



# CERTIFICATE OF ANALYSIS

Version 3.7

revised on June 7, 2023

## Enzymatic CarboRelease Kit

PRODUCT NAME: Enzymatic Carborelease Kit  
PRODUCT NUMBERS: KE-DG01

LOT NUMBER: 201.3A  
EXPIRATION DATE: June 3, 2026  
ASSAY DATE: May 27, 2023

STORAGE: 4°C (Do not freeze)

ENZYME: Neuraminidase Au  
PARENT LOT NUMBER: 201.2A  
SOURCE: recombinant gene from *Arthrobacter ureafaciens* expressed in *E. Coli*  
FORMULATION: 20 mM Tris-HCl, 20 mM NaCl pH 7.5, filter sterilized  
ACTIVITY: Activity<sup>1</sup> 5 U/ml (Specification: ≥ 5 U/ml)  
Specific Activity<sup>2</sup> 210 U/mg (Specification: ≥ 135 U/mg)

CONTAMINATING ACTIVITY ASSAYS:  
Protease Assay<sup>3</sup> Passed (Specification "Passed")

ENZYME: β(1-4) Galactosidase  
PARENT LOT NUMBER: 505.1C  
SOURCE: recombinant gene from *Streptococcus pneumoniae* expressed in *E. Coli*  
FORMULATION: 20 mM Tris-HCl, 25 mM NaCl pH 7.5, filter sterilized  
ACTIVITY: Activity<sup>1</sup> 3 U/ml (Specification: ≥ 3 U/ml)  
Specific Activity<sup>2</sup> 12.4 U/mg (Specification: ≥ 6 U/mg)

CONTAMINATING ACTIVITY ASSAYS:  
Protease Assay<sup>3</sup> Passed (Specification "Passed")

ENZYME: N-Acetylglucosaminidase  
PARENT LOT NUMBER: 502.1A  
SOURCE: recombinant gene from *Streptococcus pneumoniae* expressed in *E. Coli*  
FORMULATION: 20 mM Tris-HCl pH 7.5, 25 mM NaCl filter sterilized  
ACTIVITY: Activity<sup>1</sup> 50 U/ml (Specification: ≥ 40 U/ml)  
Specific Activity<sup>2</sup> 118 U/mg (Specification: ≥ 80 U/mg)

CONTAMINATING ACTIVITY ASSAYS:  
Protease Assay<sup>3</sup> Passed (Specification "Passed")

ENZYME: O-Glycosidase  
PARENT LOT NUMBER: 571.1A  
FORMULATION: 50 mM sodium phosphate pH 7.5, filter sterilized.  
ACTIVITY: Activity<sup>1</sup> 1.25 U/ml (Specification: ≥ 1.25 U/ml)  
Specific Activity<sup>2</sup> 26.3 U/mg (Specification: ≥ 12 U/mg)

CONTAMINATING ACTIVITY ASSAYS:  
Protease Assay<sup>3</sup> Passed (Specification "Passed")

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## Enzymatic CarboRelease Kit

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PRODUCT NAME: Enzymatic CarboRelease Kit  
PRODUCT NUMBER: KE-DG01

ENZYME: PNGASE F  
LOT NUMBER: 111.1A

SOURCE: *Elizabethkingia miricola*

FORMULATION: The enzyme is provided as a sterile-filtered solution in 20 mM Tris-HCl (pH 7.5)

ACTIVITY: Activity<sup>1</sup> 5 U/ml (Specification:  $\geq 5$  U/ml)  
Specific Activity<sup>2</sup> 25 U/mg (Specification:  $\geq 25$  U/mg)

CONTAMINATING ACTIVITY ASSAYS:

Protease Assay <sup>3</sup>	Passed	(Specification "Passed")
Endoglycosidase assay <sup>4</sup>		Passed (Specification "Passed")
Glycosidase activity <sup>5</sup>		
Beta-Galactosidase	Passed	(Specification "Passed")
N-acetylglucosaminidase	Passed	(Specification "Passed")
Alpha-Galactosidase	Passed	(Specification "Passed")

1. Defined as the amount of enzyme required to hydrolyze 1  $\mu$ mole of p-nitrophenyl-alpha-p-mannoside to p-nitrophenol in 1 minute at pH 5.0 and 37°C.
2. Protein concentration determined by Bradford method, using BSA as a standard.
3. For the protease assay, 10  $\mu$ 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.
4. Unexpected glycosidic activity is tested by incubating the enzyme for 24 hours at 37°C with the appropriate substrates; the detection limit of this assay is 5  $\mu$ U/ml (IUB). A passing lot will have no detectable activity.

President - QA-Bio Inc  
Authorized by Mike Gibson  
June 7, 2023