

DESCRIPTION

Source	<i>E. coli</i> -derived		
	MHHHHHH	GS	Mouse FABP4/A-FABP (Met1-Ala132) Accession # P04117
	N-terminus		C-terminus

N-terminal Sequence Analysis Met

Predicted Molecular Mass 16 kDa

SPECIFICATIONS


SDS-PAGE	14 kDa, reducing conditions
Activity	Bioassay data are not available.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in MES and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 mg/mL in water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity not tested



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R&D Systems proteins are almost always sold with a bioassay to indicate activity. However, we recognize that sometimes proteins might be novel, and their bioactivity may not be well understood. In addition, some researchers may wish to use polypeptides to make antibodies. To facilitate the advancement of new science, we now offer our Innovator Series of proteins.

BACKGROUND

Fatty acid binding protein-4 (FABP4; also named A- (adipocyte) FABP, ALBP, or adipocyte protein 2 (aP2)) is a member of a large superfamily of lipid binding proteins that are expressed in a tissue specific manner (1, 5, 6). FABP4 is one of ten cytoplasmic FABPs that are 14-15 kDa in size and range from 126-140 amino acids (aa) in length (1, 2, 3). Although all are highly conserved in their tertiary structure, there is only modest aa identity between any two members. The FABP family members are subdivided based on organ or tissue type it was originally expressed or identified; liver- (L-FABP), intestine- (I-FABP), heart- (H-FABP), adipocyte- (A-FABP), epidermal- (E-FABP), ileal- (II-FABP), brain- (B-FABP), myelin- (M-FABP) and testis-FABP (T-FABP) (1). Mouse A- FABP, the product of the FABP4 gene, is a 132 aa cytosolic protein that shows a flattened beta -barrel structure generated by a series of antiparallel beta -strands and two alpha -helices (4, 8). FABP4 is able to bind long-chain fatty acids, retinoic acids or eicosanoids with one mol of ligand bound per mole of protein (1, 8, 9). 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 (4, 7, 9). Mouse FABP4 is 92%, 94% and 91% aa identical to human, rat and canine FABP4, respectively. It also shows 26% and 28% aa identity to mouse L-FABP and I-FABP, respectively.

References:

1. Smathers, R & Petersen, D. (2011) *Human Genomics* **5**:170.
2. Storch, J. & Thumser, AE. (2000) *Biochim Biophys Acta*. **1486**:28.
3. Zimmerman, A.W. & Veerkamp, J.H. (2007) *Protein Sci.* **9**:2042.
4. Bernlohr, D. *et al.* (1997) *Ann. Rev. of Nut.* **17**:277.
5. Zimmerman, A.W. and J.H. Veerkamp (2002) *Cell. Mol. Life Sci.* **59**:1096.
6. Haunerland, N.H. and F. Spener (2004) *Prog. Lipid Res.* **43**:328.
7. Xu Z. *et al.* (1992) *Biochemistry.* **31**:3484.
8. Matarese, V. & Bernlohr, D. (1988) *J Biol Chem.* **263**:14544.
9. Majava, V. *et al.* (2010) *PLoS One.* **5**:e10300.