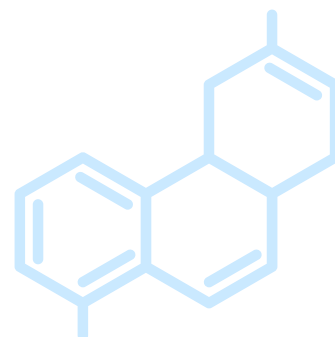# AhR Cell Bioassays for Therapeutic Drug Development

-High-throughput AhR-responsive cell-based reporter gene bioassay for rapid and sensitive identification and characterization of AhR agonist/antagonist -

The AhR is a ligand-activated nuclear receptor that plays a key regulatory role in endogenous physiological responses and is a target for development of novel therapeutic drugs for:

- **Cancer**
- **Inflamatory Bowel Disease/Colitis**
- **Rheumatoid Arthritis**
- **Asthma**
- **Psoriasis/Dermatitis**
- **Chronic Kidney Disease**
- **Stem Cell Pluripotency/Gene Therapy**
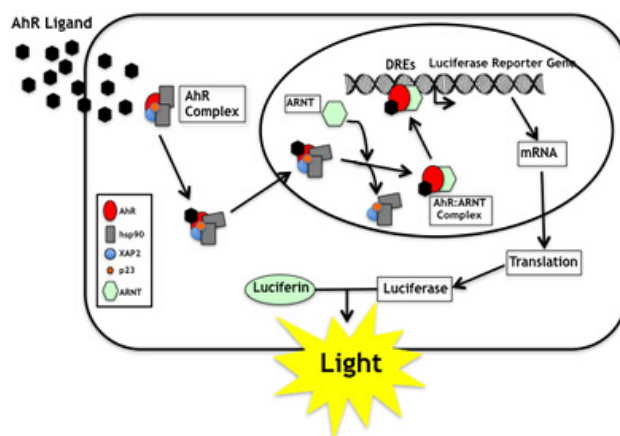
Given documented species differences in AhR ligand specificity and potency, stably transferred cell lines containing and Ahr-responsive luciferase reporter gene are available for a variety of species, including human, mouse, rat and guinea pig.

Cell Line Designation	Species	Cell Type	Parental Cell	AhR-responsive plasmid*
HG2L6.1c1	Human	Hepatoma	HepG2	pGudLuc6.1
H1L6.1c3	Mouse	Hepatoma	Hepa1c1c7	pGudLuc6.1
H4L1.1c4	Rat	Hepatoma	H4IIe	pGudLuc1.1
G16L1.1c8	Guinea Pig	Intestinal Adenocarcinoma	GPC16	pGudLuc1.1

*Han et al. (2004) Biofactors 20, 11-22.

These cell lines have application for:

- High throughput screening of chemical libraries for AhR agonists and antagonists.
- Identification and optimization of lead compounds for development of therapeutic agents.
- Detection and relative quantitation of AhR agonists in environmental, biological, food and feed samples, natural products, supplements, personal care products, consumer products and many other materials
- Effects-directed analysis to isolate and identify novel AhR agonists/antagonists present in extracts of diverse materials.

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