

PRODUCT INFORMATION



Nucleophosmin (human, recombinant)

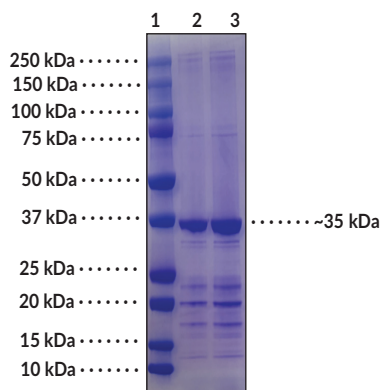
Item No. 37621

Overview and Properties

| | |
|-------------------------------|---|
| Synonyms: | NPM, NPM1, Nucleolar Phosphoprotein B23, Nucleolar Protein NO38, Numatrin |
| Source: | Recombinant human N-terminal His-tagged nucleophosmin expressed in <i>E. coli</i> |
| Amino Acids: | 2-294 (full length) |
| Uniprot No.: | P06748 |
| Molecular Weight: | 34.7 kDa |
| Storage: | -80°C (as supplied) |
| Stability: | ≥6 months |
| Purity: | ≥60% estimated by SDS-PAGE |
| Supplied in: | 50 mM HEPES, pH 7.8, with 150 mM sodium chloride and 10% glycerol |
| Protein Concentration: | <i>batch specific</i> mg/ml |

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: Nucleophosmin (2 µg)
Lane 3: Nucleophosmin (4 µg)

SDS-PAGE Analysis of Nucleophosmin.

Representative gel image shown; actual purity may vary between each batch.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Nucleophosmin is a nucleolar phosphoprotein that is involved in diverse biological processes, including ribosome maturation, DNA repair, and mitotic spindle assembly.¹ It is highly post-translationally modified and composed of an oligomerization domain, which contains two nuclear export signals, three acidic domains, an intrinsically disordered region, which contains two nuclear localization signals, and a C-terminal RNA-binding domain.^{1,2} Nucleophosmin is ubiquitously expressed and shuttles between the nucleolus and cytoplasm, however, alternative splicing of *NPM1* produces a variant that lacks the RNA-binding domain and nucleolar localization signal and is instead localized throughout the nucleus.¹⁻³ Nucleophosmin has histone- and protein chaperone activity and plays a role in ribosome assembly and export, centrosome duplication, cell cycle control, the stress response, and embryogenesis.¹ Knockdown of *NPM1* inhibits protein synthesis and the nuclear export of the 40S, 60S, and 80S ribosomal subunits *in vitro* and knockout of *NPM1* is embryonic lethal in mice.^{4,5} Nucleophosmin fusion proteins have been found in patients with acute promyelocytic leukemia or non-Hodgkin's lymphoma.^{4,6}

References

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4. Maggi, L.B., Jr., Kuchenruether, M., Dadey, D.Y.A., *et al.* Nucleophosmin serves as a rate-limiting nuclear export chaperone for the mammalian ribosome. *Mol. Cell Biol.* **28(23)**, 7050-7065 (2008).
5. Grisendi, S., Bernardi, R., Rossi, M., *et al.* Role of nucleophosmin in embryonic development and tumorigenesis. *Nature* **437(7055)**, 147-153 (2005).
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