Data Sheet (Cat.No.TMPY-02714)

TargetMol

PRC1 Protein, Human, Recombinant (His)

General Information

Synonyms:	ASE1;protein regulator of cytokinesis 1
Protein Construction:	A DNA sequence encoding the human PRC1 isoform 1 (NP_003972.1) (Met 1-Ser 620) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: Met
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	O43663-1
Molecular Weight:	74 kDa (predicted); 75 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 20 mM Tris, 500 mM NaCl, pH 8.0, 20% gly, 3 mM DTT. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

PRC1 (protein regulator of cytokinesis 1) is a key regulator of cytokinesis that cross-links antiparallel microtubules at an average distance of 35 nM. It is essential for controlling the spatiotemporal formation of the midzone and successful cytokinesis. PRC1 is required for KIF14 localization to the central spindle and midbody. It is also required to recruit PLK1 to the spindle. PRC1 stimulates PLK1 phosphorylation of RACGAP1 to allow recruitment of ECT2 to the central spindle. It is a homodimer and interacts with the C-terminal Rho-GAP domain and the basic region of

RACGAP1. The interaction with RACGAP1 inhibits its GAP activity towards CDC42 in vitro, which may be required for maintaining normal spindle morphology. PRC1 also interacts separately via its N-terminal region with the C-terminus of CENPE, KIF4A and KIF23 during late mitosis. It interacts with KIF14, IF20A and PLK1.

Reference

Jiang W, et al. (1999) PRC1: a human mitotic spindle-associated CDK substrate protein required for cytokinesis. Mol Cell. 2(6):877-85.

Rual, et al. (2005) Towards a proteome-scale map of the human protein-protein interaction network. Nature. 437 (7062):173-8.

Mollinari C, et al. (2002) PRC1 is a microtubule binding and bundling protein essential to maintain the mitotic spindle midzone. J Cell Biol. 15 (7):1175-86.