

## The certainty of a clean start — reliable DNA digestion

### *Recombinant, RNase-free DNase I*

From RT-PCR to transcriptome sequencing, sensitive and specific RNA-based applications build on high-quality RNA input, free of DNA. DNase I isolated from bovine pancreas is commonly used to hydrolyze and remove contaminating DNA. As a native enzyme, it may carry RNase or other animal contaminants that jeopardize production processes and product performance. Our recombinant DNase I from bovine pancreas eliminates this hurdle. Expressed in yeast (*Pichia pastoris*), this efficient, DNA-specific endonuclease is rigorously tested to exclude RNase activity and deliver high performance (Figure 1).

- **Count on reliable DNA digestion and removal**

Proven enzymatic activity efficiently clears samples of DNA for demanding downstream applications.

- **Maintain RNA integrity from the start**

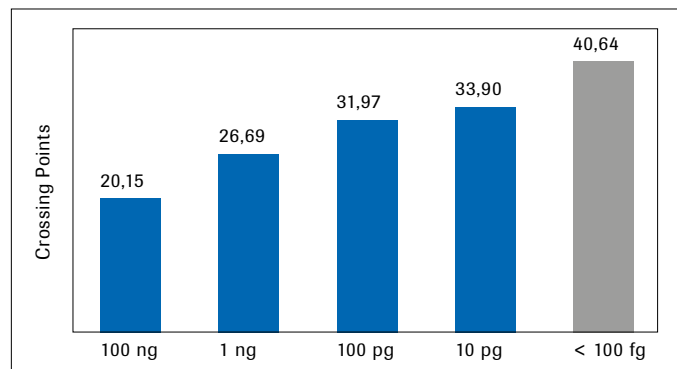
Stringent purity criteria enable isolating full-length RNA that serves as a template even at the 3' end.

- **Boost manufacturing and product quality**

Narrow performance and purity specifications eliminate variability in processes and outcomes.

- **Meet the highest standards in industry**

Animal-free and optionally GMP-conform, our DNase I is easily integrated into standing processes.



**Figure 1: Demonstrated efficient removal of contaminating DNA.**

Human genomic DNA was amplified with specific human b-globin primers in a real-time PCR monitored with SYBR green I dye on the LightCycler® Instrument. Crossing points for various DNA quantities (100 ng, 1 ng, 100 pg, and 10 pg) are depicted as blue bars. The original sample (100 ng) was then digested with 1 unit of recombinant DNase I for 10 min at 37°C and amplified in the same way as the undigested sample. Comparing crossing point values, the shift from 20.15 for the untreated sample to 40.64 for the treated sample (gray column) indicates the efficient elimination of contaminating DNA to values at the detection limit.

## Products and specification

Product name	DNase I, rec., RNase-free	DNase I, rec., Grade I	DNase I, rec., RNase-free, GMP Grade
Catalog number	03 539 121 103    09 483 195 103	03 724 778 103	03 724 751 103
Pack size	200 kU    20 kU	10 kU lyophilizate	4 kU lyophilizate
Origin	From bovine pancreas, expressed in <i>Pichia pastoris</i>		
Molecular weight and structure	39 kDa, glycoprotein		
Appearance	Colorless to slightly yellow solution	White to yellowish lyophilizate	White lyophilizate
Activity (calf thymus DNA)	9-14 kU/ml	≥10 kU/vial lyophilizate	≥4.0 kU/vial
Unit definition	One unit according to Kunitz produces an increase in absorbance increase of 0.001/minute under assay conditions in 1 ml at 260 nm		
Proteases (resorufin-marked casein)	Not detectable in up to 50 U after 17 hours incubation at 37°C		
Ribonucleases (MS2 RNA)	Not detectable in up to 10 U after 4 hours incubation at 37°C	Not detectable in up to 2 U after 4 hours incubation at 37°C	Not detectable in up to 15 U after 4 hours incubation at 37°C
GMP Grade	Yes		Yes
Stability	At -15 to -25°C within specification range for 24 months	At +2 to +8°C within specification range for 24 months	At +2 to +8°C within specification range for 12 months

## Related products

Product name	Catalog number	Pack size
Proteinase K, recombinant, PCR Grade	03 654 672 103	850 ml or custom fill
	03 508 811 103	25 mg
	03 450 376 103	50 mg
	03 508 838 103	100 mg
	03 450 384 103	250 mg
	05 963 117 103	5 g
Guanidine Hydrochloride	11 696 548 103	500 g
Disposables and kits for nucleic acid isolation	Customized solutions are available upon request	

For further processing only.

LightCycler® Instrument: For life science research only. Not for use in diagnostic procedures.

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SYBR is a registered trademark of Thermo Fisher Scientific.

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