

## PTTG1 Human

**Description:** PTTG1 Human Recombinant fused with 20 amino acid His tag at N-terminus produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 222 amino acids (1-202 a.a.) and having a molecular mass of 24.1kDa. The PTTG1 is purified by proprietary chromatographic techniques.

**Synonyms:** Securin, Pituitary tumor-transforming gene 1 protein, hPTTG, Tumor-transforming protein 1, Esp1-associated protein, PTTG1, EAP1, PTTG, TUTR1, MGC126883, MGC138276.

**Source:** Escherichia Coli.

**Physical Appearance:** Sterile Filtered colorless solution.

**Amino Acid Sequence:** MGSSHHHHHH SSGLVPRGSH MATLIYVDKE NGEPGTRVVA  
KDGLKLGSGP SIKALDGRSQ VSTPRFGKTF DAPPALPKAT RKALGTVNRA TEKSVKTKGP  
LKQKQPSFSA KKMTEKTVKA KSSVPASDDA YPEIEKFFPF NPLDFESFDL PEEHQIAHLP  
LSGVPLMILD EERELEKLFQ LGPPSPVKMP SPPWESNLLQ SPSSILSTLD VELPPVCCDI DI.

**Purity:** Greater than 80.0% as determined by SDS-PAGE.

### Formulation:

The PTTG1 solution contains 20mM Tris-HCl buffer (pH8.0), 0.1M NaCl and transforming gene 10% glycerol.

### Stability:

PTTG1 although stable 4°C for 4 weeks, should be stored desiccated below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

### Usage:

NeoBiolab's products are furnished for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

### Introduction:

PTTG1 (Securin) is mainly involved in the regulation of sister chromatid separation during cell division. Securin is a regulatory protein, which has a central role in chromosome stability, in the p53/TP53 pathway, and DNA repair. Additional two roles have been identified for PTTG1; the first one is to facilitate the transport of separase (cysteine protease) to the nucleus and the second role is to hinder the catalytic activity of separase. PTTG1 is ubiquitinated by the APC (Anaphase Promoting Complex), and subsequently degraded by the Proteasome, releasing separase. During the mitosis, PTTG1 blocks Separase/ESPL1 function, thus preventing the proteolysis of the cohesin complex and the ensuing segregation of the chromosomes. However, PTTG1 function is not restricted to a blocking activity only, since it is required to activate ESPL1. PTTG1 is ubiquitinated at the beginning of anaphase, leading to its destruction and to the liberation of ESPL1. PTTG1 contains two PXXP motifs, which are necessary for its transforming and tumorigenic activities, in addition to its stimulation of basic fibroblast growth factor expression. It also contains a D box (destruction box) which is essential for its degradation by the APC. The acidic C-terminal region of the Securin can function as a transactivation domain. Even though, PTTG1 is primarily a cytosolic protein, it partially localizes in the nucleus. PTTG1 is highly

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expressed in various tumors; it also has transforming activity in vitro and tumorigenic activity in vivo. Furthermore, PTTG1 negatively regulates the transcriptional activity and related apoptosis activity of TP53.



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