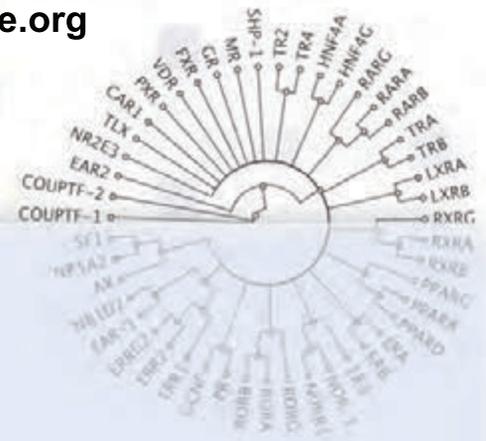


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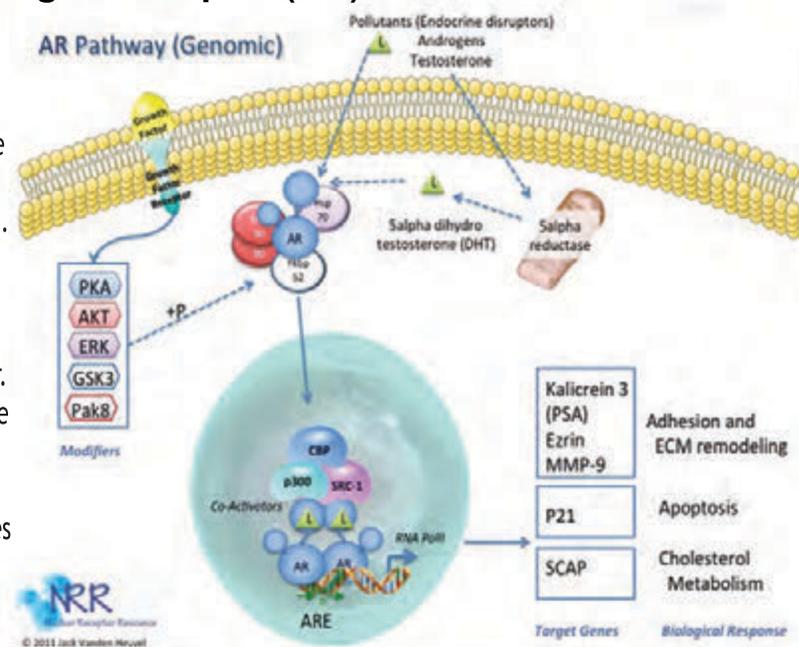


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Welcome to the Androgen Receptor (AR) Issue

The androgen receptor (AR) as the name implies is involved in the manifestation of the effects of androgenic hormones such as testosterone. As is the case for other nuclear receptors, the classical action of AR is to regulate gene transcriptional processes via AR nuclear translocation, response element binding, and recruitment of, or crosstalk with, transcription factors. AR also utilizes non-classical, non-genomic mechanisms of signal transduction. This receptor exerts most of its effects in sex hormone-dependent tissues of the body, but it is also expressed in many tissues not previously thought to be androgen sensitive. Aberrant AR activity can present as many clinical manifestations including androgen insensitivity syndrome and prostate cancer. Needless to say, the role of AR in prostate cancer and other diseases has made this protein an important target for drug discovery efforts. However, recent studies indicate that a variety of environmental and occupationally-relevant chemicals also interact with AR. Thus, despite years of study, the AR continues to surprise researchers with the complexity of its biological niche and the promiscuity of ligand binding. Please visit the Nuclear Receptor Resource (nrresource.org) to find out more information on AR and other nuclear receptors.



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Visit NRRResource.org today to see the new and improved site. We have added new articles, drawings, and pathways. The drawings can be used to add graphics to your slideshows or papers. There is also a Blog for discussions of new articles and research in the nuclear receptor field. We are also seeking contributors to help make the site and the newsletter a good resource. Please visit today, and offer any feedback to info@nrresource.org You can also sign up to get this newsletter via email!

Androgen Receptor: A Promiscuous Receptor with Important Biological Effects

Due to the importance of the genes it regulates, in particular in the prostate, AR remains one of the most studied members of the steroid hormone receptor family of genes. Normal prostate growth and development as well as prostate carcinogenesis are dependent on AR expression and function (Koochekpour, 2010). As an oversimplified statement, the prostate gland at any state of normal or neoplastic development requires AR activity to sustain growth. Accordingly, synthetic AR ligands with inhibitory activity have been developed to treat benign prostatic hyperplasia, prostate cancer, and hirsutism. Antiandrogens used for the clinical management of prostate cancer include bicalutamide, flutamide, nilutamide, cyproterone acetate, and investigational compounds MDV3100 and ARN-509. Male sexual differentiation is driven by androgens produced by the fetal testes and is entirely androgen-dependent. Consequently, it is expected that endocrine-disrupting chemicals (EDCs) that interfere with androgen action will have a greater impact on male developmental programming and reproductive tract maturation. Thus far, there are limited studies on screening of androgen receptor binding activity for a large number of chemicals. However, as reviewed elsewhere (Luccio-Camelo and Prins, 2011), there are many important environmental AR modulators including dichlorodiphenyltrichloroethanes (DDTs), bisphenol A (BPA), Vinclozolin, Linuron, Aldrin and Butylbenzylphthalate. The importance of the biology of AR, in terms of secondary sexual characteristics, prostate cancer, cholesterol metabolism and inflammation make it an important therapeutic target for drug discovery. However, the ability of a wide range of pollutants to regulate this key protein and disrupt AR signaling underscore the need to appreciate the promiscuity of this receptor in order to prevent untoward health consequences due to environmental exposure.

Read the full article at http://www.nrresource.org/nr_page_collection/androgen_receptor.html

New Human Androgen Receptor (AR) Assay System from INDIGO Biosciences

Androgen Receptor research just got easier with the new INDIGO Androgen Receptor Assay kit. This ready-to-use solution allows researchers to go from freezer-to-data in 24 hours with no need to transfect cells or optimize assays. Each kit uses stable-glow luciferase chemistry to produce results with excellent Z' scores and high signal-to-noise ratios. The INDIGO AR Assay kit joins the company's growing line of cell-based nuclear receptor assay kits which enable researchers to obtain data in four easy steps: Thaw, Feed, Dose, Read. The INDIGO AR Assay kit includes everything needed to check for agonist or antagonist activity, making it a complete 'lab-in-a-box.' Each kit contains engineered, optimized reporter cells designed to quantify human Androgen Receptor activity, recovery media, compound screening media, detection reagent, a positive control agonist and a tissue culture plate. All you provide is your compounds for screening! INDIGO Biosciences' proprietary cryopreservation process, CryoMite™, yields greater than 95% cell viability post-thaw and enables INDIGO Nuclear Receptor Assay Kits to be shipped anywhere in the world, making them ready to use when you are ready to test.

