

Analysis of Chemicals with Estrogenic Activity using a Medaka Vitellogenin ELISA System

Hiroko Shimokawa,¹⁾ Yoko Ando,¹⁾ Kazuo Nishi,²⁾ Yasuhiko Hatano,²⁾ Haruki Mizukami,²⁾ Ryuzo Sakakibara¹⁾

¹⁾ Kyushu Women's University, ²⁾ EnBioTec Laboratories. CO., Ltd.

The risk of environmental chemicals with endocrine disrupting activity, either hormone agonists or antagonists, which can alter the hormonal balance in animals and people has been suggested. Among such environmental endocrine disrupters, environmental estrogens are chemicals that mimic estrogenic activities through binding estrogen receptors, and may affect the health of animals as well as humans. Assaying the fish plasma vitellogenin level is considered as a useful method for screening chemicals that act as estrogens, because vitellogenin is a fish protein inducible by estrogens. To determine the effect of environmental estrogens, we have developed a medaka (*Oryzias latipes*) vitellogenin ELISA system. In this study, to evaluate this medaka vitellogenin ELISA system, we analyzed vitellogenin concentration in plasma of male medaka exposed with various chemicals, such as β -estradiol, bisphenol A, *p*-nonyl-phenol, benzyl *n*-butyl-phthalate, genistein, kelthane, and 1, 2-benzopyrene.