

DATASHEET

NP-Actin

Non-polymerizing actin

From rabbit skeletal muscle
(α -skeletal muscle actin, 99% purity)

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

Quantity: 1x1mg
Cat. #: 8105-01
Quantity: 10x1mg
Cat. #: 8105-02

Product Description

Non-Polymerizing Actin is α -skeletal muscle actin (42kD, 375 aa), enzymatically cleaved between Gly42/Val43. As a result of this cleavage, an essential monomer-monomer interaction site is inactivated, rendering the actin unpolymerizable in the presence of Ca^{++} , even under polymerizing conditions (i.e. 100 mM KCl). In the presence of Mg^{++} , this actin polymerizes to normal F-actin. In actin compatible buffers the structural integrity of Non-Polymerizing Actin is preserved, while the cleavage products (~ 36kD and 6kD) are observed under denaturing conditions, e.g. in SDS-PAGE. Non-Polymerizing Actin is used in ligand interaction studies and crystallography, where it is necessary to keep actin in the monomer state and suppress actin polymerization.

Non-Polymerizing Actin is supplied as lyophilized powder containing 2mM Tris-Cl pH 8.2, 0.4mM ATP, 0.5mM DTT, 0.1mM CaCl_2 and 0.2% disaccharides, when reconstituted with H_2O . For dilution of actin or exchange of ligand buffer into actin compatible buffer MonoMix (Cat. #: 5100-0*) may be used.

The polymerization of G-actin is initiated by PolyMix (Cat.#: 5000-0*). Due to our special cryoconservation technique this highly soluble actin is of excellent biological activity and quality.

Product Handling

Preparation of a stock solution

Add e.g. 1.0ml of H_2O to the tube with actin to obtain a stock solution of 1mg/ml (23.8 μM). Allow the actin solution to rehydrate for 2min at room temperature and dissolve using a pipette. If actin is used for polymerization with PolyMix (Cat no.: 5000-0*), we recommend to prepare a G-actin stock of 1.1mg/ml (26.2 μM), since addition of PolyMix dilutes the G-actin/F-actin stock to a final concentration of 1mg/ml (23.8 μM).

For product inquiries please contact:

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The actin stock is ready for use. For critical assays we recommend dialysis of actin against 50-100vol. of MonoMix O/N and subsequent centrifugation at 100.000xg for 60min to remove any aggregates from lyophilization. For less critical assays the actin working stock may be filtered (0.2-0.45 μ m) or pre-spun (15.000xg, 10min).

Product Storage and Stability

Non-Polymerizing Actin is stored at -70°C upon arrival will be stable in performance for at least 6 months from the date of purchase. Solubilized G-actin is kept on ice and should be used within 2 days. Avoid refreezing.

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