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New England Biolabs
Certificate of Analysis

Product Name:	*Apyrase*
Catalog #:	*M0398S/L*
Concentration:	*500 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme that catalyses the release of 1 µmol of inorganic phosphate from ATP in 1 minute at 30°C in a total reaction of 50 µl.*
Lot #:	*0011709*
Assay Date:	*09/2017*
Expiration Date:	*3/2019*
Storage Temp:	*-20°C*
Storage Conditions:	*20 mM MES, 50 mM NaCl, 1 mM DTT, 0.1 mM $CaCl_2$, 0.1 % Tween® 20, 50 % Glycerol, (pH 6.5 @ 25°C)*
Specification Version:	*PS-M0398S/L v1.0*
Effective Date:	*05 Oct 2016*

Assay Name/Specification (minimum release criteria)	**Lot #0011709**
Endonuclease Activity (Nicking) - A 50 µl reaction in Apyrase Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 5 units of Apyrase incubated for 4 hours at 30°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Exonuclease Activity (Radioactivity Release) - A 50 µl reaction in Apyrase Reaction Buffer containing 1 µg of a mixture of single and double-stranded [^{3}H] *E. coli* DNA and a minimum of 5 units of Apyrase incubated for 4 hours at 30°C releases <0.1% of the total radioactivity.	**Pass**
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in NEBuffer 4 containing 1 µg of PhiX174-HaeIII DNA and a minimum of 5 units of Apyrase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
Phosphatase Activity (pNPP) - A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM $MgCl_2$ containing 2.5 *p*-Nitrophenyl Phosphate (pNPP) and a minimum of 5 units of Apyrase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	**Pass**
Protein Purity Assay (SDS-PAGE) - Apyrase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**
RNase Activity (Extended Digestion) - A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Apyrase is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**

Authorized by
Derek Robinson
05 Oct 2016

Inspected by
Ana Egana
19 Oct 2017