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Area of Expertise

A properly functioning stress response is required for maintaining homeostasis. The endocrine arm of the stress response is sub-served by the hypothalamic pituitary adrenal (HPA) axis. Dysregulation of this axis is tightly correlated with the mood disorders of depression and post-traumatic stress disorder.
My lab is interested in the molecular mechanisms of stress response downregulation. Specifically, how the stress steroids, glucocorticoids, downregulate the peptide that triggers the stress response itself: corticotropin releasing hormone (CRH). We have provided evidence that a specific epigenetic repressive complex is necessary to effect downregulation. Further studies may pinpoint interaction of this complex with unique conformations of chromatin, and thus uncover novel drug targets, in particular for depression.

Qualifications

PhD in Molecular Neuroendocrinology, State University of New York

MD, State University of New York

BN, Columbia University

Recent Publications

Estradiol (E2)- and tamoxifen (Tmx)-bound ER-alpha (ERα) interact differentially with histone deacetylases 1 and 3 (HDACs 1 and 3)
Sharma, D., Liu, Y. & Uht, R. M., 1 Nov 2017, In : Journal of Steroid Biochemistry and Molecular Biology. 174, p. 128-132 5 p.

CpG methylation and the methyl CpG binding protein 2 (MeCP2) are required for restraining corticotropin releasing hormone (CRH) gene expression
Bhave, S. A. & Uht, R. M., 15 Oct 2017, In : Molecular and Cellular Endocrinology. 454, p. 158-164 7 p.

Mechanisms by which 17β-Estradiol (E2) Suppress Neuronal cox-2 gene expression
Stacey, W., Bhave, S. & Uht, R. M., 1 Sep 2016, In : PLoS ONE. 11, 9, e0161430.

Dexamethasone induces a putative repressor complex and chromatin modifications in the CRH promoter
Sharma, D., Bhave, S., Gregg, E. & Uht, R. M., 1 Jul 2013, In : Molecular Endocrinology. 27, 7, p. 1142-1152 11 p.

Hypothalamic and amygdalar cell lines differ markedly in mitochondrial rather than nuclear encoded gene expression
Dalwadi, D. A. & Uht, R. M., 21 Jun 2013, In : BMC Genomics. 14, 1, 413.

The androgen metabolite, 5α-Androstane-3β,17β-diol (3β-Diol), activates the oxytocin promoter through an estrogen receptor-β pathway
Hiroi, R., Lacagnina, A. F., Hinds, L. R., Carbone, D. G., Uht, R. M. & Handa, R. J., 1 May 2013, In : Endocrinology. 154, 5 , p. 1802-1812 11 p.

Estrogen receptors and the regulation of neural stress responses
Handa, R. J., Mani, S. K. & Uht, R. M., 1 Sep 2012, In : Neuroendocrinology. 96, 2, p. 111-118 8 p.

The ERβ ligand 5α-androstane, 3β,17β-diol (3β-diol) regulates hypothalamic oxytocin (Oxt) gene expression
Sharma, D., Handa, R. J. & Uht, R. M., 1 May 2012, In : Endocrinology. 153, 5, p. 2353-2361 9 p.

A role for the androgen metabolite, 5alpha androstane 3beta, 17beta Diol (3β-Diol) in the regulation of the hypothalamo-pituitary-adrenal axis
Handa, R. J., Sharma, D. & Uht, R. M., 1 Dec 2011, In : Frontiers in Endocrinology. 2, NOV, Article 65.

Histone deacetylase 1 (HDAC1) participates in the down-regulation of corticotropin releasing hormone gene (crh) expression
Miller, L., Foradori, C. D., Lalmansingh, A. S., Sharma, D., Handa, R. J. & Uht, R. M., 3 Aug 2011, In : Physiology and Behavior. 104, 2, p. 312-320 9 p.

Sponsored Projects

Glucocorticoid Receptor Mediated Regulation of CRH Gene (For: Shreyas Bhave)
Uht, R.
Intramural Research(UNTHSC)
1/01/15 → 31/08/16

GR-mediated Epigenetic Regulation of the CRH Gene
Uht, R.
NIMH: Mental Health
1/09/09 → 30/06/14

Mechanisms by which Estradiol (E2) Suppress Neuronal Cox-2 Expression (For: Winfred Stacey)
Uht, R.
Intramural Research(UNTHSC)
1/01/15 → 31/08/16

Role of DNA Methlyation in the Glucocorticoid Recept (GR)-Mediated Corticotropin Releasing Hormone (CRH) Down-regulation (For: Shreyas Bhave)
Uht, R.
Sigma Xi
1/01/15 → 31/01/16