

Store at
4°C

Neutral Protease (Dispase®)



Cell Signaling
TECHNOLOGY®

#44439

50 mg

Support: +1-978-867-2388 (U.S.)
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New 06/21

For Research Use Only. Not For Use In Diagnostic Procedures.

Description: Neutral Protease (Dispase®) is isolated from *Bacillus polymyxa* and is a mild proteolytic enzyme that separates the epidermis from dermis by cleaving the basement membrane zone of the skin while preserving the viability of epithelial sheets (1,2). This enzyme is effective at cleaving fibronectin and type IV collagen in the lamina densa of skin. It will not cleave serum albumin, transferrin, laminin, type V collagen, or anchoring fibrils containing type VII collagen (1). As described in the expired U.S. Patent, 4,304,866, Neutral Protease (Dispase®) is activated by metallic ions such as Ca⁺⁺, Mn⁺⁺, Mg⁺⁺, Fe⁺⁺, Fe⁺⁺⁺, and Al⁺⁺⁺ and is inhibited by metal-chelating agents such as ethylenediamine tetraacetic acid (EDTA), citric acid, o-phenanthroline, 2,2'-dipyridyl and sodium fluoride, and oxidizing agents such as N-bromosuccinimide (NBS) and iodine. Neutral Protease (Dispase®) is used at various concentrations for tissue dissociation, generally ranging from 0.6 to 2.4 U/ml for various time points depending on the desired effect. Concentrations higher than 2.4 U/ml are not recommended.

Specificity/Sensitivity: Neutral Protease (Dispase®) is suggested to separate skin epidermis from dermis leaving intact epithelial sheets. This mild enzyme is used for non-specific cleavage of peptide bonds containing leucine and phenylalanine.

Source/Purification: Neutral Protease (Dispase®) is produced by the bacterium *Bacillus polymyxa* and chromatographically purified prior to lyophilization.

Storage: Neutral Protease (Dispase®) is supplied as a lyophilized powder. This product is stable for 12 months when stored at 4°C, protected from moisture. It is recommended to reconstitute as needed and to store solutions at -20°C or -80°C. *Aliquot to avoid multiple freeze/thaw cycles.*

Activity: ≥4.0 units per mg dry weight

Unit Definition: One unit releases Folin positive amino acids equivalent to 1 μmol of tyrosine per minute from casein at 37°C, pH 7.5.

Directions for Use: Neutral Protease (Dispase®) is stable over a wide pH range (4.0-9.0) with an optimal pH range of 5.9-7.0. It is recommended to reconstitute with a buffer compatible with the intended assay.

Background References:

- (1) Stenn, K.S. et al. (1989) *J Invest Dermatol* 93, 287-90.
- (2) Green, H. et al. (1979) *Proc Natl Acad Sci USA* 76, 5665-8.
- (3) Green et al. *Transplantable Sheets of Living Keratinous Tissue*. U.S. Patent 4,304,866 filed November 14, 1979, and issued December 8, 1981.

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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species** enclosed in parentheses are predicted to react based on 100% homology.