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**Product Data Sheet**


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Product Name: GMNN Human  
 Cat. No.: GP23569  
 Batch No.: 1

**Product Data**

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped with Ice Packs.
Synonyms	GMNN; Geminin; DNA Replication Inhibitor; Gem; RP3-369A17.3.		
Amino Acid Sequence	MRGSHHHHHH GMASMTGGQQ MGRDLYDDDD KDRWGSMNPS MKQKQEEIKE NIKNSSVPRR TLKMIQPSAS GSLVGRENEL SAGLSKRKHR NDHLTSTTSS PGVIVPESS NKNLGGVTQE SFDLMIKENP SSQYWKEVAE KRRKALYEAL KENEKLHKEI EQKDNEIARL KKENKELAEV AEHVQYMAEL IERLNGEPLD NFESLDNQEF DSEEETVEDS LVEDSEIGTC AEGTVSSSTD AKPCI.		
Formulation	The protein solution contains 20mM Tris pH 8, 100mM NaCl and 10% glycerol.		

**Introduction**

Geminin is a 25 kDa nuclear protein, which inhibits DNA replication and is degraded during the mitotic phase of the cell cycle. Geminin controls replication by binding to the licensing factor Cdt1, and is involved in neural differentiation. In addition, Geminin directly interacts with Six3 and Hox homeodomain proteins during embryogenesis and inhibits their functions. Geminin can also promote DNA replication. Geminin has 2 roles in 2 different stages of the cell cycle: Geminin is a negative regulator of DNA replication during the G<sub>1</sub>S phase of the cell cycle. Inhibition of Geminin during the G<sub>1</sub>S phase (by RNAi) results in an additional round of replication of portions of the genome. During the M phase of the cell cycle (mitosis) Geminin stabilizes the replication factor Cdt1 promoting DNA replication during the next cell cycle. Moreover, inhibition of Geminin during mitosis (by RNAi) causes destabilization of Cdt1 protein and impairment of DNA replication during the next cell cycle. Geminin thus guarantees that only one round of replication occurs during each cell cycle. It was discovered that Geminin is overexpressed in a number of malignancies and cancer cell lines. This maintains the

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

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concept that Geminin has also a positive role in DNA replication and cell cycle progression. Geminin accumulates through S, G2 and M phases of the cell cycle but is absent during the G1 phase. During the metaphase/anaphase transition of mitosis Geminin levels decrease.

### Stability

Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.

### Background

Geminin Human Recombinant fused to N-terminal His-Tag produced in E.Coli is a single, non-glycosylated polypeptide chain containing 245 amino acids and having a molecular mass of 27.7 kDa.

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