

Environmental monitoring is important to be able to act quickly if toxic levels of chemicals are present in environmental samples. Harmful effects of endocrine disrupting chemicals (EDCs) and emerging contaminants affect organisms causing a wide range of developmental, reproductive, neurological, or metabolic defects in humans and wildlife.

## Are Traditional Water Quality Methods Enough?

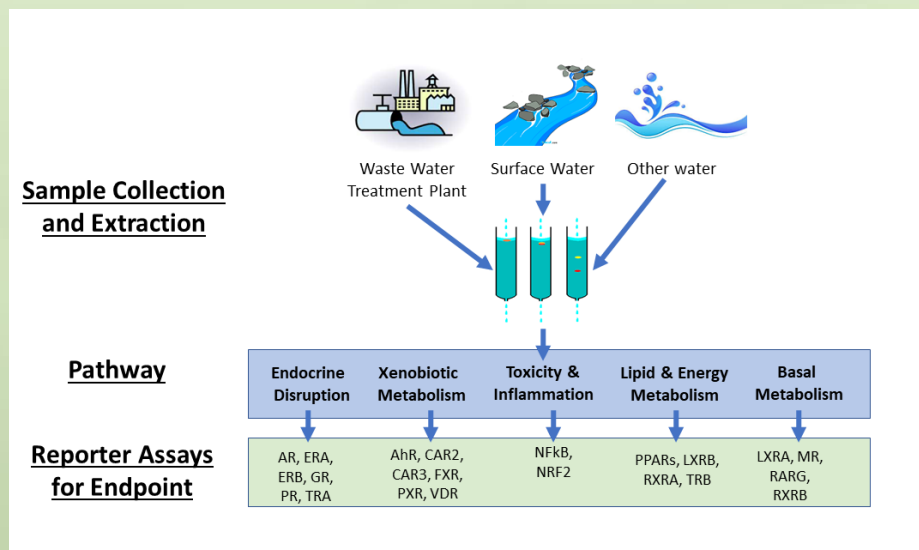
Traditional techniques rely on analyses and data for individual contaminants. Real world exposure generally occurs as mixtures of different chemical compounds. This presents risks to humans and the environment from:

- chemicals without toxicity information
- the presence and concentrations of other compounds
- chemicals that work together to increase the toxic potential

To understand the risk posed by complex samples, cell-based assays are needed to characterize cumulative effects on humans and other organisms.

## Functional Assays: The Next Wave in Evaluating Water Quality

Cell-based reporter assays such as those provided by INDIGO Biosciences screen for total bioactivity for a specific pathway of importance. They can detect the toxicity of unknown chemical pollutants and can account for their cumulative effects, simplifying the issues posed by complex mixtures in analytical methods.



INDIGO has an extensive list of cell-based bioassays that are predictive of cellular toxicity pathways including endocrine disruption, altered xenobiotic metabolism, and adaptive stress responses. View INDIGO's list of available reporter assays on the back.

# Assay Kits Available for use in Environmental Monitoring

Prod #	Receptor	Prod #	Receptor
<b>ENDOCRINE DISRUPTION</b>			
IB0300	Androgen Receptor (AR)	IB0020	Glucocorticoid Receptor (GR)
IB0040	Estrogen Receptor Alpha (ER $\alpha$ )	IB0500	Progesterone Receptor (PGR)
IB0041	Estrogen Receptor Beta (ER $\beta$ )	IB0100	Thyroid Hormone Receptor Alpha (TR $\alpha$ )
<b>XENOBIOTIC METABOLISM</b>			
IB0600	Aryl Hydrocarbon Receptor (AhR)	IB0060	Farnesoid X Receptor (FXR)
IB0092	Constitutive Androstane Receptor-2	IB0700	Pregnane X Receptor (PXR)
IB0090	Constitutive Androstane Receptor-3	IB0070	Vitamin D Receptor (VDR)
<b>TOXICITY &amp; INFLAMMATION</b>			
IB2400	Activator Protein-1 (AP-1)	IB1000	Nuclear Factor (erythroid-derived 2)-like 2 (Nrf2)
IB0900	Nuclear Factor kappa-light-chain enhancer of activated B cells (NF $\kappa$ B)	IB2500	Tumor Protein p53 (p53)
IB1800	Nuclear Factor of Activated T cells (NFAT)		
<b>LIPID &amp; ENERGY METABOLISM</b>			
IB0011	Peroxisome Proliferator-Activated Receptor Alpha (PPAR $\alpha$ )	IB0030	Liver X Receptor Beta (LXR $\beta$ )
IB0012	Peroxisome Proliferator-Activated Receptor Beta (PPAR $\beta$ )	IB0080	Retinoid X Receptor Alpha (RXR $\alpha$ )
IB0010	Peroxisome Proliferator-Activated Receptor Gamma (PPAR $\gamma$ )	IB0110	Thyroid Hormone Receptor Beta (TR $\beta$ )
<b>BASAL METABOLISM &amp; CENTRAL NERVOUS SYSTEM</b>			
IB0031	Liver X Receptor Alpha (LXR $\alpha$ )	IB0050	Mineralocorticoid Receptor (MR)
IB0220	Retinoic Acid Receptor Alpha (RAR $\alpha$ )	IB0810	Retinoid X Receptor Beta (RXR $\beta$ )
IB0200	Retinoic Acid Receptor Gamma (RAR $\gamma$ )	IB0082	Retinoid X Receptor Gamma (RXR $\gamma$ )

## INDIGO's Cell-Based Reporter Assay Kits & Screening Services for Environmental Monitoring:

- Detect cumulative toxicity in complex mixtures
- Can simplify complex sample testing
- Provide fast, clear, reproducible results