Technical Data Sheet

Recombinant human/mouse Shh protein

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Lot Specific Information

Lot Number: **Lot Specific***

Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Information

Catalog Number:	**RP068**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Neural stem cell proliferation and neuronal differentiation Differentiation of midbrain dopaminergic neurons Midbrain differentiation Corpus organoid generation Cholinergic-like neurons (ChLNs) differentiation
Formulation:	Lyophilized, white powder
Endotoxin:	≤0.5 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in sterile-filtered water at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	19.8 kDa (monomer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human/mouse Shh protein (Sonic Hedgehog) is a member of the Hedgehog family, alongside Indian Hedgehog (Ihh) and Desert Hedgehog (Dhh), and corresponds to SHH C24II, the bioactive N-terminal region spanning Cys24–Gly197 (Cys24Ile-Ile) that signals via canonical and non-canonical pathways through the transmembrane receptor Patched (Ptch). Shh is essential in embryonic development, tissue regeneration and tumorigenesis, regulating cell fate and patterning of the neural tube and central nervous system, including ventral forebrain, midbrain dopaminergic and hindbrain serotonergic fates, and inducing motor neurons and interneurons. Abnormal Shh signaling is associated with basal cell carcinoma, medulloblastoma and Gorlin syndrome, and its role in tissue repair makes it of interest in regenerative medicine. In cell culture, Shh is used to pattern embryos and organoids along the neural axis, to derive neural progenitors from induced pluripotent stem cells, and together with BDNF, GDNF, FGF-8, TGF-β3 or IGF-1 to generate dopaminergic and GABAergic neurons, making it a key reagent for neural stem cell and organoid research. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. A GMP-grade version of this protein is available for cell and gene therapy manufacturing. Contact us at customerservice@bioxcell.com for details. Species reactivity: human. Species similarity: mouse - 99%, rat - 97%, bovine - 99%, porcine - 98%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**
It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out

of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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