

# PRODUCT INFORMATION



## DBI (human, recombinant)

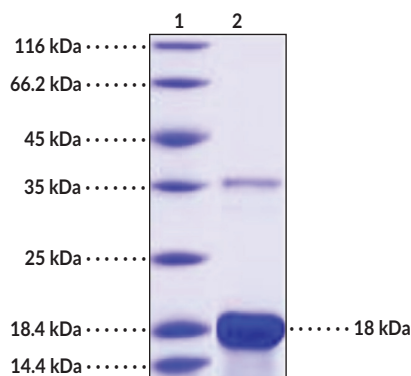
Item No. 42156

### Overview and Properties

<b>Synonyms:</b>	ACBP, ACBD1, ACBP-1a, Acyl-CoA-binding Protein, CCK-RP, Cholecystokinin-releasing Peptide, Diazepam-binding Inhibitor, Endozepine
<b>Source:</b>	Recombinant human N-terminal His-tagged DBI expressed in <i>E. coli</i>
<b>Amino Acids:</b>	1-87 (full length)
<b>Uniprot No.:</b>	P07108
<b>Molecular Weight:</b>	14 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Purity:</b>	≥95% estimated by SDS-PAGE
<b>Supplied in:</b>	Lyophilized from sterile PBS, pH 7.4
<b>Protein Concentration:</b>	<i>batch specific</i> mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2: DBI

**SDS-PAGE Analysis of DBI.** This protein has a calculated molecular weight of 14 kDa. It migrates as an approximately 18 kDa band in SDS-PAGE under reducing conditions.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
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## Description

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Diazepam-binding inhibitor (DBI), also known as acyl-CoA-binding protein 1a (ACBP-1a), is a lipid-binding protein and ligand of the mitochondrial benzodiazepine receptor.<sup>1-3</sup> It is composed of an ACBP domain, which binds saturated and unsaturated medium- and long-chain acyl-CoAs.<sup>1,2,4</sup> DBI undergoes extensive alternative splicing, is ubiquitously expressed, and localizes to the nucleus, cytoplasm, endoplasmic reticulum, and Golgi.<sup>5-7</sup> It is involved in acyl-CoA transport and autophagy, and its expression is regulated by peroxisome proliferator-activated receptor  $\gamma$  (PPAR $\gamma$ ) and sterol regulatory element binding proteins (SREBPs).<sup>4,5,8,9</sup> Recombinant DBI reduces fatty acid oxidation and glycemia and increases food intake in mice.<sup>8</sup> Plasma levels of DBI are decreased in patients with anorexia nervosa and increased in patients with obesity. The SNP variant DBI<sup>V88M</sup> is associated with anxiety with panic attacks.<sup>10</sup> Cayman's DBI (human, recombinant) protein consists of 122 amino acids and has a calculated molecular weight of 14 kDa. It migrates as an approximately 18 kDa band in SDS-PAGE under reducing conditions.

## References

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1. Gallego, S.F., Sporenger, R.R., Neess, D., *et al.* Quantitative lipidomics reveals age-dependent perturbations of whole-body lipid metabolism in ACBP deficient mice. *Biochim. Biophys. Acta* **1862**(2), 145-155 (2017).
2. Decker, C., Miro Obradors, M.J., Sillence, D.J., *et al.* Phorbol ester-sensitive phospholipase D is mainly localized in the endoplasmic reticulum of BHK cells. *Biochem. J.* **320**(Pt 3 (Pt 3)), 885-890 (1996).
3. James, M.L., Selleri, S., and Kassiou, M. Development of ligands for the peripheral benzodiazepine receptor. *Curr. Med. Chem.* **13**(17), 1991-2001 (2006).
4. Rasmussen, J.T., Faergeman, N.J., Kristiansen, K., *et al.* Acyl-CoA-binding protein (ACBP) can mediate intermembrane acyl-CoA transport and donate acyl-CoA for  $\beta$ -oxidation and glycerolipid synthesis. *Biochem. J.* **299**(Pt 1), 165-170 (1994).
5. Nitz, I., Döring, F., Schrezenmeir, J., *et al.* Identification of new acyl-CoA binding protein transcripts in human and mouse. *Int. J. biochem. Cell Biol.* **37**(11), 2395-2405 (2005).
6. Nitz, I., Kruse, M.-L., Klapper, M., *et al.* Specific regulation of low-abundance transcript variants encoding human Acyl-CoA binding protein (ACBP) isoforms. *J. Cell Mol. Med.* **15**(4), 909-927 (2011).
7. Hansen, J., Faergeman, N.J., Kragelund, B.B., *et al.* Acyl-CoA-binding protein (ACBP) localizes to the endoplasmic reticulum and Golgi in a ligand-dependent manner in mammalian cells. *Biochem. J.* **410**(3), 463-472 (2008).
8. Pedro, J.M.B.-S., Sica, V., Martins, I., *et al.* Acyl-CoA-binding protein is a liogenic factor that triggers food intake and obesity. *Cell Metab.* **30**(4), (2019).
9. Ettinger, S.L., Sobel, R.A., Whitmore, T.G., *et al.* Dysregulation of sterol response element-binding proteins and downstream effectors in prostate cancer during progression to androgen independence. *Cancer Res.* **64**(6), 2212-2221 (2004).
10. Thoeringer, C.K., Binder, E.B., Salyakina, D., *et al.* Association of a Met88Val diazepam binding inhibitor (DBI) gene polymorphism and anxiety disorders with panic attacks. *J. Psychiatr. Res.* **41**(7), 579-584 (2007).

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