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Microbial Diversity and Bioinformatics

Environmental Endocrine-Disrupting Chemicals Act as Coactivator Binding Inhibitors for Estrogen Receptor β



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Time: 2026. 03. 10 Tue. 15:00

Venue: Auditorium, 1st Floor,

Interdisciplinary Research Building

跨領域科技研究大樓1樓演講廳

Host: Dr. Yin-Ru Chiang 江殷儒研究員



Abstract

Bisphenol A (BPA) is widely utilized as a fundamental component in the manufacture of polycarbonate plastics and epoxy resins around the world. Nonetheless, BPA is also identified as a prominent endocrine-disrupting chemical. Consequently, a variety of BPA derivatives and related substances have been developed and employed as alternatives to BPA. Despite the fact that the safety of these "next-generation bisphenols" has not been thoroughly assessed, their use has risen considerably. In this research, we examined around 200 BPA derivatives for their binding affinity to estrogen receptors ($ER\alpha$ and $ER\beta$) using radiolabelled 17β -estradiol and assessed their transcriptional activity in HeLa cells. We discovered that certain halogen-containing next-generation bisphenols suppressed the transcriptional activity of $ER\alpha$. Notably, we observed that many next-generation BPAs, such as BPC and BPAF, functioned as antagonists for ER, even though they are agonists for ER. We demonstrated that these next-generation bisphenols act as inhibitors of coactivator binding against ER.