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Certificate of Analysis

Product	Deoxyribonuclease I, Recombinant, Protease and RNase Free, Animal Free/AF
Source	Pichia pastoris
Country of Manufacture	USA
Storage	Store at 2-8°C. PROTECT FROM MOISTURE.
Code	DR1
Lot Number	
Re-Assay Date	
Description	Recombinant Bovine pancreatic Deoxyribonuclease 1 produced in *Pichia pastoris*. Chromatographically purified. Free of animal derived components, RNases, and proteases. A lyophilized powder containing glycine as a stabilizer.
Unit Definition	One Unit causes an increase in absorbance at 260nm of 0.001 per minute per ml, at 25°C, pH 5.0, when acting on highly polymerized DNA according to the assay method of Kunitz (J. Gen. Physiol., 33, 349 and 363, 1950).

Parameter	Result	Acceptance Criteria
u/mg dw	5,870	≥2000 units per mg dry weight
u/mgP	9,031	≥5000 u/mg protein
A280/mg	0.72	Report assay value.
Protease	None detected	None Detected
RNase	None detected	None Detected
SDS PAGE	> 99%	>99% Purity

NOTE: DNase I is very sensitive to denaturation. Mix by gentle inversion. RNases: No change in the band pattern following electrophoresis of 1.5ug of HeLa cell total RNA treated with 6 units DR1 in 20ul 50mM Tris-HCI, pH 7.6 for 1hr at 37°C. Proteases: No development of digestion zones when 200 units of DR1 are incubated in a casein agarose plate for 24 hrs at 37°C. Activated by bivalent metal ions. Maximum activation attained with Mg++ plus Ca++. In the presence of Mg++, DNase I attacks each strand of DNA independently and the sites of cleavage are random. In the presence of Mn++, DNase I cleaves both strands of DNA simultaneously to yield blunt-ended fragments or those that have protruding termini of 1-2 nucleotides.

Approved by: Thomas R. Ryan, Quality Control Manager (signature on file) **Date:** 7/13/20