

ANGPTL2 Protein, Mouse, Recombinant (hFc)

General Information

Synonyms:	Arp2;AI593246;AW260363;angiopoietin-like 2
Protein Construction:	A DNA sequence encoding the mouse ANGPTL2 (Q9R045) (Asp245-His493) was expressed with the Fc region of human IgG1 at the N-terminus. Predicted N terminal: Glu
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q9R045
Molecular Weight:	57.5 kDa (predicted); 58 kDa (reducing condition, due to glycosylation)

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:	> 95 % as determined by SDS-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, 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

The angiopoietin-like protein (ANGPTL) family is homologous to angiopoietins but does not bind to the Tie2 receptor. The function of ANGPTLs has been elucidated largely in the context of angiogenesis and lipid metabolism. Morinaga et al. demonstrated that genetic depletion of Angptl2 confers amelioration of the mouse kidney fibrosis induced by a unilateral ureteral obstruction, implicating that ANGPTL2, predominantly in the renal tubular compartments, activates the transforming growth factor-β signaling and vice versa through miR-221.

Angiopoietin-like protein 2 (ANGPTL2) maintains tissue homeostasis by inducing inflammation and angiogenesis. It is produced in infiltrating immune cells or resident cells, such as adipocytes, vascular endothelial cells, and tumor cells. The classic sequential cascade of *P. gingivalis* LPS → inflammatory cytokine induction is well established. However, in the current study, we reveal a novel cascade comprising sequential *P. gingivalis* LPS → ANGPTL2 → integrin $\alpha 5\beta 1$ → inflammatory cytokine induction, which might be responsible for inducing potent periodontal disorganization activity in gingival epithelial cells. Via this pathway, ANGPTL2 functions in the pathogenesis of periodontitis and contributes to prolonging chronic inflammation in patients with systemic disease. That MAC-3-positive immune cells, including infiltrating bone marrow-derived macrophages and activated microglia, express abundant angiopoietin-like protein (ANGPTL) 2 in ischemic mouse brain in a transient middle cerebral artery occlusion (MCAO) model. Both neurological deficits and infarct volume decreased in transient MCAO model mice established in Angptl2 knockout (KO) relative to wild-type mice. Acute brain inflammation after ischemia-reperfusion, as estimated by expression levels of pro-inflammatory cytokines such as interleukin (IL)-1 β and tumor necrosis factor alpha (TNF)- α , was significantly suppressed in Angptl2 KO compared to control mice.

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