

## PSME3 Protein, Human (His)

Cat. No.:	HY-P76554
Synonyms:	Proteasome activator complex subunit 3; REG-gamma; PA28g; PSME3
Species:	Human
Source:	E. coli
Accession:	P61289 (M1-Y254)
Gene ID:	10197
Molecular Weight:	28-33 kDa

### PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 $\mu$ m filtered solution of 50 mM Tris, 200 mM NaCl, 40% Glycerol, pH 8.0. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/ $\mu$ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

PSME3, a subunit of the 11S REG-gamma (also known as PA28-gamma) proteasome regulator, forms a doughnut-shaped homoheptamer that associates with the proteasome. This homoheptamer plays a crucial role in activating the trypsin-like catalytic subunit of the proteasome while simultaneously inhibiting the chymotrypsin-like and postglutamyl-preferring (PGPH) subunits. Notably, PSME3 facilitates the interaction between MDM2 and p53/TP53, leading to the ubiquitination- and MDM2-dependent proteasomal degradation of p53/TP53. This process limits the accumulation of p53/TP53, thereby inhibiting apoptosis following DNA damage. Additionally, PSME3 may contribute to cell cycle regulation. The stability of the PSME3 homoheptamer is crucial for its specific activation of the trypsin-like subunit and inhibition of the chymotrypsin-like and PGPH subunits of the proteasome. PSME3 interacts with various proteins, including MAP3K3, CCAR2, and PSME3IP1, the latter of which directly promotes PSME3 association with the 20S proteasome. The interaction with COIL is inhibited by PSME3IP1. This intricate network of interactions underscores the multifaceted role of PSME3 in regulating proteasome activity and influencing key cellular processes.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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