CDC42 Protein, Human (GST)

Cat. No.:	HY-P74258
Synonyms:	Cell division control protein 42 homolog; G25K GTP-binding protein; CDC42
Species:	Human
Source:	E. coli
Accession:	P60953-2 (M1-C188)
Gene ID:	998
Molecular Weight:	Approximately 44 kDa

PROPERTIES

AA Sequence	M Q T I K C V V V G D G A V G K T C L L I S Y T T N K F P S E Y V P T V F D N Y A V T V M I G G E P Y T L G L F D T A G Q E D Y D R L R P L S Y P Q T D V F L V C F S V V S P S S F E N V K E K W V P E I T H H C P K T P F L L V G T Q I D L R D D P S T I E K L A K N K Q K P I T P E T A E K L A R D L K A V K Y V E C S A L T Q K G L K N V F D E A I L A A L E P P E P K K S R R C
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM Tris, 0.15M NaCl, 0.5 mM GSH, pH 8.0 or 20 mM Tris-HCL, 150 mM NaCl, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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	CDC42, a plasma membrane-associated small GTPase, dynamically transitions between an active GTP-bound state and an inactive GDP-bound state, modulating diverse cellular responses by interacting with various effector proteins. Notably, CDC42 is intricately involved in processes such as epithelial cell polarization, where it plays a critical role in regulating spindle microtubule attachment to kinetochores before chromosome congression in metaphase. Additionally, CDC42 influences cell migration and is pivotal for the extension and maintenance of filopodia, slender actin-rich projections, in neurons. In the context of neuronal plasticity, it participates in CaMKII-mediated signaling, impacting dendritic spine structural plasticity and contributing to long-term synaptic changes. Moreover, CDC42 is essential for the formation of

spines in specific neuronal cell types, such as Purkinje cells and hippocampal neurons, through interactions with DOCK10 and DOCK11. In podocytes, it facilitates the formation of filopodia and podosomes upon activation by DOCK11. Furthermore, CDC42 plays a crucial role in the orchestration of F-actin cytoskeleton dynamics during phagocytosis, contributing to the formation of phagocytic cups. This multifaceted engagement underscores the versatility of CDC42 in regulating various cellular functions.

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