Worthington Biochemical Corporation

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Certificate of Analysis

Product	Deoxyribonuclease I, Recombinant, Solution
Source	Pichia pastoris
Country of Manufacture	USA
Storage	Store at -20°C.
Code	DR1S
Lot Number	
Re-Assay Date	
Description	Animal Free/AF. Recombinant Bovine pancreatic deoxyribonuclease 1 produced in *Pichia pastoris*. Chromatographically purified. Free of animal derived components, RNases & proteases. A liquid preparation in 5mM Calcium Acetate, 4mg/ml glycine, pH 5.0 and 50% glycerol. Supplied with 10x reaction buffer.
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/µl	2.47	≥2.00 units per microliter
u/mgP	9,880	≥5000 u/mg protein
A280/ml (Bulk)	0.28	Report assay value.
mgP/ml (Bulk)	0.25	Report assay value.
Protease	None detected	None detected
RNase	None detected	None detected
units/vial	2,146	≥2,000 units/vial
SDS PAGE	Satisfactory	>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 DR1S in 20ul 50mM Tris-HCI, pH 7.6 for 1hr at 37C. Proteases: No development of digestion zones when 20 units of DR1S are incubated in a casein agarose plate for 24 hrs at 37C. 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. DR1S is supplied with a 10X reaction buffer (500mM Tris, 10mM MgSO4, 1mM CaCl2, pH 7.8). One unit of DR1S will digest 1 microgram of DNA when incubated in 1X Reaction Buffer (50mM Tris, 1mM $MgSO_4$, 0.10mM $CaCl_2$, pH 7.8)

Approved by: Thomas R. Ryan, Quality Control Manager (signature on file) **Date:** 1/2/19