

RICHARD CARLTON DETH, PhD

I. Personal Data and Education:

A. Personal Data:

Home Address: 1484 Beacon Street
Waban, Massachusetts 02468

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Boynton Beach, Florida 33743

Work Address: Northeastern University
Dept. of Pharmaceutical Sciences
148 The Fenway
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Boston, MA 02115

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B. Education:

1965-1970 Bachelor of Science (Pharmacy)
S.U.N.Y. at Buffalo

1970-1975 Doctor of Philosophy (Pharmacology)
University of Miami, School of Medicine

II. Professional Experience:

A. Post-Doctoral Training

1975-1976 Catholic University of Leuven (Belgium)

B. Professional/Administrative Experience

1972-1976 Registered Pharmacist, State of Florida
1976-1981 Assistant Professor of Pharmacology,
Northeastern University, Boston, MA
1981-1982 Section Leader, Pharmacology
1981-1987 Associate Professor of Pharmacology
1982-1986 Director, Pharmacy Program
1987-Present Professor of Pharmacology
1990-1992 Chairman, Department of Pharmaceutical Sciences

III. Memberships:

Rho Chi, Sigma Xi, Phi Kappa Phi (Honor Societies)
Society for Neuroscience
American Society of Pharmacology and Experimental Therapeutics
Society of Biological Psychiatry
International Society for Autism Research

IV. Current Research Interests:

1. Role of redox and methylation status in neurodevelopmental disorders.
2. Receptor-dependent regulation of gene expression via epigenetic mechanisms.
3. Involvement of epigenetic mechanisms in drug addiction
4. Role of D₄-dopamine receptor-mediated phospholipid methylation in psychiatric illnesses.
5. Redox and methylation effects of casein/gluten-derived opiate peptides.

V. Teaching Experience

Course coordination and lectures in undergraduate and graduate-level pharmacology courses.

Lecture areas have included:

Undergraduate: Autonomic Pharmacology, Neuropharmacology, Cardiovascular Pharmacology, G.I. Pharmacology, Autacoids, Diuretics, Anesthetic agents, Diabetes management, G.I. pharmacology, Endocrine pharmacology, Anti-inflammatory drugs.

Graduate: Molecular modeling, cardiovascular pharmacology and physiology, neuropharmacology, and receptor pharmacology

Graduate Student Advisees:

- Fifteen Ph.D. Thesis Students
- Five M.S. Thesis Students
- Service on numerous thesis committees

VI. Scientific Advisory Board Memberships

Current:

Autism Research Institute

Previous:

National Autism Association

VII. Grant Support

Current:

1. NIH/NIDA: R21DA030225 (PI: R. Deth): Effect of Drugs of Abuse on Neuronal Redox and Methylation Status. (\$388,750) 5/1/2011 – 4/30/2013.
2. Sultanate of Oman (PI: Y. Al-Farsi): Autism and Developmental Disabilities in the Sultanate of Oman: From etiology research to community services. (Subcontract to R. Deth (\$50,000/year x 3 yrs) 5/1/2012-4/30/2015.
3. A2 Corporation (Two Projects) (PI: R.Deth): 1.Characterization of Multiple Opiate Peptide Signaling Pathways. (\$34,000) 11/1/2012-10/31/2013. 2. Opiate Peptide Effects on DNA Methylation and Gene Expression. (\$47,500) 9/1/2012-8/31/2013.
4. Autism Research Institute (PI: R.Deth): Metabolic Factors Affecting Gamma Synchrony: A Collaborative Approach. (\$50,000). 9/1/2013-2/28/2014.

Pending:

1. Autism Speaks (PI: R. Deth): Selenium-dependent antioxidant metabolism in brain, epigenetic regulation and autism. (\$97,000). 11/1/2012-10/31/2013.

2. SafeMinds (PI: R. Deth): Epigenetic effects of thimerosal and inorganic mercury exposure in human neuronal cells grown under "brain-like" redox conditions. (\$60,000). 12/1/2012-11/30/2013.
3. NIH/NIEHS (PI: R. Deth): Redox-dependent Regulation of DNA Methylation and Transcription. (\$1,795,639). 7/1/2013-6/30/16.

VIII. **Publications:**

A. **Articles:**

1. Chang, K.J., **Deth, R.C.**, Triggle, D.J.: "Cholinergic antagonism among stereoisomers of a series of substituted 1,3 dioxolanes". *J. Med. Chem.*, 15, 243-249 (1972).
2. Van Breemen, C., Farinas, B.R., Casteels, R., Gerba, P., Wuytack, R., **Deth, R.C.**: "Factors controlling cytoplasmic Ca^{2+} concentration". *Phil. Trans. Roy Sci., Lond, B* 265, 57-71 (1973).
3. **Deth, R.C.**, Van Breemen, C.: "Relative contributions of Ca^{2+} influx and cellular Ca^{2+} release during drug induced activation of the rabbit aorta". *Pflugers Arch*: 348, 13-22 (1974).
4. Van Breemen, C., **Deth, R.C.**: "La and excitation contraction coupling in vascular smooth muscle (pp. 26-31) in "Ionic actions of vascular smooth muscle", edit by E. Betz, Springer-Verlag Berlin (1976).
5. **Deth, R.C.**, Van Breemen, C.: "Agonist-induced release of intracellular Ca^{2+} in rabbit aorta". *J. Membrane Biology*, 30, 363-380 (1977).
6. **Deth, R.**, Casteels, R.: "A study of releasable Ca^{2+} fractions in smooth muscle cells". *J. General Physiology*, 69, 401-419 (1977).
7. **Deth, R.C.**: "The effect of Lanthanum and reduced temperature on Ca^{2+} efflux from the rabbit aorta". *Am. J. Physiol. (Cell Physiology)* 3 (3), C139-C145 (1978).
8. **Deth, R.C.** and Lynch, C.J.: "The binding of ^3H -ouabain to Na-K ATPase sites in arterial smooth muscle". *Pharmacology* 21, 29-37 (1980).
9. **Deth, R.C.** and Lynch, C.J.: "Mobilization of a common source of smooth muscle Ca^{2+} by norepinephrine and methylxanthines". *Am. J. Physiol.* 240, C239-C247 (Cell Physiology) (1981).
10. **Deth, R.C.** and Lynch, C.J.: "Inhibition of alpha-receptor-induced Ca^{2+} release and Ca^{2+} influx by Mn^{2+} and La^{3+} ". *Eur. Pharmacol.* 71, (1981).
11. Lynch, C.J., **Deth, R.C.** and Steer, M.L.: "Simultaneous loss and reappearance of alpha-adrenergic responses ^3H -prazosin binding sites in rat liver after irreversible blockage by phenoxybenzamine". *B.B.A.*, 757, 156-163 (1983).

12. Awad, R. and **Deth, R.C.**: "Alpha-adrenergic subtype associated with receptor binding, Ca^{2+} release and contractile events in the rabbit aorta". *J. Pharmacol. Exp. Ther.* 227, 60-77 (1983).
13. Lynch, C.J. and **Deth, R.C.**: "Release of a common source of intracellular Ca^{2+} by alpha-adrenergic agonists and dinitrophenol in rat liver slices". *Pharmacol.* 28, 74-85 (1984).
14. **Deth, R.C.**, Smart, J.L., Lynch, C.J. and Walsh, R.: "Lack of correlation between ^3H -ouabain binding and Na-K ATPase inhibition in rat aorta". *Eur. J. Pharmacol.* 99, 45-55 (1984).
15. Lynch, C.J., Guarino, J.J., **Deth, R.C.** and Steer, M.L.: "The effect of sucrose-feeding on alpha-adrenergic response in the rat liver". *Am. J. Physiol.* 246, E344-E349 (1984).
16. Danthuluri, N.R. and **Deth, R.C.**: "Phorbol ester-induced contraction of arterial smooth muscle and inhibition of alpha-adrenergic response". *Biochem. Biophys. Res. Comm.* 125, 1103-1109 (1985).
17. Lynch, C.J., Steer, M.L., Connors, M.R., Schatz, R.A. and **Deth, R.C.**: "Evidence for a decrease in the efficiency of beta-receptor coupling to adenylate cyclase in liver membranes from sucrose fed rats". *Biochem. Pharmacol.* 34, 623-629 (1985).
18. Tumas, J., **Deth, R.C.** and Kloner, R.A.: "Effects of nisoldipine on myocardial infarct size, hemodynamics, and myocardial performance". *J. Cardiovasc. Pharmacol.* 7, 383-391 (1985).
19. Campbell, M.D., Honeyman, T.M. and **Deth, R.C.**: "Correlation between ^{32}P -labelling of phosphoinositides and agonist-induced contraction and Ca^{2+} fluxes in arteries". *Eur. J. Pharmacol.* 116, 129-136 (1985).
20. Danthuluri, N.R., and **Deth, R.C.**: "Acute desensitization to angiotensin II: Evidence for a requirement of agonist-induced diacylglycerol production during tonic contraction of rat aorta". *Eur. J. Pharmacol.* 126, 135-139 (1986).
21. Lynch, C.J., Steer, M.L., Smart, J.L. and **Deth, R.C.**: "Differences in the role of Na^+/K^+ ATPase during α_1 -adrenergic events in rat and rabbit aorta". *Pharmacology* 33, 221-34 (1986).
22. Campbell, M.D., Danthuluri, N.R. and **Deth, R.C.**: "Differences in phospholipid incorporation of ^{32}P relevant to α_1 -receptor coupling events in rat and rabbit aorta". *Biochem. Biophys. Res. Comm.* 141, 1213-1221 (1986).
23. Wick, P.F., Keung, A.C., Bowler, J.J. and **Deth, R.C.**: "Alpha-1 adrenergic coupling events induced by full and partial agonists in rabbit aorta". *J. Pharmacol. Exp. Ther.* 241, 458-464 (1987).

24. Gupta, S., Campbell, M.D., Cragoe, E.J., Jr. and **Deth, R.C.**: "Influence of ANF on receptor-initiated phosphoinositide metabolism and ^{22}Na uptake in arteries". Proc. Congress on Biologically Active Arterial Peptides 1, 252-255 (1987).
25. Jagadeesh, G. and **Deth, R.C.**: "Different affinity states of alpha-1 adrenergic receptors defined by agonists and antagonists in bovine aorta plasma membranes". J. Pharmacol. Exp. Ther. 243, 430-436 (1987).
26. Danthuluri, N.R., Berk, B.C., Brock, T.A., Cragoe, E.J., Jr., and **Deth, R.C.**: "Protein kinase C-mediated intracellular alkalization in rat and rabbit aortic smooth muscle cells". Eur. J. Pharmacol. 141, 403-506 (1987).
27. **Deth, R.C.**, Payne, R.A. and Peecher, D.M.: "Influence of furosemide on rubidium-86 uptake and alpha-adrenergic responsiveness of arterial smooth muscle". Blood Vessels 24, 321-333 (1987).
28. Smart, J.L. and **Deth, R.C.**: "Influence of α_1 -adrenergic receptor stimulation and phorbol esters on hepatic Na^+/K^+ ATPase activity". Pharmacology 37, 94-104 (1988).
29. Danthuluri, N.R. and **Deth, R.C.**: "Contractile effects of ammonium chloride in relation to agonist-induced intracellular alkalization". Am. J. Physiol. (Heart and Circ.) H867-H875 (1989).
30. Ek, T.P. and **Deth, R.C.**: "Reduced EIPA sensitive Na/H exchange in SHR arteries". Hypertension 12, 331 (1988).
31. Ek, T.P., Campbell, M.D. and **Deth, R.C.**: "Reduction of norepinephrine-induced tonic contraction and phosphoinositide turnover in arteries of spontaneously hypertensive rats: A possible role for protein kinase C". Am. J. Hypertension 2, 14-18 (1988).
32. Jagadeesh, G. and **Deth, R.C.**: "Phorbol ester-induced modulation of agonist and antagonist binding to α_1 adrenergic receptor in bovine aorta". J. Pharmacol. Exp. Ther. 247, 196-202 (1988).
33. Gupta, S., Campbell, M.D., Cragoe, E.J., Jr. and **Deth, R.C.**: "Influence of ANF on ^{32}P -phospholipid labelling and EIPA-sensitive ^{22}Na uptake in rabbit aorta". J. Pharmacol. Exp. Ther. 248, 991-996 (1989).
34. Jagadeesh, G. and **Deth, R.C.**: "Modulation of bovine aortic alpha-1 receptors by Na^+ 5'guanylylinidophosphate, amiloride and ethyl-isopropylamiloride for receptor G-protein precoupling". J. Pharmacol. Ther. 252, 1184-1196 (1990).
35. Tian, W. and **Deth, R.C.**: "Species differences in chloroethylclonidine antagonism at vascular alpha-1 adrenergic receptors". J. Pharmacol. Exp. Ther. 253, 877-883 (1990).
36. **Deth, R.C.**, Lesburg, C., Li, S., Cragoe, E.J., Jr.: "Influence of amiloride derivatives on arterial contractility". J. Pharmacol. Exp. Ther. 253, 530-536 (1990).

37. Jagadeesh, G., Tian, W., Gupta, S. and **Deth, R.C.**: "Age-dependent differences in alpha-1 adrenergic receptor/G-protein coupling". *Eur. J. Pharmacol.* 189, 11-21 (1990).
38. **Deth, R.C.**: "Function of the PI cycle in arterial smooth muscle during hypertension". *Cardiovascular Drug Reviews.* 9, 78-91 (1991).
39. Jagadeesh G., Tian, W., and **Deth, R.C.**: "Agonist-induced modulation of agonist binding to alpha-1 adrenoceptors in bovine aorta". *Eur. J. Pharmacol.* 208, 163-170 (1991).
40. Aburto, T.K., Jinsi, A. and **Deth, R.C.**: "Involvement of protein kinase C activation in alpha-2 adrenergic receptor-mediated contractions of rabbit saphenous vein". *Eur. J. Pharmacol.* 277:24-34 (1995).
41. Jagadeesh, G. and **Deth, R.C.**: "Protein kinase C modulation of antagonist and agonist binding at alpha-2 adrenergic receptors". *J. Pharmacol. Exp. Ther.* 262, 775-783 (1992).
42. Tian, W. and **Deth, R.C.** : "Precoupling of Gi/Go-linked receptors and its allosteric regulation by monovalent cations". *Life Sciences.* 52, 1899-1907 (1993).
43. Tian, W.-N., Lanier, S.H., Duzic, E. and **Deth, R.C.**: "Determinants of alpha-2 adrenergic receptor activation of G-proteins: Evidence for a precoupled R/G state". *Mol. Pharmacol.* 45:524-531 (1994).
44. Shi, A.-G. and **Deth, R.C.**: "Precoupling of alpha-2B adrenergic receptors and G-proteins in transfected PC-12 membranes as revealed by pertussis toxin and a lysine-directed crosslinker". *J. Pharmacol. Exp. Ther.* 271:1520-1527 (1994).
45. Waen-Safranchik, V. and **Deth, R.C.**: "Effects of Wortmannin on alpha-1 and alpha-2 adrenergic receptor mediated vascular contractile responses in rabbit vascular tissues". *Pharmacol.* 48: 349-359 (1994).
46. Jinsi, A. and **Deth, R.C.**: "Alpha-2 adrenoceptor-mediated vasoconstriction requires a tyrosine kinase". *Eur. J. Pharmacol.* 277: 24-34 (1995)
47. Tian, W.-N., Duzic, E., Lanier, S.M. and **Deth, R.C.**: "Receptor reserve for alpha_{2D}-adrenergic receptor-regulated G-protein activation in PC12 cell membranes". *Pharmacol.* 52: 252-262 (1996).
48. Jinsi, A., Paradise, J. and **Deth, R.C.**: "A tyrosine kinase regulates alpha α - 2 adrenoceptor-stimulated contraction and phospholipase D activation in the rat aorta." *Eur. J. Pharmacol.* 302: 183-190 (1996)
49. Liu, Y.-F., **Deth, R.C.** and Devys, D.: "SH3 domain-dependent association of Huntingtin with epidermal growth factor receptor signaling complexes". *J. Biol. Chem.* 272: 8121-8124 (1997).
50. Jinsi-Parimoo, A. and **Deth, R.C.**: "Reconstitution of alpha_{2D}-adrenergic receptor coupling to phospholipase D in a PC12 cell lysate". *J. Biol. Chem.* 272: 14556-14561 (1997).

51. Sharma, A., Kramer, M., Wick, P.F., Liu, D., Chari, S., Shim, S., Tan, W.-B., Ouellette, D., Nagata, M., DuRand, C., Kotb, M. and **Deth, R.C.**: "Dopamine D₄ receptor-mediated methylation of membrane phospholipids and its implications for mental illnesses such as schizophrenia". *Molecular Psychiatry* 4: 235-246 (1999).
52. Jinsi-Parimoo, A. and **Deth, R.C.**: "Protein kinase C and tyrosine kinase-dependent coupling of alpha-2A/D adrenergic receptors to phospholipase D". *Pharmacol.* 60: 19-26 (2000).
53. Tian, W.-N., Miller, D.D. and **Deth, R.C.**: "Bidirectional allosteric effects of agonists and GTP binding at alpha_{2A/D} -adrenergic receptors". *J. Pharmacol. Exp. Ther.* 292: 664-671 (2000).
54. Tian, W.-N. and **Deth, R.C.**: "Differences in efficacy and Na⁺ sensitivity between alpha_{2B} and alpha_{2D} adrenergic receptors" *Pharmacology* 61: 14-21 (2000)
55. Zhao, R., Chen, Y., Tan, W., Waly, M., Malewicz, B., Stover, P., Rosowsky, A. and **Deth, R.C.**: "Influence of single-carbon folate and *de novo* purine synthesis pathways on D4 dopamine receptor-mediated phospholipid methylation." *J. Neurochem.* 78: 788-796 (2001)
56. Sharma, A. and **Deth, R.C.**: "Protein kinase C regulates basal and D4 dopamine receptor-mediated phospholipid methylation in neuroblastoma cells." *Eur. J. Pharmacol.* 427: 83-90 (2001).
57. Deth, R.C., Sharma, A. and **Waly, M.**: "Dopamine-stimulated solid-state signaling: A novel role for single-carbon folates in human attention." In: *Proc. 12th Int. Symp. Chem. Pteridines and Folates.* Kluwer Academic Press (2002).
58. Zhu Q., Qi, L.-J., Abou-Samra, A., Shi, A. and **Deth, R.C.**: "Protein kinase C-dependent constitutive activity of alpha-2A/D-adrenergic receptors." *Pharmacol.* 71: 80-90 (2004).
59. Waly, M., Banerjee, R., Choi, S.W., Mason, J., Benzecry, J., Power-Charnitsky, V.A., **Deth, R.C.** "PI3-kinase regulates methionine synthase: Activation by IGF-1 or dopamine and inhibition by heavy metals and thimerosal" *Molecular Psychiatry* 9: 358-370 (2004).
60. Deth, R.C., Kuznetsova, A. and **Waly, M.**: "Attention-related signaling activities of the D4 dopamine receptor" in *Cognitive Neuroscience of Attention*, Michael Posner Ed., Guilford Publications Inc., New York (2004). p 269-282.
61. Culley, D.J., Raghavan, S.V., Waly, M., Baxter, M.G., Yukhananov, R., **Deth, R.C.** and Crosby, G.: "Nitrous oxide decreases cortical methionine synthase transiently but produces lasting memory impairment in aged rats." *Anesthesia and Analgesia* 105: 83-88 (2007).
62. Kuznetsova, A.Y., and **Deth, R.C.**: "A model for gamma oscillations induced by D4 dopamine receptor-mediated phospholipid methylation." *J. Computational Neuroscience* 24 (3):314-29 (2008).

63. **Deth, R.**, Muratore, C., Benzecry, J., Power-Charnitsky, V., and Waly, M. "How environmental and genetic factors combine to cause autism: A Redox/Methylation Hypothesis." *Neurotoxicology* 29: 190-201 (2007).
64. **Deth, R.C.**, Muratore, C., and Waly, M.: "Oxidative stress in autism and its implications for dopamine-stimulated phospholipid methylation" in *Neurochemical Basis of Autism: Molecules to Minicolumns*, Gene Blatt Ed., Springer, New York (2009).
65. Kane, P., Cartaxo, A., and **Deth, R.C.**: "Nutritional issues in the causation and treatment of autism", in *Food and Nutrients in Disease Management*, Ingrid Kohlstadt Ed., CRC Press, Boca Raton (2008).
66. **Deth, R.C.**: The Redox/Methylation Hypothesis of Autism: A Molecular Mechanism for Heavy Metal-induced Neurotoxicity. In *Autism: Oxidative Stress, Inflammation and Immune Abnormalities*, A. Chauhan, V. Chauhan, W.T. Brown Eds., Taylor & Francis/CRC Press, Boca Raton (2009).
67. Mutter, J., Curth, A., Naumann, J., **Deth, R.** and Walach, H: "Does Inorganic Mercury Play a Role in Alzheimer's Disease? A Systematic Review and an Integrated Molecular Mechanism" *J Alzheimer's Disease* 22: 357-374 (2010).
68. Deth, R.C., Waly, M., Muratore, C. and Hodgson, N. "Redox Imbalance and the Metabolic Pathology of Autism." In "*Developmental Neurotoxicology Research: Principles, Models, Techniques, Strategies and Mechanisms*" Section V: *Autism Spectrum Disorders* Section Ed. Isaac Pessah, John Wiley and Sons, Hoboken, (2010).
69. Waly, M.I., Kharbanda, K.K. and **Deth, R.C.** "Ethanol Lowers Glutathione in Rat Liver and Brain and Inhibits Methionine Synthase in a Cobalamin-dependent Manner" *Alcoholism: Clinical and Experimental Research* 35: 277-83 (2011).
70. **Deth, R.C.** "The Redox/Methylation Hypothesis of Autism" *U.S. Psychiatry* 3: 48-52 (2010).
71. Al-Farsi, Y.M., Al-Sharbati, M.M., Waly, M.I., Al-Farsi, O.A, Al-Shafae, M.A. and **Deth, R.C.** "Malnutrition among preschool-aged autistic children in Oman." *Research in Autism Spectrum Disorders*. 5 1549-52 (2011).
72. Al-Farsi, Y.M., Waly, M.I., Al-Sharbati, M.M., Al-Shafae, M.A. Al-Farsi, O.A, Al-Khaduri, M.M., Ouhtit, A., Al-Adawi, S., Hodgson N.H. and **Deth, R.C.** "Folate and Vitamin B12 Deficiency in Children with Autism in Oman" *Autism and Developmental Disorders* (Under Review)
73. **Deth, R.C.**, Hodgson, N.W., Trivedi, M.S., Muratore, C.R., and Waly, M.I. Autism: a neuroepigenetic disorder. *Autism Science Digest* 3: 7-18 (2012).
74. Waly, M, Muratore, C., Power-Charnitsky, V., Bojkovic, J., Thomas, E., Sharma, A., Audhya, T. and **Deth, R.C.**: "Exon skipping in human neuronal methionine synthase is associated with glutathione dependence and potent inhibition by heavy metals" *PLoS One* (Under review)

75. Muratore.C, Abdolmaleky, H.M., Persico, A.M., De La Monte, S. and **Deth, R.C.**: “Decreased methionine synthase mRNA in human cortex across the lifespan and in autism” PLoS One (Under review)
76. Ali, A., Waly, M.I., Al-Farsi, Y.M., Essa, M.M, Al-Sharbati, M.M., and **Deth, R.C.**:Hyperhomocysteinemia among Omani autistic children:a case-control study. *Acta Biochimica Polonica* 58: 547-51, 2011.
77. Yeter, D., **Deth, R.** ITPKC susceptibility in Kawasaki syndrome as a sensitizing factor for autoimmunity and coronary arterial wall relaxation induced by thimerosal's effects on calcium signaling via IP3. *Autoimmunity Reviews*. 2012 Apr 1. [Epub ahead of print]
78. Terhune, T.D., **Deth, R.C.** How Aluminum Adjuvants Could Promote and Enhance Non-target IgE Synthesis in a Genetically-Vulnerable Sub-population. *J Immunotoxicology*. 2011 Sept 11. [Epub ahead of print]
79. Dufault, R., Lukiw, W.J., Crider, R., Schnoll, R., Wallinga, D., **Deth, R.** A macroepigenetic approach to identify factors responsible for the autism epidemic in the United States. *Clinical Epigenetics*. 2012 Apr 10;4(1):6.
80. Waly, M.I., Hornig, M., Trivedi, M., Hodgson, N., Kini, R., Ohta, A., **Deth, R.** Prenatal and Postnatal Epigenetic Programming: Implications for GI, Immune, and Neuronal Function in Autism. *Autism Research and Treatment*. 2012 [doi:10.1155/2012/190930]
81. Al-Farsi, Y.M., Al-Sharbati, M.M., Waly, M.I., Al-Farsi, O.A., Al-Shafae, M.A., Al-Khaduri, M.M., Trivedi, M.S., **Deth, R.C.**. Effect of suboptimal breast-feeding on occurrence of autism: A case-control study. *Nutrition*. 2012 Jul;28(7-8):e27-32.
82. **Deth, R.C.** Genomics, intellectual disability, and autism. *N Engl J Med*. 2012; 366:2231-2.
83. Trivedi, M.S., **Deth, R.C.** Role of a Redox-Based Methylation Switch in mRNA Life Cycle (Pre-and Post-Transcriptional Maturation) and Protein Turnover: Implications in Neurological Disorders. *Frontiers in Neuroscience*. 2012;6:92.
84. Kern, J.K., Geier, D.A., Geier, M.R., **Deth, R.C.** Are ASD and ADHD a Continuum? A Comparison of Pathophysiological Similarities Between the Disorders *Journal of Attention Disorders* (In Press).
85. Raymond, L.J., **Deth, R.C.**, Ralston, N.V.C: Selenoenzymes and antioxidant metabolism in relation to autism etiology and pathology. *Neurotoxicology* (Under Review).
86. Al-Farsi, Y.M., Waly, MI, Allal Ouhitit, A., Al-Sharbati, M.M., Al-Shafae, M., Al-Farsi, O., Al-Khaduri, M.M., Gupta, I., Al-Khalili, M., Al-Adawi, S., Hodgson, M.W, and **Deth, R.C.** Low Folate and Vitamin B12 Nourishment is Common among Omani Children Newly Diagnosed with Autism. *Nutrition Journal* (In Press).

IX. Monograph:

Deth, R.C. “Molecular Origins of Attention: The Dopamine-Folate Connection”
Kluwer Academic Publishers (April, 2003)

X. Patents:

1. “Compositions and methods for diagnosing schizophrenia” Inventor: **Richard C. Deth**; Patent# 5686255; Date of issue: Nov. 11, 1997. Claims restricted to the diagnosis of schizophrenia and related psychiatric disorders with novel laboratory tests involving D4 dopamine receptor-mediated phospholipid methylation.
2. “Compositions and methods for diagnosing schizophrenia” Inventor: **Richard C. Deth**; Patent# 5,738,998; Date of issue: April 14, 1998. Claims restricted to the use of novel assays for the discovery of new therapeutic entities.
3. “Methods and materials for the diagnosis and treatment of schizophrenia and related disorders” Inventor: Northeastern University/**Richard C. Deth**; Patent# 6,080,549; Date of issue: June 27, 2000.
4. “Methods of identifying and determining the effectiveness of therapeutic processes or agents for the treatment of schizophrenia and related disorders” Inventor: Northeastern University/**Richard C. Deth**; Patent# 6,773,892; Date of issue: August 10, 2004.