Datasheet for ABIN2667612

WNT7A Protein (AA 32-349)

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Overview

Quantity:	15 µg
Target:	WNT7A
Protein Characteristics:	AA 32-349
Origin:	Human
Source:	Escherichia coli (E. coli)
Protein Type:	Recombinant
Biological Activity:	Active
Application:	Multiplex Assay (MA)

Product Details

Purity:	>80 % by SDS-PAGE gel and HPLC analyses.
Endotoxin Level:	Less than 0.1 ng per µg of protein.

Target Details

Target:	WNT7A
Alternative Name:	WNT-7a (WNT7A Products)
Background:	The WNT protein family has a highly conserved cystein-rich structure, associated with the extracellular matrix (ECM) with high affinity through binding to heparin sulfate glycoproteins. They are carried intercellularly by lipoproteins and mediate signaling activity by binding to transmembrane Frizzled receptors and low-density-related proteins (LRP). They elicit a variety of responses through canonical or non-canonical (PCP or Ca++) pathways. There are two

Target Details

	subtypes of WNT-7 that have been identified, WNT-7a and WNT-7b. WNT-7a is a secreted cell surface signaling protein that controls a set of pathways that act on cell fate determination and tissue patterning during embryogenesis. It is known that WNT-7a can modulate the development of the uterus, cerebellum and limbs, while WNT-7b is important in lung and placental development. The human amino acid sequence of WNT-7a shares high similarity (99.4 %) with mouse WNT-7a. Signals transduced through WNT-7a and its receptor are found to be critical for female organ development, maintaining levels of female sex hormones and the development of oviduct and uterus. Receptors for WNT-7a include frizzled-5, frizzled-7 and frizzled-10. WNT-7a binds to frizzled-7 to induce signaling through SKT/ mTOR pathway in order to further modulate myofibers in a G-protein dependent PI3K pathway. During muscle cell regeneration, WNT-7a in the ECM along with transiently raised fibronectin levels in the stem cell niche can bind the frizzled-7/Sdc4 receptor complex and synergistically induce symmetric divisions of satellite stem cells. Also, in neurogenesis and chondrogenesis, WNT-7a contributes both in regulating and maintaining the level of lineage differentiation factors required to support apoptosis / cell death through binding of different receptors and interactions with ECM proteins.
Molecular Weight:	The 318 amino acids recombinant protein has a predicted molecular mass 35.5 kDa. The predicted N-terminal amino acid is Leu.
Pathways:	WNT Signaling, Stem Cell Maintenance, Asymmetric Protein Localization

Application Details

Application Notes:	Optimal working dilution should be determined by the investigator.
Comment:	Biological activity: The ED50 was determined by its ability to inhibit WNT-3a induced alkaline phosphatase production in MC3T3-E1 cells. The estimated ED50 is 40-60 ng/ml, corresponding to a specific activity of 1.67 - 2.5 x 104 units/mg.
Restrictions:	For Research Use only

Handling

Format:	Lyophilized
Reconstitution:	For maximum results, quick spin vial prior to opening. Reconstitute in water to a concentration of ≤0.2 mg/mL. Do not vortex. It is recommended to further dilute in a buffer containing a carrier protein such as 0.1 % BSA and store working aliquots at -20 °C to -80 °C.
Buffer:	Lyophilized

Handling

Handling Advice:	Avoid repeated freeze/thaw cycles.
Storage:	-20 °C
Storage Comment:	Unopened vial can be stored at -20°C or -70°C.