Recombinant Human FABP2/I-FABP

Catalog Number: 2694-CL/CF

DESCRIPTION

Source	*E. coli*-derived human FABP2/I-FABP protein Ala2-Asp132, with a C-terminal 6-His tag Accession # P12104
N-terminal Sequence Analysis	Ala2
Predicted Molecular Mass	16 kDa

SPECIFICATIONS

SDS-PAGE	15 kDa, reducing conditions
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Supplied as a 0.2 µm filtered solution in PBS and Glycerol. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 6 months from date of receipt, -70 °C as supplied. • 3 months, -70 °C under sterile conditions after opening.

BACKGROUND

Fatty acid binding protein-2 (FABP-2; also named I- or intestinal FABP) is a member of a large superfamily of lipid binding proteins that are expressed in a tissue specific manner (1-3). FABP-2 is one of nine cytoplasmic FABPs that are 14-15 kDa in size and range from 126-134 amino acids (aa) in length (2). Although all are highly conserved in their tertiary structure, there is only modest aa identity between any two members. Nevertheless, based on aa sequence, the nine FABP family members have been shown to form three subgroups, with FABP-2/I-FABP linked with liver/L-FABP and heart/H-FABP (2). The designation of a tissue type, such as intestinal, does not suggest the binding protein is universally expressed in all cell types that make up the organ or tissue. Human I-FABP, the product of the FABP-2 gene, is a 132 aa cytosolic protein that shows a flattened β-barrel structure (called a β-clam) generated by a series of antiparallel β-strands and two α-helices (1, 2, 4). Preferred ligands for FABP-2 include sixteen to twenty carbon long chain fatty acids (4). It is suggested that ligands first bind to the outside of the molecule, and this binding subsequently induces a conformational change in the binding protein, resulting in "internalization" of the ligand (1). An Ala-to-Thr polymorphism at position #54 has been reported to potentially impact FABP-2 function (2). This polymorphism has been suggested to be associated with an increased risk of type II diabetes. To date, the evidence appears to be equivocal (1, 2). This polymorphism may, however, have unusual metabolic effects depending upon the type of diet involved (1, 5). Human FABP-2 is 78%, 82% and 86% aa identical to mouse, rat and canine FABP-2, respectively. It also shows 33% and 24% aa identity to human H-FABP and L-FABP, respectively. FABP-2 is proposed to transport fatty acids (FA) into cells, increase FA availability to enzymes, protect cell structures from FA attack, and target FA to transcription factors in the nuclear lumen (3). The binding affinity of Recombinant Human FABP2/I FABP (Catalog # 2694-CL/CF) for the synthetic ligand *cis*-parinaric acid had historically been measured at R&D Systems by fluorescence titration (6), but *cis*-parinaric acid is no longer commercially available and testing is discontinued. Historically, half-maximal fluorescence of 3 µM Recombinant Human FABP2/I FABP was achieved with approximately 3 µM *cis*-paranaric acid.

References:

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6. Nemecz, G. *et al.* (1991) Arch. Biochem. Biophys. **286**:300.

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