

GroEL Monoclonal Antibody (9A1/2)

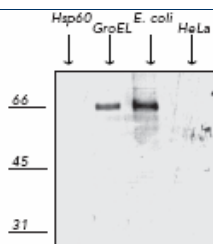
Product Specifications	
Catalog Number:	SPS-870
Host:	Mouse
Isotype:	IgG ₁
Species Reactivity:	<i>E. coli</i> , <i>Pseudomonas</i>
Applications: <i>The optimal dilution for a specific application must be determined by the investigator</i>	WB: 1:1000 IP: 1:250
Predicted m.w:	~60 kDa
Concentration:	See product label
Purification:	Protein G Affinity
Format:	PBS, pH 7.2, 0.09% azide, 50% glycerol
Storage: <i>Shipping conditions may differ from the recommended storage temperature</i>	Store at -20°C
Immunogen:	<i>E. coli</i> GroEL protein
Related Products:	
SPP-610	GroEL Active Recombinant Protein
SPS-875	GroEL Polyclonal Antibody

Background:

The bacterial chaperonin GroEL is a double toroidal assembly, which together with the action of the ring-shaped oligomeric cochaperonin, GroES, facilitates protein folding in an ATP-dependent manner. Nonnative conformations of diverse protein substrates bind to the apical domains surrounding the opening of the double toroid's central cavity underneath GroES (cis-cavity)⁴. Studies using soluble denatured proteins of *Escherichia coli* as binding substrates and protease resistance as the measure of polypeptide held in the cis-cavity indicate that the cis-cavity can accommodate up to approximately 57 kDa nonnative proteins⁵. GroEL/GroES have also been shown to promote dissociation/reassociation cycles of a heterodimeric intermediate during alpha (2) beta (2) protein assembly of human mitochondrial branched-chain alpha-ketoacid dehydrogenase/decarboxylase (BCKD). This data suggests that chaperonins GroEL/GroES mediate iterative annealing of nonproductive assembly intermediates at the quaternary structure level and that this step is essential for an efficient subsequent higher order oligomerization⁶. Studies where the single-ring human mitochondrial homolog, Hsp60-hsp10 was expressed in a *E. coli* strain, engineered so that the groE operon is under strict regulatory control, has demonstrated that expression of Hsp60-hsp10 was able to carry out all essential *in vivo* functions of GroEL-GroES⁷. The chlamydial heat shock protein, Hsp60, a homolog of *E. coli*, GroEL, has been identified as capable of eliciting macrophage activation, and several studies have revealed a correlation between Hsp60 responses and the immunopathologic manifestations of human chlamydial disease. Another prime candidate is the chlamydial GroES homolog, Hsp10, which is genetically and physiologically linked to Hsp60. Recent data indicates that immune reactivity to Hsp10 is significantly associated with tubal infertility in a chlamydiae-exposed population⁸.

References:

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Western blot analysis of purified human Hsp60 and *E. coli* GroEL proteins and *E. coli* and human HeLa cell lysates probed with SPS-870.