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# YNaR: Yeast NAD(P)H: Nitrate Reductase

**Product Specifications:** Immobilized Metal Affinity Chromatography (IMAC) purified yeast NAD(P)H: nitrate reductase, 15 - 30 U/mg. Modified method of Barbier, GG, WH Campbell (2000) Current Topics in Gene Expression Systems: Program and Abstracts, Abstract PY 4, p. 64.

**Specific Activity:** 20 - 40 units/mg protein

**Form:** Freeze-dried protein glass containing 50 mM MOPS, pH 7.0, 0.1mM EDTA, sugar, (MOPS = 3-[N-Morpholino]propanesulfonic acid)

**Activity Supplied:** Vials containing 0.5 – 5.0 U/vial, as specified by purchaser

## General Information:

- **Product:** YNaR: *Recombinant Yeast (Pichia Pastoris NAD(P)H:Nitrate Reductase)*
- **SKUs:** YNaR-U#, YNaR-RPk
- **CAS #:** 9029-27-0
- **E.C #:** 1.7.1.2
- **Catalyzes the NADH or NADPH dependent reduction of nitrate to nitrite.**
- **Unit definition:** One unit will reduce 1.0 μmole of nitrate to nitrite per minute in an NADH system at pH ~7 at 30°C
- **Temperature range:** Active at 2 - 30°C
- **Physical form:** Freeze-dried protein glass
- **Stability problems:** Thermal denaturation; pH extremes. Use standard precautions for proteins
- **Expected purity range:** Greater than 90%
- **Impurities & relative %'s:** High mw polymers of nitrate reductase, <5%; fragments of NaR
- **Additives & relative %'s:** 50 mM MOPS/ 0.1 mM EDTA, sugar > 99% of dry weight
- **Range of protein expected:** 25 - 50 μg protein/U enzyme
- **Range of activity expected:** Controlled at desired units per vial
- **Range of activity, U/gram solid:** 30 – 50 units per gram solid (including buffer and sugars)

## Storage Conditions & Shelf Life Information\*

\*Shelf life guaranteed if stored as directed below

	-80°C	-20°C	4°C	RT: 20°C – 25°C	Above 40°C
<b>Freeze-Dried</b>	3+ Years	2+ Years	1+ Year	6 months	Up to 1 week
<b>In Solution*</b>	1+ Year	6+ months	Up to 1 week	Not recommended	Not recommended

+ Enzyme provided with enzyme diluent working solution, contains 25% glycerol

**Recombinant Yeast NAD(P)H:NITRATE REDUCTASE, (EC 1.7.1.2), expressed in the GRAS yeast *Pichia pastoris*. PURIFIED to homogeneity by AFFINITY CHROMATOGRAPHY. NO animal derived materials. Purity is greater than 95%.**

The product has been highly purified so that it does not contain any residual fermentation material other than the highly purified enzyme. The product does not contain ingredients of animal, plant or microbial origin other than that used in the fermentation process. The product is provided in pack sizes from 0.02 to 5.0 Enzyme Activity Units (U) per vial; 25 – 50 micrograms of protein equals 1.0 U. Additives are reagent grade. End use is for analysis of nitrate in agricultural, environmental, industrial, biomedical, water or wastewater samples. **No animal-derived materials.** No hazardous materials.