Creative Enzymes®

# NiFe-type cytoplasmic hydrogenase from Pyrococcus furiosus, recombinant

*Cat. No. NATE-1691*

*Lot. No.* (See product label)

## Introduction

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| ***Description*** | The [NiFe] hydrogenases contain a minimum of two subunits known as the small (S) and large (L) subunits. The small subunit contains three iron-sulfur clusters while the large subunit contains the active site, a nickel-iron center which is connected to the solvent by a molecular tunnel. To date, periplasmic, cytoplasmic, and membrane-bound hydrogenases have been found. [NiFe] hydrogenases are known to be deactivated by molecular oxygen (O2). The [NiFe] hydrogenase of Pyrococcus furiosus is heterotetrameric wherein the additional two subunits allow the enzyme to use NAD(P)(H) as an electron carrier. |
| ***Synonyms*** | Cytoplasmic [NiFe]-Hydrogenase; OE-SHI; Cytoplasmic Hydrogenase; NiFe-type cytoplasmic hydrogenase; SHI; [NiFe] hydrogenase |

## Product Information

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| ***Source*** | Pyrococcus furiosus |
| ***Form*** | Liquid |
| ***Formulation*** | 1 mg/ml solution in 50 mM Tris-HCl, 100 mM NaCl, 5 mM DTT and 20% glycerol pH 8.0 |
| ***Molecular Weight*** | Predicted: 155 kDa, Size Exclusion: 149 kDa +/- 5 kDa |
| ***Purity*** | > 90% by SDS-PAGE |
| ***Activity*** | >100 U/mL |
| ***Concentration*** | 1mg/ml |
| ***Thermal stability*** | ambient to 100°C |
| ***Buffer*** | 50 mM Tris, 2 mM DT, 300 mM NaCl, pH 8.2 |
| ***Unit Definition*** | One unit (U) is 1 µmole of H2 evolved min-1 mg-1. |

## Storage and Shipping Information

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| ***Storage*** | This item is oxygen sensitive. Stable when stored sealed in strictly anaerobic environment (<10 ppm O2) at room temperature for up to 6 months. For long-term storage, protein can be flash frozen in nitrogen and stored at -80°C. |