

ACE Antibody / Angiotensin I Converting Enzyme (FY13058)

Catalog No.	Formulation	Size
FY13058	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	P12821
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This ACE antibody is available for research use only.

Description

ACE antibody detects Angiotensin I converting enzyme, a zinc-dependent peptidase that plays a pivotal role in blood pressure regulation and electrolyte balance. The UniProt recommended name is Angiotensin I converting enzyme (ACE). This membrane-bound enzyme catalyzes the conversion of angiotensin I to the potent vasoconstrictor angiotensin II and degrades bradykinin, thereby modulating vascular tone and fluid homeostasis.

Functionally, ACE antibody identifies a 1,306-amino-acid type I membrane glycoprotein composed of two homologous catalytic domains (N- and C-domains) and a short cytoplasmic tail. ACE is expressed in endothelial cells, epithelial cells, and kidney proximal tubules, where it acts as a key enzyme of the renin-angiotensin system (RAS). By generating angiotensin II, ACE promotes vasoconstriction, sodium retention, and aldosterone secretion, contributing to blood pressure regulation.

The ACE gene is located on chromosome 17q23.3 and encodes multiple isoforms, including somatic ACE and testis-specific ACE (tACE). Somatic ACE is primarily found on the luminal surface of endothelial cells in lungs, heart, and kidneys, whereas tACE functions in sperm maturation and fertility. ACE expression is regulated by inflammatory cytokines, hormonal signaling, and mechanical stress on vascular endothelium.

Clinically, dysregulation of ACE activity is linked to hypertension, heart failure, diabetic nephropathy, and atherosclerosis. ACE inhibitors, which block enzyme activity, are among the most effective therapeutics for cardiovascular disease management. Beyond cardiovascular roles, ACE contributes to immune function by degrading inflammatory peptides and influencing hematopoietic stem cell mobilization. Elevated ACE levels are also diagnostic for sarcoidosis and other granulomatous disorders.

ACE antibody is widely used in cardiovascular, renal, and molecular physiology research. It is suitable for immunohistochemistry, western blotting, and flow cytometry to detect ACE expression and distribution in tissues. This antibody supports studies of vascular biology, RAS signaling, and peptide metabolism. In clinical and translational settings, ACE serves as a biomarker for endothelial activation and inflammatory vascular disease.

Structurally, ACE consists of two catalytic domains containing zinc-binding motifs (HEMGH sequence) that coordinate enzymatic hydrolysis of peptide bonds. Its extracellular domain is heavily glycosylated, conferring stability and resistance to proteolysis. NSJ Bioreagents provides ACE antibody reagents validated for use in cardiovascular physiology, renin-angiotensin system, and molecular enzyme research.

Application Notes

Optimal dilution of the ACE antibody should be determined by the researcher.

Immunogen

E.coli-derived human ACE recombinant protein (Position: R149-C545) was used as the immunogen for the ACE antibody.

Storage

After reconstitution, the ACE antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.