

DATASHEET

Profilin (Profilin 1)

Human recombinant, untagged
(~95% purity)

For Research Use Only.
Not for Use in Diagnostic Processes.

Quantity: 50µg
Cat. #: 8418-01

Product Description

Profilins are small (14-17kD) ubiquitous cytoplasmic proteins occurring in several isoforms. Human profilin 1 is present in most tissues. Profilin binds G-actin in a 1:1 stoichiometry, and as such was initially assumed to sequester actin monomers *in vivo* to provide a pool of unpolymerized actin required for actin dynamics in the cell.

More recent results have revealed that the physiological function of profilin is far more complex. It also promotes filament assembly from actin-profilin complexes because - by binding to the "barbed" end of an actin monomer - it facilitates nucleotide exchange of ADP against ATP in monomeric actin. These profilin-ATP-actin complexes can now bind to the "barbed" end of an existing filament. Subsequently profilin is released from the barbed end.

Profilin binds to a large number of other proteins which may regulate or modulate profilin's activities. It also binds PIP₂, interfering with its actin binding. It is assumed that *in vivo* profilins play an important role - in close cooperation with several other proteins - in dynamic polymerization-depolymerization processes in cytoplasmic regions of high motility.

The protein concentration of profilin was measured at OD₂₈₀ (0.1%=1.226) and the purity by scanning densitometry of Coomassie G-250 stained SDS-Gels. Lyophilized profilin contains 150mM NaCl, 20mM Hepes pH 7.4, 1mM DTT and 5% sucrose, when reconstituted with ultrapure H₂O to a 1.0 mg/ml solution.

Product Handling

Preparation of a working stock

Add 50µl H₂O to the tube with profilin to obtain a 1mg/ml stock. Vortex mildly and allow the protein to rehydrate for 2min and vortex again. Quickly spin the tube up to ~3.000xg for seconds to collect the solution at the bottom. Depending on the purpose this stock solution is ready-to-use. For critical assays we recommend buffer exchange against 150mM NaCl, 20mM Hepes pH 7.4, 1mM DTT.

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Product Storage and Stability

Store the product at -70° upon arrival, where it will be stable for at least 6 months. Once dissolved, profilin is kept on ice and should be used within 5 days. Avoid refreezing.

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