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Certificate of Analysis

Product	Deoxyribonuclease I, Ribonuclease&Protease Free
Source	Bovine Pancreas
Country of Manufacture	USA
	All products from animal sources are produced from starting material of USDA-approved origin, collected in United States Department of Agriculture (USDA) or equivalent approved facilities, inspected to be free of disease and suitable for exportation. Certificates of Origin are available upon request.
Storage	Store at 2-8°C. PROTECT FROM MOISTURE.
Code	DPRF
Lot Number	
Re-Assay Date	
Description	Molecular Biology Grade. Chromatographically purified to remove RNase and protease. Lyophilized in vial containing glycine and calcium as 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	2,991	≥2,000 Kunitz units per mg dry weight
u/mgP	11,504	≥5000 u/mg protein
A280nm @ 1 mg/ml	0.29	Report assay value.
RNase	None detected	None detected
Protease	None detected	None detected
SDS PAGE	Satisfactory	>90% purity
A280/vial	1.23	Report assay value.
units/vial (10,000 unit vial)	12,680	≥10,000 units per vial

Worthington certifies that all lots of DNase are subjected to a pH of less than 3.0 for greater than five (5) hours during processing. Activated by bivalent metal ions. Maximum activation attained with Mg++ plus Ca++. NOTE: Pancreatic DNase is very sensitive to denaturation. Mix by gentle inversion. Worthington certifies that all lots of deoxyribonuclease are subjected to a pH of less than 3.0 for greater than 5 hours during processing. RNases: No change in the band pattern following electrophoresis of 1.5ug of HeLa cell total RNA treated with 6 units DPRF in 20ul 50mM Tris-HCI, pH 7.6 for 1hr at 37°C. Proteases: No development of digestion zones when 200 units of DPRF 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:** 6/12/18