Technical Data Sheet

Recombinant human DKK-1 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:	**RP075**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Differentiation of iPSC derived neural progenitors to neurons Osteogenic differentiation Maintenance of pluripotency in iPSC Mesenchymal stem cell research Expansion of induced pluripotent, embryonic and mesenchymal stem cells
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:	25.7 kDa (monomer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human DKK-1 protein (Dickkopf-related protein 1) is a secreted member of the DKK family, alongside DKK-2, DKK-3 and DKK-4, originally identified as a Xenopus head-forming molecule and now recognized as a potent antagonist of the canonical Wnt/β-catenin pathway. Structurally, DKK-1 contains an N-terminal signal peptide, a conserved cysteine-rich domain and a linker to a C-terminal region, and it forms inhibitory complexes with the LRP5/6 co-receptors and Kremen, triggering endocytosis and removal of LRP5/6 from the cell surface. DKK-1 inhibition of Wnt signaling is indispensable for anterior development, as mice lacking DKK-1 fail to form a head, and dysregulated Wnt signaling links DKK-1 to cancers such as esophageal squamous cell carcinoma and hormone-resistant breast cancer. In cell culture, DKK-1 regulates the balance between self-renewal and differentiation in embryonic stem cells, directs iPSC differentiation toward neural lineages, guides osteogenic differentiation of mesenchymal stem cells for bone tissue engineering, and supports in vitro modeling of Wnt-driven disease, making it a key reagent for stem cell and developmental biology 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 - 86%, rat - 86%, bovine - 93%, porcine - 33%.

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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