PD-79

Bisphenol A (BPA) Induces Expression of Transforming Growth Factor (TGF) -β3 mRNA in the Preoptic Area (POA) of Adult Ovariectomized Rats, as Revealed by a cDNA Expression Array

Atsushi Fukushima, Toshiya Funabashi, Fukuko Kimura

Department of Physiology, Yokohama City University School of Medicine Yokohama 236-0004, Japan

We tried to identify BPA-responsible genes in the POA by a cDNA expression array. TWO weeks after ovariectomy, rats were subcutaneously injected with 10 mg BPA in sesame oil or with sesame oil alone as a control. Twenty-four h after the injection, the rats were killed and total RNAs were extracted from the POA. Within 588 genes, we successfully identified several genes including TGF-β3 that were differentially expressed in the POA of BPA-injected rats as compared with oil-injected rats. Next, we confirmed this finding by northern blot and found that the level of TGF- β3 mRNA in the POA of BPA-injected rats was significantly increased compared to that of oil-injected rats.

The present study suggests that BPA affects brain functions controlled by the POA by changing the expression of TGF-β3 mRNA. cDNA expression array is useful tool to identify putative genes which are involved in the action of BPA in the adult brain.