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New England Biolabs
Certificate of Analysis

Product Name: *ΦX174 Virion DNA*
Catalog #: *N3023S/L*
Concentration: *1,000 µg/ml*
Unit Definition: *N/A*
Lot #: *1241407*
Assay Date: *07/2014*
Expiration Date: *07/2016*
Storage Temp: *-20 °C*
Storage Conditions: *10 mM Tris-HCl (pH 8.0), 1 mM EDTA*
Specification Version: *PS-N3023S/L v1.0*
Effective Date: *08 Jul 2014*

Assay Name/Specification (minimum release criteria)	**Lot #1241407**
A260/A280 Assay - The ratio of UV absorption of ΦX174 Virion DNA at 260 and 280 nm is between 1.8 and 2.0.	**Pass**
DNA Concentration (A260) - The concentration of ΦX174 Virion DNA is between 1000 and 1050 µg/ml as determined by UV absorption at 260 nm.	**Pass**
Electrophoretic Pattern (Plasmid) - The banding pattern of ΦX174 Virion DNA on a 1.2% agarose gel is evaluated against a control lot for sharpness and relative intensity as determined by gel electrophoresis using Ethidium Bromide.	**Pass**
Mung Bean Nuclease Digest (Sensitive) - A 100 µl reaction in Mung Bean Nuclease Reaction Buffer containing 5 µg of ΦX174 Virion DNA and 10 units of Mung Bean Nuclease incubated for 1 hour at 30°C results in complete digestion of the DNA as determined by agarose gel electrophoresis.	**Pass**
Non-Specific DNase Activity (DNA, 16 hour) - A 50 µl reaction in 1X NEBuffer 2 containing 5 µg of ΦX174 Virion DNA incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
Restriction Digest (Single Stranded, Resistant) - A 50 µl reaction in CutSmart™ Buffer containing 5 µg of ΦX174 Virion DNA and a minimum of 20 units of XhoI incubated for 1 hour at 37°C results in no detectable digestion of the DNA as determined by agarose gel electrophoresis.	**Pass**

Authorized by
Derek Robinson
08 Jul 2014

Inspected by
Vanessa Mathieu-Sheltry
23 Jul 2014

nqa ISO 9001 Registered Quality Management
nqa ISO 14001 Registered Environmental Management
nqa ISO 13485 Registered Medical Devices