

MSX1 Blocking Peptide (N-term)
Synthetic peptide
Catalog # BP7269a**Specification**

MSX1 Blocking Peptide (N-term) - Product Information

Primary Accession [P28360](#)
Other Accession [NP_002439](#)

MSX1 Blocking Peptide (N-term) - Additional Information

Gene ID 4487

Other Names

Homeobox protein MSX-1, Homeobox protein Hox-7, Msh homeobox 1-like protein, MSX1, HOX7

Target/Specificity

The synthetic peptide sequence is selected from aa 1-18 of HUMAN MSX1

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

MSX1 Blocking Peptide (N-term) - Protein Information

Name MSX1 ([HGNC:7391](#))

Function

Acts as a transcriptional repressor (By similarity). Capable of transcription autoinactivation (By similarity). Binds to the consensus sequence 5'-C/GTAAT-3' in downstream activin regulatory elements (DARE) in the gene promoter, thereby repressing the transcription of CGA/alpha-GSU and GNRHR (By similarity). Represses transcription of myoblast differentiation factors (By similarity). Binds to core enhancer regions in target gene promoters of myoblast differentiation factors with binding specificity facilitated by interaction with PIAS1 (By similarity). Recruits histone H3 methyltransferases such as EHMT2/G9a to gene promoter regions which leads to inhibition of myoblast differentiation via transcriptional repression of differentiation factors (By similarity). Regulates, in a stage-specific manner, a developmental program of gene expression in the fetal tooth bud that controls odontoblast differentiation and proliferation of dental mesenchymal cells (By similarity). At the bud stage, required for mesenchymal molar tooth bud development via facilitating reciprocal signaling between dental epithelial and mesenchymal cells (By similarity). May also regulate expression of Wnt antagonists such as DKK2 and SFPR2 in the developing tooth mesenchyme (By similarity). Required for BMP4 expression in dental mesenchyme cells (By

similarity). Also, in response to BMP4, required for BMP4 expression in neighboring dental epithelial cells (By similarity). Required for maximal FGF4-induced expression of SDC1 in dental mesenchyme cells (By similarity). Also in response to SDC1, required for SDC1 expression in neighboring dental epithelial cells (By similarity). At the early bell stage, acts to drive proliferation of dental mesenchyme cells, however during the late bell stage acts as a homeostatic regulator of the cell cycle (By similarity). Regulates proliferation and inhibits premature mesenchymal odontogenesis during the bell stage via inhibition of the Wnt signaling component CTNNB1 and subsequent repression of the odontoblast differentiation factors BMP2, BMP4, LEF1, ALPL and BGLAP/OCN (By similarity). Additionally, required for correct development and fusion of the palatal shelves and embryonic mandibular formation (By similarity). Plays a role in embryonic bone formation of the middle ear, skull and nasal bones (By similarity). Required for correct formation and thickness of the nail plate (By similarity). May play a role in limb-pattern formation (By similarity).

Cellular Location

Nucleus {ECO:0000250|UniProtKB:P13297}. Note=Interaction with EHMT2/G9a is required for localization to the nuclear periphery (By similarity). Interaction with PIAS1 is required for localization to the nuclear periphery (By similarity) {ECO:0000250|UniProtKB:P13297}

MSX1 Blocking Peptide (N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

MSX1 Blocking Peptide (N-term) - Images

MSX1 Blocking Peptide (N-term) - Background

MSX1 is a member of the muscle segment homeobox gene family. This protein functions as a transcriptional repressor during embryogenesis through interactions with components of the core transcription complex and other homeoproteins. It may also have roles in limb-pattern formation, craniofacial development, particularly odontogenesis, and tumor growth inhibition. Mutations in this gene, which was once known as homeobox 7, have been associated with nonsyndromic cleft lip with or without cleft palate 5, Witkop syndrome, Wolf-Hirschorn syndrome, and autosomal dominant hypodontia.

MSX1 Blocking Peptide (N-term) - References

Han,J., Mech. Dev. 124 (9-10), 729-745 (2007)