Megazyme Building 1,
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Certificate of Analysis

Product: Pullulanase M1 (*Klebsiella planticola*)
Cat. No: E-PULKP
Lot. No: 130102C
Expiry Date: December, 2026

Specific activity and level of other activities:

30 U/mg protein (on pullulan) at pH 5.0 and 40°C
One Unit of pullulanase activity is defined as the amount of enzyme required to release one µmole of glucose reducing-sugar equivalents per minute from pullulan (5 mg/mL) in sodium acetate buffer (100 mM), pH 5.0 at 40°C.

Contaminants	%
α-Glucosidase (maltase)	< 0.001
α-Amylase	< 0.007
exo-α-glucanase	< 0.00009

Action on *p*NP-substrates and polysaccharides or oligosaccharides was determined at a final substrate concentration of 5 mM and 5 mg/mL, respectively, in sodium acetate buffer (100 mM), pH 5.0 at 40°C.

This lot meets our specification.

Signature: Ciara McLoughlin **Date:** 10.Nov.2022

Ciara McLoughlin

QC Specialist

(*as this certificate is a computer printout, it has not been signed or dated by hand*)

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