Recombinant Human Sonic Hedgehog/SHH Protein

Catalog Number: PKSH033519

Note: *Centrifuge before opening to ensure complete recovery of vial contents.*

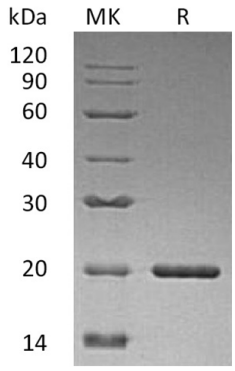
Description

Species	Human
Source	E.coli-derived Human Sonic Hedgehog/SHH protein Cys24-Gly197
Calculated MW	19.7 kDa
Observed MW	19 kDa
Accession	Q15465
Bio-activity	Not validated for activity

Properties

Purity	> 95 % as determined by reducing SDS-PAGE.
Endotoxin	< 0.01 EU per μg of the protein as determined by the LAL method.
Storage	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80 ℃. Reconstituted protein solution can be stored at 4-8℃ for 2-7 days. Aliquots of reconstituted samples are stable at < -20℃ for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20mM PB, 100mM NaCl, 1mM DTT, pH 7.5. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Data



> 95 % as determined by reducing SDS-PAGE.

Background

Sonic Hedgehog Homolog (SHH) belongs to a three-protein family called hedgehog. The other two family members are Indian Hedgehog (IHH) and Desert Hedgehog (DHH). Hedgehog proteins are key signaling molecules in embryonic development. SHH is expressed in various embryonic tissues and plays critical roles in regulating the patterning of many systems; such as limbs and brain. SHH also plays an important role in adult; including the division of adult stem cells and the development of certain cancers and other diseases. Human SHH is expressed as a 45kDa precursor; and undergoes a series of processing during secretion. After the removal of the signal peptide; a protease within the C-terminal domain catalyzes the cleavage of SHH into a 20 kDa N-terminal signaling domain (SHH-N) and a 25 kDa C-terminal domain (SHH-C). SHH-N has the “all signaling” capability. SHH-N binds to the 12 pass transmembrane protein Patched (Ptc) on cell surface; which releases the repression of the activity of Smoothened (Smo); a G-protein coupled receptor; by Ptc.