



CERTIFICATE OF ANALYSIS

Version 3.7

revised on May 28, 2018

$\beta(1-4)$ Galactosidase

PRODUCT NAME: $\beta(1-4)$ Galactosidase
PRODUCT NUMBERS: E-BG07, E-BG07-200, E-BG07-20
KE-DG01, KE-DGMX

LOT NUMBER: 505.1C
EXPIRATION DATE: March 03, 2020
ASSAY DATE: April 20, 2018

SOURCE: recombinant gene from *Streptococcus pneumoniae* expressed in *E. Coli*
FORMULATION: 20 mM Tris-HCl, 25 mM NaCl pH 7.5, filter sterilized
STORAGE: 4°C (Do not freeze)

ACTIVITY: Activity¹ 3 U/ml (Specification: ≥ 3 U/ml)
Specific Activity² 12.4 U/mg (Specification: ≥ 6 U/mg)

CONTAMINATING ACTIVITY ASSAYS: Protease Assay³ Passed (Specification "Passed")

1. Defined as the amount of enzyme required to produce 1 μ mole of methylumbelliferone in 1 minute at 37°C, pH 5.0 from MU-NANA [2'-(4-methylumbelliferyl)-alpha-D-N-acetylneuraminic acid].
2. Protein concentration determined by Bradford method, using BSA as a standard.
3. For the protease assay, 10 μ g of denatured BSA is incubated at 37°C for 24 hr with 2 ul of enzyme. SDS-PAGE analysis of the treated BSA shows no evidence of degradation.

President - QA-Bio Inc
Authorized by Mike Gibson
May 28, 2018