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User's Manual

Rat FABP4/A-FABP ELISA Kit

REF **DEIABL521**

Σ **96T**

RUO

This product is for research use only and is not intended for diagnostic use.

For illustrative purposes only. To perform the assay the instructions for use provided with the kit have to be used.

Creative Diagnostics

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PRODUCT INFORMATION

Intended Use

The Rat FABP4/AFABP ELISA Kit is used for the quantitative measurement of rat FABP4/AFABP in serum, plasma, tissue culture medium and other biological media.

General Description

Adipocyte-specific fatty acid-binding protein (AFABP), also designated aP2 and FABP4, belongs to the fatty acid-binding protein super family whose members have relative molecular masses of ~15, 000, and it is exclusively expressed in differentiated adipocytes. FABP4 is a predominant cytosolic protein of mature adipocytes, accounting for ~6 % of total cellular proteins. This protein may be an important regulator of systemic insulin sensitivity and lipid and glucose metabolism. Mice deficient in aP2/FABP4 are protected from development of hyperinsulinemia, hyperglycemia, and insulin resistance in the context of both dietary and genetic obesity. Adipocytes obtained from aP2/FABP4-null mice had markedly reduced efficiency of lipolysis in vivo and in vitro and exhibited a 2- to 3-fold decrease in fatty acid release, suggesting that FABP4 mediates efflux of fatty acids in normal physiology. Although the physiological consequences of aP2/FABP4 deficiency have been predominantly linked to changes in adipocytes, it has reported that the presence of aP2/FABP4 in macrophages and have shown that aP2/FABP4 expression can be induced by peroxisome proliferatoractivated receptor gamma (PPAR gamma) agonists, by toll-like receptor agonists, oxidized LDL, and the differentiation of monocytes to macrophages and can be suppressed by treatment with a cholesterol-lowering statin. In these cells, aP2/FABP4 modulates inflammatory cytokine production and cholesterol ester accumulation. In apolipoprotein E-deficient mice, ablation of the aP2/FABP4 gene conferred remarkable protection against atherosclerosis, which commonly occurs in this rat strain. Taken together, these animal studies demonstrate that aP2/FABP4, by integrating metabolic and inflammatory pathways, provides a key link between various components of metabolic syndrome. Moreover, Masato Furuhashi, M. et al. (2007) reported that an orally active small-molecule inhibitor of aP2/FABP4 is an effective therapeutic agent against severe atherosclerosis and type 2 diabetes in mouse models.

Reagents And Materials Provided

Microplate

10X Wash Buffer

Dilution Buffer

Rat FABP4/A-FABP Standard

HRP conjugated Detection Antibody

Substrate Reagent

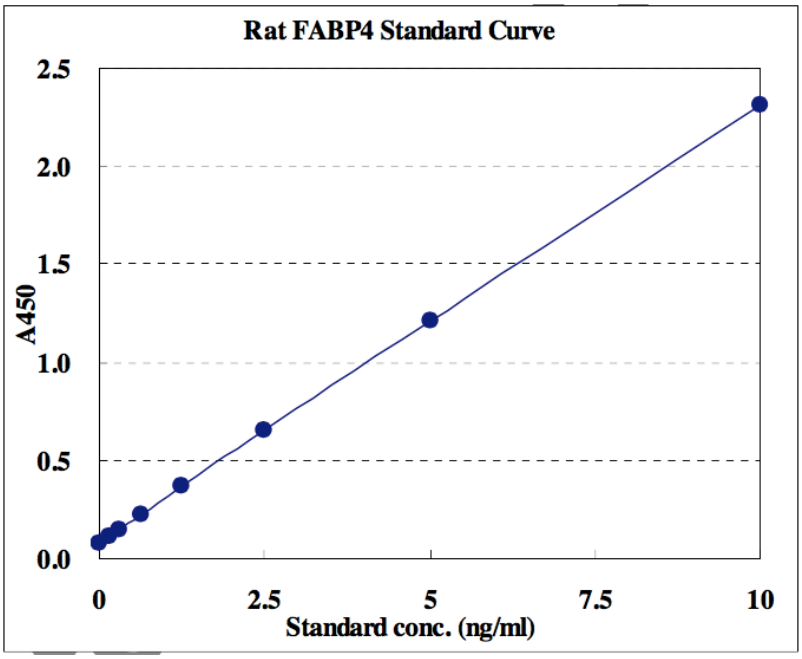
Stop Solution

Storage

- Upon receipt store all components at 4°C.

- Don't expose reagents to excessive light.

Typical Standard Curve



Precision

Intra-assay (Within-Run, n=16), CV=2.5-4.0 %

Inter-assay (Run-to-Run, n=5), CV=1.38-4.45 %

Sensitivity

Twenty-four assays were evaluated and the minimum detectable dose (MDD) of rat FABP4/A-FABP. The MDD (defined as such a concentration of rat FABP4/A-FABP giving absorbance higher than mean absorbance of blank* plus three standard deviations of the absorbance of blank: A blank + 3*SD blank) is better than 92.5 pg/ml of sample.