

## Recombinant Human NOGGIN (rhNOGGIN)

Catalog Number: 108-09

**Description** Noggin belongs to a group of diffusible proteins which bind to ligands of the TGF-β family and

regulate their activity by inhibiting their access to signaling receptors. Noggin was originally identified as a BMP-4 antagonist whose action is critical for proper formation of the head and other dorsal structures. Consequently, Noggin has been shown to modulate the activities of other BMPs including BMP-2,-7,-13, and -14. Targeted deletion of Noggin in mice results in prenatal death and recessive phenotype displaying a severely malformed skeletal system. Conversely, transgenic mice over-expressing Noggin in mature osteoblasts display impaired osteoblastic differentiation, reduced bone formation, and severe osteoporosis. The amino acid

sequence of human noggin is highly homologous to that of *Xenopus*, rat and mouse.

Synonyms SYM1, SYNS1, NOG

AA Sequence MOHYLHIRPA PSDNLPLVDL IEHPDPIFDP KEKDLNETLL RSLLGGHYDP

GFMATSPPED RPGGGGAAG GAEDLAELDQ LLRQRPSGAM PSEIKGLEFS EGLAQGKKQR LSKKLRRKLQ MWLWSQTFCP VLYAWNDLGS FWPRYVKVGS CFSKRSCSVP EGMVCKPSKS VHLTVLRWRC QRRGGQRCGW IPIQYPIISE CKCSC

**Source** Escherichia coli

Molecular Weight Approximately 46.2 kDa non-disulfide-linked homodimer consisting of two 206 amino acid

polypeptide chains.

**Purity** >95% by SDS-PAGE and HPLC analyses.

**Biological Activity** Fully biologically active. The ED<sub>50</sub> is  $0.05-0.08 \mu g/ml$ , as determined by its ability to inhibit

5ng/ml of BMP4-induced alkaline phosphatase production in ATDC-5 chondrogenic cells.

**Physical Appearance** White lyophilized powder.

Formulation Lyophilized from a 0.2 µm filtered concentrated solution in 30% acetonitrile, 0.1% TFA.

**Endotoxin**  $< 1EU/\mu g$  of growth factor as determined by LAL method.

**Reconstitution** Reconstitute in 10mM HAc to a concentration of 0.1-1.0 mg/mL.

**Storage** Store at -20°C after receiving. Upon reconstitution, store at 2-8°C for up to one week. For

maximal stability, aliquot and store at -20°C. Avoid repeated freeze/ thaw cycles.

Usage This product is for research use only. It is not approved for use in humans, animals, or *in vitro* 

diagnostic procedures.