# Human beta-Catenin / CTNNB1 Protein (His & GST Tag)

**Catalog Number:** **11279-H20B**

## General Information

**Gene Name Synonym:**

armadillo; CTNNB; MRD19

**Protein Construction:**

A DNA sequence encoding the human CTNNB1 (P35222-1) (Met 1-Leu 781) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus.

**Source:** Human

**Expression Host:** Baculovirus-Insect Cells

## QC Testing

**Purity:** > 85 % as determined by SDS-PAGE

**Endotoxin:**

< 1.0 EU per μg of the protein as determined by the LAL method

**Stability:**

Samples are stable for up to twelve months from date of receipt at -70 ℃

**Predicted N terminal:** Met

**Molecular Mass:**

The recombinant human CTNNB1/GST chimera consists of 1018 amino acids and has a calculated molecular mass of 113 kDa. It migrates as an approximately 116 kDa band in SDS-PAGE under reducing conditions.

**Formulation:**

Lyophilized from sterile 50mM Tris, 150mM NaCl, 25% glycerol, pH 8.0, 0.1mM EDTA, 1mM TCEP, 0.4mM PMSF, 0.5mM GSH

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

**Storage:**

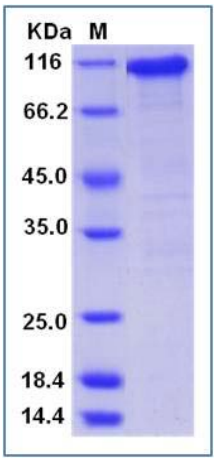
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

**Reconstitution:**

Detailed reconstitution instructions are sent along with the products.

**SDS-PAGE:**




## Protein Description

beta-Catenin, also known as CTNNB1, is a member of the armadillo family of proteins. These proteins have multiple copies of the so-called armadillo repeat domain, which is specialized for protein-protein binding. It is part of a complex of proteins that constitute adherens junctions (AJs). AJs are necessary for the creation and maintenance of epithelial cell layers by regulating cell growth and adhesion between cells. CTNNB1 also anchors the actin cytoskeleton and may be responsible for transmitting the contact inhibition signal that causes cells to stop dividing once the epithelial sheet is complete. Finally, beta-Catenin binds to the product of the APC gene, which is mutated in adenomatous polyposis of the colon. Defects in beta-Catenin can cause colorectal cancer, pilomatrixoma (PTR), medulloblastoma, and ovarian cancer. CTNNB1 is a key dowstream component of the canonical Wnt signaling pathway. In the absence of Wnt, it forms a complex with AXIN1, AXIN2, APC, CSNK1A1 and GSK3B that promotes phosphorylation on N-terminal Ser and Thr residues and ubiquitination of CTNNB1 via BTRC and its subsequent degradation by the proteasome. In the presence of Wnt ligand, beta-Catenin is not ubiquitinated and accumulates in the nucleus, where it acts as a coactivator for transcription factors of the TCF/LEF family, leading to activate Wnt responsive genes. CTNNB1 is involved in the regulation of cell adhesion. The majority of beta-catenin is localized to the cell membrane and is part of E-cadherin/catenin adhesion complexes which are proposed to couple cadherins to the actin cytoskeleton.

**References**

1.Yang, *et al.* (2002) Linking β-catenin to androgen-signaling pathway. J Biol Chem. 277(13):11336-44. 2.Hino S, *et al.* (2005) Phosphorylation of β-Catenin by Cyclic AMP-Dependent Protein Kinase Stabilizes β-Catenin through Inhibition of Its Ubiquitination. Mol Cell Biol. 25(20):9063-72. 3.Liu X, *et al.* (2005) Rapid, Wnt-induced changes in GSK3beta associations that regulate beta-catenin stabilization are mediated by Galpha proteins. Curr Biol. 15(22):1989-97.