

Recombinant Rat Agt protein, His/S-tagged

Cat. No. Agt-254R **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Rat Agt fused with His/S tag was expressed in E. coli.
Species	Rat
Source	E.coli
Description	Angiotensinogen, also known as AGT and SerpinA8, is a member of the serpin family. It is an α-2-globulin that is produced constitutively and released into the circulation mainly by the liver. Angiotensinogen is a essential component of the renin-angiotensin system (RAS) and a potent regulator of blood pressure. Angiotensinogen can be schematically considered to consist of a combination of an angiotensin I (Ang I) function, located at the N-terminal end, and the presence of a serpin (serine protease inhibitor) structure at the opposite end. Angiotensinogen is cleaved into three chains: Angiotensin-1 (Ang I), Angiotensin-2 (Ang II), and Angiotensin-3 (Ang III). Angiotensin-1 is a substrate of ACE (angiotensin converting enzyme) that removes a dipeptide to yield the physiologically active peptide angiotensin-2. Angiotensin-1 and angiotensin-2 can be further processed to generate angiotensin-3, angiotensin-4. Angiotensin 1-7 is cleaved from angiotensin-2 by ACE2. Angiotensin-2 acts directly on vascular smooth muscle as a potent vasoconstrictor, affects cardiac contractility and heart rate through its action on the sympathetic nervous system. Defects in AGT are associated with susceptibility to essential hypertension and renal tubular dysgenesis (RTD). Several serpins (antithrombin, maspin, pigment epithelial-derived factor, and kallistatin) have been recently shown to exert an antiangiogenic activity, suggesting a common mechanism of endothelial cell proliferation and

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migration. Angiotensinogen/AGT and its renin-cleaved product, des(Ang I)AGT, are also angiogenesis inhibitors, both in vitro and in vivo at concentrations within the range of those observed in plasma. The Angiotensinogen products, that is angiotensin II and possibly angiotensin II-related products, have been found to act locally in modulating adipose tissue growth in an autocrine/paracrine manner. The transient or chronic overexpression of angiotensinogen in adipose tissue favors lipogenesis in adipocytes and leads to a 'vicious' circle whereby adipose tissue development is further increased.

Form	Lyophilized from sterile PBS, pH 7.4
Purity	> 95 % as determined by SDS-PAGE
Storage	Store at -70 centigrade. Avoid repeated freeze/thaw cycles.

GENE INFORMATION

Gene Name	Agt angiotensinogen (serpin peptidase inhibitor, clade A, member 8) [<i>Rattus norvegicus</i>]
Official Symbol	Agt
Synonyms	AGT; angiotensinogen (serpin peptidase inhibitor, clade A, member 8); angiotensinogen; serpin A8; angiotensin II; angiotensinogen (PAT); Ang; PAT; ANRT; AngII;
Gene ID	24179
mRNA Refseq	NM_134432
Protein Refseq	NP_602308

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Chromosome Location	19q12
Pathway	ACE Inhibitor Pathway, organism-specific biosystem; Adipogenesis, organism-specific biosystem; Class A/1 (Rhodopsin-like receptors), organism-specific biosystem; G alpha (q) signalling events, organism-specific biosystem; GPCR downstream signaling, organism-specific biosystem; GPCR ligand binding, organism-specific biosystem; Peptide ligand-binding receptors, organism-specific biosystem;
Function	acetyltransferase activator activity; acetyltransferase activator activity; alpha1-adrenergic receptor activity; angiotensin receptor binding; hormone activity; serine-type endopeptidase inhibitor activity; type 1 angiotensin receptor binding; type 1 angiotensin receptor binding; type 2 angiotensin receptor binding; type 2 angiotensin receptor binding;

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