

Apolipoprotein E/APOE3 Protein, Human, Recombinant (hFc)

General Information

Synonyms:	APOE;Apo-E;Apolipoprotein E;APOE3;apolipo E
Protein Construction:	Lys19-His317
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P02649
Molecular Weight:	59.76 kDa (predicted). Due to glycosylation, the protein migrates to 60-70 kDa based on Tris-Bis PAGE result.

QC Testing

Biological Activity:	Human TREM2, His Tag captured on CM5 Chip via anti-his antibody can bind Human APOE3, hFc Tag with an affinity constant of 0.41 μM as determined in SPR assay.
Purity:	> 95% as determined by Tris-Bis PAGE
Endotoxin:	< 1.0 EU/ μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS (pH 7.4). Typically, 8% trehalose is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 $\mu\text{g}/\text{ml}$. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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 lipid carrier in both the peripheral and the central nervous systems. Lipid-loaded apoE lipoprotein particles bind to several cell surface receptors to support membrane homeostasis and injury repair in the brain. Considering prevalence and relative risk magnitude, the $\epsilon 4$ allele of the APOE gene is the strongest genetic risk factor for late-onset Alzheimer's disease (AD).

Reference

Zhao N, et al. Apolipoprotein E, Receptors, and Modulation of Alzheimer's Disease. Biol Psychiatry. 2018 Feb 15;83(4):347-357. doi: 10.1016/j.biopsych.2017.03.003. Epub 2017 Mar 14. PMID: 28434655; PMCID: PMC5599322.

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