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Oxidative Stress ELISA (8-isoprostane) kit

(iPF2 α -III, 15-isoprostane F2t, 8-epi-prostaglandin F2 α , 8-iso-prostaglandin F2 α)

Cat # 8iso1: ELISA kit for measuring 8-isoprostane in biological / wastewater samples

Cat # 8iso1R: 8-isoprostane ELISA Kit with removable strips:

This competitive ELISA kit is for determination of 8-isoprostane levels in biological samples. A typical standard curve of the ELISA is shown in the bottom left corner.

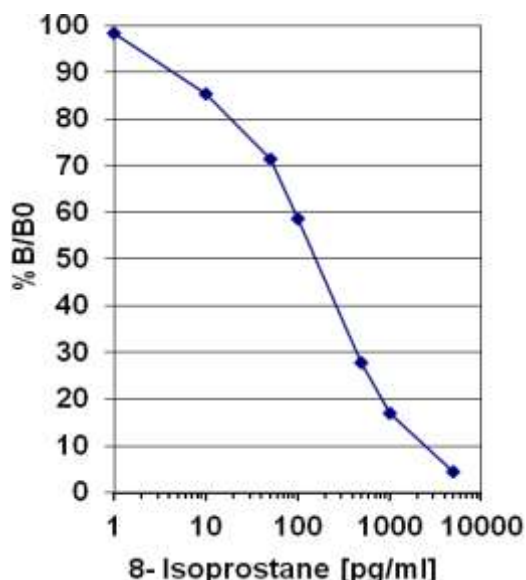
The isoprostanes are a family of eicosanoids of non-enzymatic origin produced by the random oxidation of tissue phospholipids by oxygen radicals¹. 8-epi-prostaglandin F2a is an in vivo index of oxidative injury and associated with increased coronary artery calcification (CAC).

A recent study using the 8-isoprostane ELISA revealed that rat hepatic 8-isoprostane levels increased in high fat (HF) diet-induced non-alcoholic fatty liver disease (NAFLD)¹⁵. Interestingly, telmisartan, an angiotensin II receptor antagonist (hypertension drug), significantly decreased the liver 8-isoprostane levels. Urinary excretion of 8-isoprostane increased in mice by aldosterone infusion-induced renal fibrosis. The level of 8-isoprostane excretion markedly decreased in osteopontin (involved in tumor promotion)-knock-out mice, suggesting that osteopontin is a therapeutic target for oxidative stress-induced kidney injury¹⁴. Levels of both renal NADPH oxidase subunit mRNA expression and urinary 8-isoprostane were increased in streptozotocin-induced diabetes mellitus (DM)¹³. 8-isoprostane has been examined as an exercise-induced muscle damage biomarker¹² and as a sewage biomarker for assessing community health¹². Yamamoto et al. showed that the use of AST-120 was related to improvement of oxidative stress (decrease in 8-isoprostane levels) in patients undergoing maintenance haemodialysis treatment.¹⁰ In utero diesel exhaust exposure of hyperlipidemic mice did not influence later life redox homeostasis⁸. A strong association between tobacco smoking and urinary 8-isoprostane levels was found in a large German study of older adult smokers^{1,3,4,5,9}. Soleus muscle from T2D-induced rats fed a high fat diet exhibited higher levels of 8-isoprostane in conjunction with increased mt DNA copy number and 8-OHdG⁶. Hyperoxia increased 8-isoprostane in lung of wild type mice but not in soluble epoxide hydrolase knockout mice⁷.

Diluted urine or cell culture media without extraction are suitable for the ELISA. Each kit is suitable for triplicate analyses of up to 24 samples contains one 96 well plate, one vial of 8-isoprostane standard, one vial of 8-isoprostane-conjugated horseradish peroxidase (HRP), and buffers for sample and HRP dilutions, and plate washing.

References

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