

PRODUCT INFORMATION



α -Fetoprotein (human, recombinant)

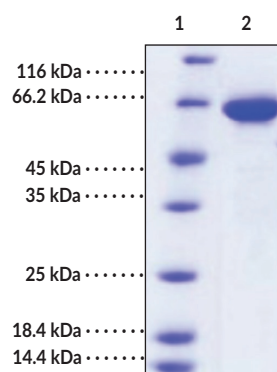
Item No. 38065

Overview and Properties

Synonyms:	AFP, FETA, α -Fetoglobulin
Source:	Recombinant C-terminal human IgG1 Fc-tagged α -fetoprotein expressed in HEK293 cells
Amino Acids:	19-609
Uniprot No.:	P02771
Molecular Weight:	93.5 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 90\%$ estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	< 1.0 EU/ μ g, determined by the LAL endotoxin assay
Bioactivity:	See figures for details

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

Image



Lane 1: MW Markers
Lane 2: α -Fetoprotein

SDS-PAGE Analysis of α -Fetoprotein. This protein has a calculated molecular weight of 93.5 kDa.

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
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

α -Fetoprotein is a glycoprotein and member of the albuminoid gene family and is involved in extracellular transport, cell proliferation, and the immune response.^{1,2} It is composed of a single polypeptide chain with three domains that form a V shape, the inside of which comprises the ligand-binding domain, and contains 15 disulfide bridges and one or more glycosylation sites depending on the species.¹ There are a variety of isoforms and conformational variants of α -fetoprotein, and it contains several major and minor antigenic sites.² α -Fetoprotein is produced by the embryonic yolk sac and fetal liver and levels are highest prenatally.¹ It transports a variety of molecules in the circulation, including fatty acids, bilirubin, estrogens, and certain metal ions and is involved in the regulation of cell proliferation and the immune response in developmental and pathological states.^{1,3} Maternal serum or amniotic fluid levels of α -fetoproteins have been used as preliminary diagnostic markers for Down's syndrome, neural tube defects, and other embryonic abnormalities during pregnancy.^{1,4} In adults, increased levels of serum α -fetoprotein are positively correlated with primary liver cancers, such as hepatoblastoma and hepatocellular carcinoma, germ cell tumors, such as yolk sac tumors, and ataxia telangiectasia.⁴ Cayman's α -Fetoprotein (human, recombinant) protein is a disulfide-linked homodimer. The reduced monomer, composed of α -fetoprotein (amino acids 19-609) fused to human IgG1 Fc at its C-terminus, consists of 832 amino acids, has a calculated molecular weight of 93.5 kDa, and a predicted N-terminus of Arg19 after signal peptide cleavage.

References

1. Gillespie, J.R. and Uversky, V.N. Structure and function of α -fetoprotein: A biophysical overview. *Biochim. Biophys. Acta* **1480**(1-2), 41-56 (2000).
2. Mizejewski, G.J. Alpha-fetoprotein structure and function: Relevance to isoforms, epitopes, and conformational variants. *Exp. Biol. Med. (Maywood)* **226**(5), 377-408 (2001).
3. Munson, P.V., Adamik, J., and Butterfield, L.H. Immunomodulatory impact of α -fetoprotein. *Trends Immunol.* **43**(6), 438-448 (2022).
4. Murray, M.J. and Nicholson, J.C. α -Fetoprotein. *Arch. Dis. Child. Educ. Pract. Ed.* **96**(4), 141-147 (2011).

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