Data Sheet (Cat.No.TMPY-05528)

TargetMol

Apolipoprotein E/APOE3 Protein, Human, Recombinant (His & Trx), Biotinylated

General Information

Synonyms: APO-E;LDLCQ5;LPG;ApoE4;AD2;apolipoprotein E

Protein Construction: A DNA sequence encoding the human APOE (P02649) (Lys 19-His 317) was fused with a Trx tag at the N-terminus. The purified protein was biotinylated in vitro. Predicted N terminal: Met

Species: Human

Expression Host: E. coli

Accession: P02649

Molecular Weight: 51.3 kDa (predicted)

QC Testing

Biological Activity: Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.

Purity: > 75 % as determined by SDS-PAGE

Endotoxin: Please contact us for more information.

Formulation: Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Apolipoprotein E (ApoE) is a 34.2 kDa glycosylated protein with 299 amino acid residues. There are three isoforms in human (apoE2, apoE3, and apoE4) due to different amino acid residues at positions 112 and 158. ApoE is synthesized predominantly in the liver, but also by cells in the spleen, brain, lung, kidney, ovary, adrenal, and muscle tissues. Hepatic parenchyma cells are the main apoE producing cells in mammalian body, probably

accounting for two thirds to three fourths of the plasma apoE . In the nervous system, apoE mRNA is present in neurons, astrocytes, ependymal cells, nonmyelinating Schwann cells, but not in microglia, oligodendroglia, choroidal cells, or myelinating Schwann cells. ApoE produced by mammalian cells exists in different forms, monomers, dimers, modified, unmodified, lipid-rich, and lipid-poor, and so forth. ApoE plays a double-role in immune responses. Both apoE containing lipoproteins and multimers of synthetic apoE peptides inhibited proliferation of cultured lymphocytes by inhibiting DNA synthesis and reducing phospholipid turnover in T cells. ApoE can also affect innate and acquired immune responses in vitro by its ability to suppress stimulation of cultured neutrophils. ApoE can bind lipopolysaccharide (LPS), attenuate the inflammatory response, and thus reduce LPS induced lethality. Injection of LPS stimulated higher expression of inflammatory cytokines like interleukin (IL)-1β, IL-12, and interferon-γ (IFN-γ), as well as IL-6.

Reference

Mahley RW. (1988) Apolipoprotein E: cholesterol transport protein with expanding role in cell biology. Science. 240 (4852): 622-30.

Aleshkov S,et al.(1989) Interaction of nascent apoe2, apoe3, and apoe4 isoforms expressed in mammalian cells with amyloid peptide. Relevance to Alzheimer's disease. Biochemistry. 36(34): 10571-80.

Hussain MM,et al.(1997) Synthesis, modification, and flotation properties of rat hepatocyte apolipoproteins. Biochimica et Biophysica Acta. 101(1): 90-101.