

# Product Information

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## Nitrate Reductase (NADH) from corn (*Zea mays*)

Catalog Number **N9523**  
Storage Temperature 2–8 °C

EC 1.7.1.1  
CAS RN 9013-03-0  
Synonyms: NADH nitrate reductase; NaR; nitrate  
oxoreductase; assimilatory nitrate reductase

### Product Description

The enzyme catalyzes the NADH dependent reduction of nitrate to nitrite. Nitrate reductase plays a critical role in nitrate reduction and metabolism, and is the initiating enzyme in the nitrate assimilatory pathway.<sup>1</sup> The enzyme is also being studied for its potential role in preserving and cleansing the environment by reducing excess nitrate and related nitrogen nutrients in water sources.

Inhibitors:<sup>2</sup> aminoxyacetate, thiols, and NAD(P)H

pH optimum:<sup>2</sup> 7.5 (active in the pH range of 5.5–8.1)

This nitrate reductase product has been isolated and purified from corn by immunoaffinity chromatography. It is then lyophilized from a solution containing 50 mM MOPS, 1 mM EDTA, and sucrose as a stabilizer. This buffer makes up ~99% of the dry weight contained in the vial.

Specific Activity:  $\geq 10$  units of nitrate reductase per mg protein

Unit Definition: One unit will reduce 1.0  $\mu$ mole of nitrate to nitrite per minute in an NADH system at pH 7.3 at 30 °C.

### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

### Preparation Instructions

Add 1 ml of water or 50% (v/v) glycerol solution to 0.5 unit of enzyme. For maximum activity and complete dissolution, stir on ice for a **minimum of 1 hour**.

### Storage/Stability

The product should be stored at 2–8 °C with desiccation.

A 50% (v/v) glycerol solution will retain activity for up to two weeks at 2–8 °C or up to 18 months at –20 °C. Solutions prepared in water should be used within 24 hours of reconstitution.

### References

1. Larios, B., *et al.*, *Planta*, **212(2)**, 305-12 (2001).
2. Schomburg, D., *et al.*, *Enzyme Handbook 7*, Springer-Verlag (Berlin: 1994).

RBG,LCM,MAM 01/08-1

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