramos, BP, SG Birnbaum, I Lindenmayer, RS Duman, and AFT Arnsten (2003) Failure of PKA Activation to Enhance Prefrontal Cortical Cognitive Function in Aged Rats and Monkeys. Neuron 40:835-845.
- Cavus I and RS Duman (2003) Influence of estradiol, stress, and 5-HT_{2A} agonist treatment on BDNF expression in female rats. Biol Psychiatry 54:59-69.
- Sheehan T, RL Neve, RS Duman, and DS Russell (2003) Antidepressant effect of the calcium-activated tyrosine kinase Pyk2 in the lateral septum. Biol Psychiatry 54:540-551.
- Malberg J, and RS Duman (2003) Inescapable stress decreases neurogenesis in adult hippocampus: Reversal by fluoxetine treatment. Neuropsychopharmacology 28:1562-1571.
- Tolbert LM, DS Russell, and RS Duman (2003) Norepinephrine induces stimulation of extracellular regulated kinase (ERK) in cortical neurons. Biol Psychiatry 54:983-993.
- Chen JS, SS Newton, L Zeng, DH Adams, AL Dow, TM Madsen, EJ Nestler, RS Duman (2004) Down-Regulation of the CCAAT-Enhancer Binding Protein by Electroconvulsive Seizures is Mediated by Δ FosB. Neuropsychopharmacology 29:23-31.
- Beech BD, MA Cleary, HB Treloar, AJ Eisch, AV Harrist, W Zhong, CA Greer, RS Duman and MR Picciotto (2004) The nestin promoter/enhancer directs transgene expression to precursors of adult generated periglomerular neurons. J Comp Neurol 475:128-141.
- Wallace TL, KE Stellitano, RL Neve, and RS Duman (2004) Effects of CREB overexpression in the basolateral amygdala on behavioral models of depression and anxiety. Biol Psychiatry 56(3):151-60.
- Shirayama Y, K Ishida, M Iwata, G Hazama, R Kawahara, RS Duman (2004) Stress increases dynorphin immunoreactivity in limbic brain regions and dynorphin antagonism produces antidepressant-like effects. J Neurochem 90:1258-1268.
- Kodama M, T Fujioka and RS Duman (2004) Chronic olanzapine or fluoxetine Treatment Increases Cell Proliferation in Rat Hippocampus and Frontal Cortex. Biol Psychiatry 56:570-580.
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- Fujioka T, A Fujioka, and RS Duman (2004) Activation of cAMP signaling facilitates the morphological maturation of newborn neurons in adult hippocampus. J Neurosci 24:319-328.
- Perrotti LI, Y Hadeishi, PG Ulery, M Barrot, L Monteggia, RS Duman and EJ Nestler (2004) Induction of Δ FosB in reward-related brain structures after chronic stress. J Neurosci 24:10594-10602.
- Newton SS, EF Collier, AH Bennett, D Russell, and RS Duman (2004) Regulation of Growth factor receptor bound 2 (*Grb2*) by Electroconvulsive Seizure. Brain Research 129:185-188.
- Kodoma M, DS Russell, and RS Duman (2005) Electroconvulsive seizures increase the expression of MAP kinase phosphatases in limbic brain regions of rat brain. Neuropsychopharmacology 30:360-371.
- Madsen TM, DD Yeh, and RS Duman (2005) Electroconvulsive Seizure Treatment Increases Cell Proliferation in Rat Frontal Cortex. Neuropsychopharmacology 30:27-34.
- Hsu, R, JR Taylor, JD Alvaro, V Phantharangsy, C Haile, G Han, VJ Hruby, EJ Nestler, and RS Duman (2005) Role of melanocortin in drug reward. Eur J Neurosci 21:2233-2242.
- Hunsberger J, AH Bennett, E Selvanayagam, RS Duman, and SS Newton (2005) Gene profiling the response to kainic acid induced seizures. Mol Brain Res 141:95-112.
- D'Sa C, AJ Eisch, GB Bolger, and RS Duman (2005) Differential expression and regulation of PDE4A splice variants in rat brain by chronic antidepressant treatment. Eur J Neurosci 22:1463-1475.
- Dow A, DS Russell, and RS Duman (2005) Up-regulation of activin mRNA and Smad2 phosphorylation by antidepressant treatment in the rat brain: Effects in behavioral models. J Neurosci 25:4908-4916.
- Simen BB, CH Duman, AA Simen, and RS Duman (2006) TNF α signaling in depression and anxiety: behavioral consequences of individual receptor targeting. Biol Psych 59:775-785.
- Newton SS and RS Duman (2006) Chromatin remodeling: A novel mechanism of psychotropic drug action. Molecular Pharmacology 70:440-443.
- Duman RS and LM Monteggia (2006) A neurotrophic model for stress-related mood disorders. Biol Psych 59:1116-1127.
- Newton SS, MJ Girgenti, EF Collier, and RS Duman (2006) Electroconvulsive seizure increases adult hippocampal angiogenesis in rats. Eur J Neuroscience 24:819-828.
- Ploski JE, SS Newton, and RS Duman (2006) Electroconvulsive seizure-induced gene expression profile of the dentate gyrus subfield of the hippocampus. J Neurochemistry 99:1122-1132.
- Duman CH, DA Russell, and RS Duman (2007) Blockade of ERK produces a pro-depressive effect and blocks the behavioral actions of antidepressants. Biol Psychiatry 61(5):661-670.
- Warner-Schmidt JL and RS Duman (2007) Vascular endothelial growth factor is an essential mediator of the neurogenic and behavioral actions of antidepressants. PNAS USA 104:4647-4652.
- Banasr, M, GW Valentine, XY Li, S Gourley, J Taylor, and RS Duman (2007) Chronic Stress Decreases Cell Proliferation in Adult Cerebral Cortex of Rat: Reversal by Antidepressants. Biol Psychiatry 62:496-504.
- Hunsberger JG, SS Newton, AH Bennett, CH Duman, DS Russell, S Salton, RS Duman (2007) Novel role of exercise-regulated gene VGF in models of depression. Nature Medicine 13:1476-1482.
- Kang H-J, DH Adams, A Lin, BB Simen, G Rajkowska, C Stockmeier, J Overholser, HY Meltzer, G Jurjus, L Konick, B Simen, SS Newton, and RS Duman (2007) Gene expression profiling in postmortem prefrontal cortex of major depressive disorder. J Neurosci 27:311-320.
- Tanis KQ, RS Duman, and SS Newton (2008) A dynamic atlas of CREB binding and activity in brain: regional specificity and induction. Biol Psychiatry 63:710-720.
- Koo JW and RS Duman (2008) IL-1Rb is an essential mediator of the anti-neurogenic and anhedonic effects of stress. PNAS USA 105:751-756.
- Warner-Schmidt JL, TM Madsen, and RS Duman (2008) ECS restores neurogenesis and hippocampus-dependent fear memory after disruption by irradiation. Eur J Neurosci 27:1485-1493.
- Nishida E, JL Warner-Schmidt, and RS Duman (2008) ECS stimulates quiescent neural progenitor cell proliferation by activation of VEGF signaling. PNAS USA: 105:11352-11357. PMID: 2516270.
- Suda SM, E. Nishida, SS Newton, and RS Duman (2008) A postpartum depression model: Behavioral and gene expression changes induced by ovarian steroid deprivation. Biol Psych 64(4):311-9. PMID – in progress.
- Banasr M and RS Duman (2008) Glial loss in the prefrontal cortex is sufficient to induce depressive-like behavior. Biol Psych 64:863-870. PMID: 2709733
- Sen S, RS Duman, and GS Sanacora (2008) Serum BDNF, depression and antidepressant medications: meta-analyses and implications. Biol Psych 64:527-532. PMID: 2597158.
- Chepenik L, C Fredericks, X Papedmetris, L Spencer, C Lacadie, F Wang, B Pittman, JS Duncan, LH Staib, RS Duman J Gelernter, and HP Blumberg (2008) Effects of BDNF Val66Met variation on hippocampus morphology in bipolar disorder. Neuropsychopharmacology 34:944-951. PMID – in progress
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- Banasr M and RS Duman (2008) Keeping “trk” of antidepressant actions. Neuron 59(3):349-51.
- Blumberg HP, F Wang, LG Chepenik, JH Kalmar, E Edmiston, RS Duman and J Gelernter (2008) Influence of vascular endothelial growth factor variation on human hippocampus morphology. Biol Psych 64:901-903. PMID: 2649728
- Banasr M, GM Chowdhury, R Twillinger, SS Newton, RS Duman, KL Behar, and G Sanacora (2009) Stress-induced glial pathology and depressive-behaviors are prevented by riluzole. Mol Psych, epub. PMID: In progress.
- Hajszan T, A Dow, JL Warner-Schmidt, K Szigeti-Buck, NL Sallam, A Parducz, C Leranthy, and RS Duman (2009) Remodeling of hippocampal synapses in the rat learned helplessness model of depression and antidepressant therapy. Biol Psych 65:392-400. PMID: 2663388.
- Duman CH, L Schlesinger, DR Russell, and RS Duman (2009) Peripheral insulin-like growth factor-1 produces antidepressant-like behavior and is required for the effect of exercise. Beh Brain Research 198:366-371. PMID: 2729431.
- Greene J, M Banasr, and RS Duman (2009) VEGF signaling is required for the behavioral actions of antidepressants: Pharmacological and cellular characterization. Neuropsychopharmacology, epub. PMID – In progress.
- Su XW, X-Y Li, M Banasr, and RS Duman (2009) Eszopiclone and fluoxetine enhance the survival of newborn neurons in the hippocampus of adult rat. Int J Neuropsychopharm, epub. PMID – In progress.
- Hajszan T, K Szigeti-Buck, NL Sallam, J Bober, A Parducz, NJ MacLusky, C Leranthy, and RS Duman (2009) Helpless Behavior Is Strongly Associated with Remodeling of Hippocampal Spine Synapses in Female Rats: Modulation by Estradiol. Biological Psychiatry, epub. PMID: in progress

C. Ongoing Research Support

NIMH 2 RO1-45481, MERIT (PI, RS Duman; 25 percent effort); 5/1/05-4/30/15;

Antidepressants and Signal Transduction in Brain

The primary focus of this grant is to study the molecular and cellular actions of antidepressants, particularly the cAMP-CREB cascade and neurotrophic factor signaling.

There is no scientific or budgetary overlap with other support.

NIMH 1 RO1-074354-01 (PI, RS Duman; 10 percent effort); 7/1/05 -6/30/10; Title of subproject: Profiling gene expression in major depression

The major focus of this work is to identify the gene expression profile of postmortem tissue of depressed patients using microarray analysis. This work is focused on subfields of the hippocampus from normal, depressed and schizophrenic patients.

There is no scientific or budgetary overlap with other support.

NIMH 1 RO1 MH074021 (PI, Tibor Hajszan, RS Duman, Co-Inv, 5 percent effort); 2/1/06-1/30/09.

Title of grant: Antidepressant effect on hippocampal synaptogenesis.

The focus of this grant is to examine the influence of stress, estrogen, and antidepressant treatment on synapse formation in hippocampal subfields, by analysis of electron microscopic images of sections. This is then compared with behavior in models of depression.

There is no scientific or budgetary overlap with other support.

NIMH P50-66172 (PI, EJ Nestler, RS Duman, Co-Inv, 5 percent effort); 7/1/03-6/30/8.

Title of subproject: Role of melanocortin 4 receptor and intracellular signaling in depression.

The aims of this grant are to study the role of the melanocortin 4 receptor intracellular signal transduction in the mesolimbic dopamine system in the actions of antidepressants, stress and models of depression.

There is no scientific or budgetary overlap with other support.

Recently completed

NIMH 2 PO1-25642 (PI, RS Duman, 30 percent effort); 7/1/02-6/30/08

Title of subproject: Neurobiological Basis of Major Psychiatric Disorders.

This program project grant is focused on the role of signal transduction in behavioral and cellular models of stress and depression. The aim of project 3 is to study the molecular mechanisms underlying the regulation of adult neurogenesis by antidepressant treatment.

There is no scientific or budgetary overlap with other support.
