



DB Ultima H RNase Inhibitor

The Most Stable and Potent
Inhibitor on the Market



DB Ultima H RNase Inhibitor



RNase inhibitors are common mammalian proteins inactivating ribonucleases to protect the integrity of cellular RNA. Their inhibition is **extremely potent**, making them indispensable to most applications studying RNA. However, all known RNase inhibitors are **highly unstable** and are inactivated at elevated temperatures, during long-term storage and due to their oxidative instability even after exposure to common assay buffers. **DB Ultima H solves all these issues.**

Exceptional thermostability

The only protein RNase inhibitor stable above 55 °C.

Full oxidative resistance

Retains activity without DTT.
Fully active even at 2% H₂O₂.

High buffer/storage stability

Stable at room temperature in usual PCR buffers for months.

Suitable for direct RT-PCR

Even higher activity than human RNase inhibitor in human tissues.

Cost efficient

Can be produced on a large scale and cost efficiently.

Advantages of DB Ultima H RNase Inhibitor

DB Ultima H is the highly engineered RNase inhibitor of **human origin** that inhibits the activity of common RNases found in human tissues and body fluids.

DB Ultima H displays the **unmatched stability and activity** in the most challenging conditions and outperforms all known competitors on the market.

DB Ultima H is available in both glycerol and glycerol-free (lyo-ready) formulations.

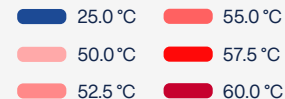
Patent pending

DB Ultima H is the only RNase Inhibitor active at temperatures above 55 °C

55 °C or even higher temperatures are optimal for reverse transcription, increasing the activity of mutated M-MLV reverse transcriptase and leading to the complete inactivation of thermolabile Uracil-DNA glycosylase.

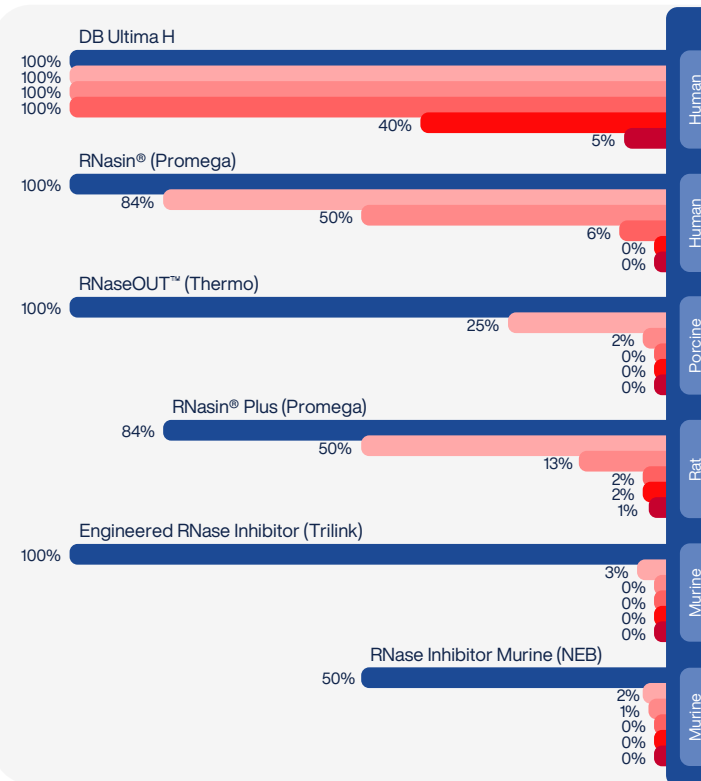
DB Ultima H enables RT-PCR in direct RT-qPCR at higher temperatures, increasing yields and sensitivity.

Tested temperatures



Exceptional Thermostability

Residual Inhibitor Activity (%)
after 5 min incubation in optimal buffer at various temperatures



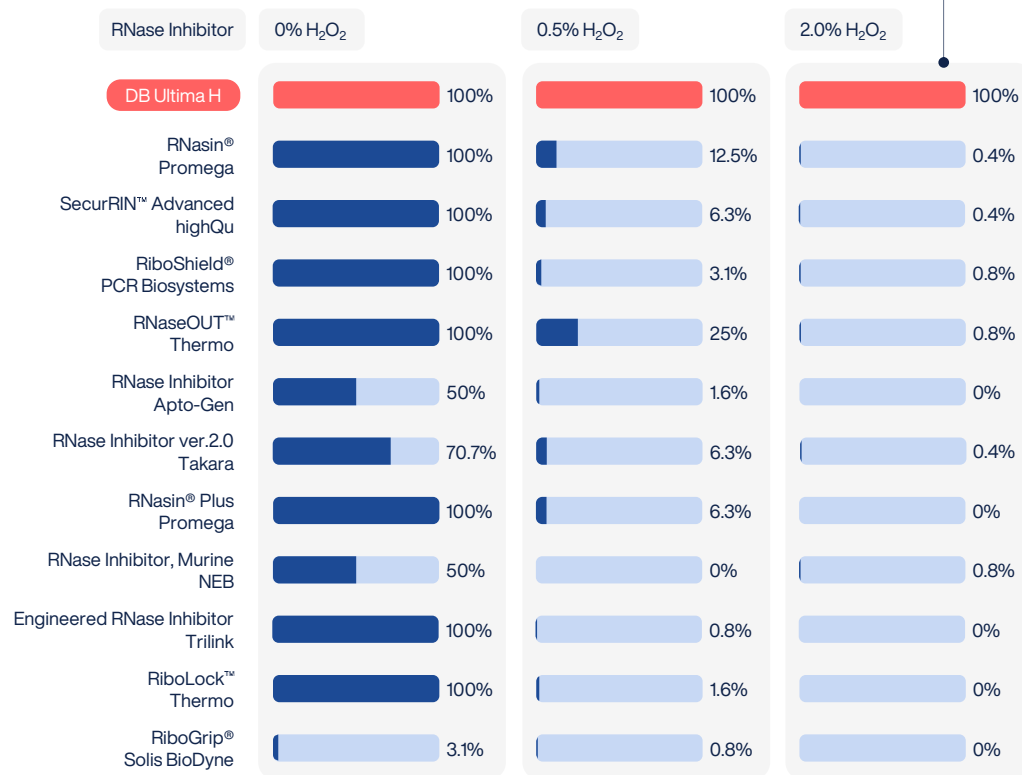
Full Oxidative Resistance



Residual Inhibitor Activity (%)
after pre-incubation with hydrogen
peroxide (H_2O_2) for 20 min (no DTT)

DB Ultima H is the only truly
oxidatively resistant RNase inhibitor

Retains full activity at 2.0% H_2O_2



Excellent Storage and Assay Stability



Residual Inhibitor Activity (%)
after freeze/thaw cycle at -80 °C
(and) one-week storage at 25 °C

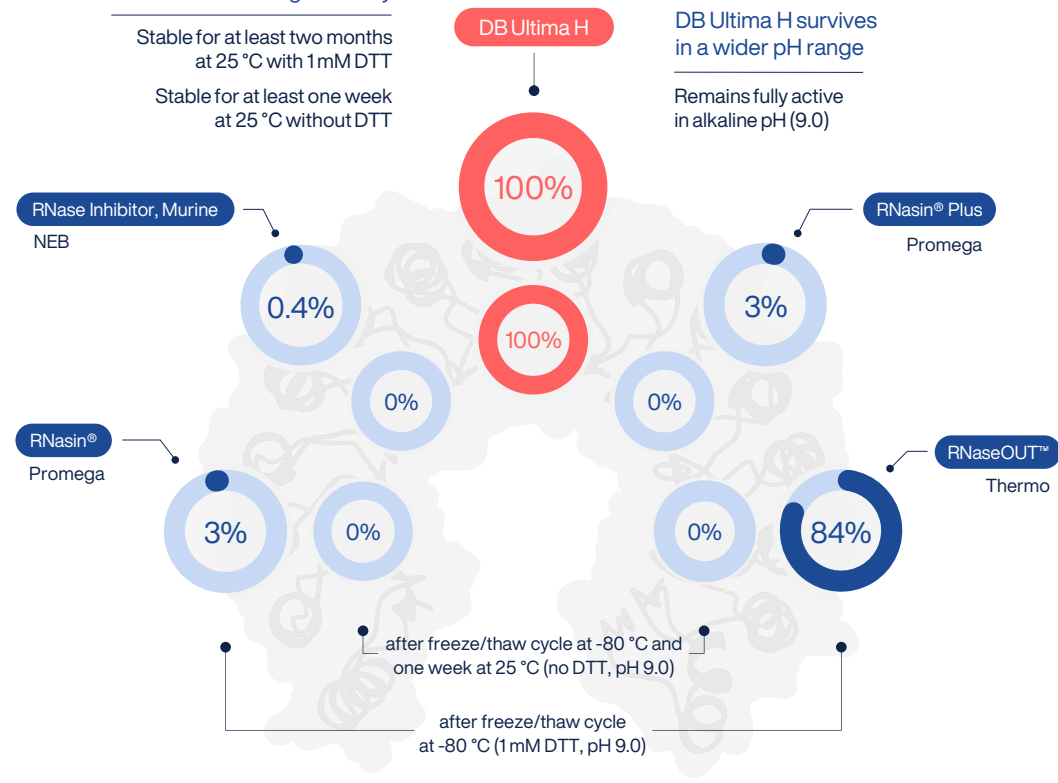
DB Ultima H shows exceptional
reaction and storage stability

Stable for at least two months
at 25 °C with 1mM DTT

Stable for at least one week
at 25 °C without DTT

DB Ultima H survives
in a wider pH range

Remains fully active
in alkaline pH (9.0)

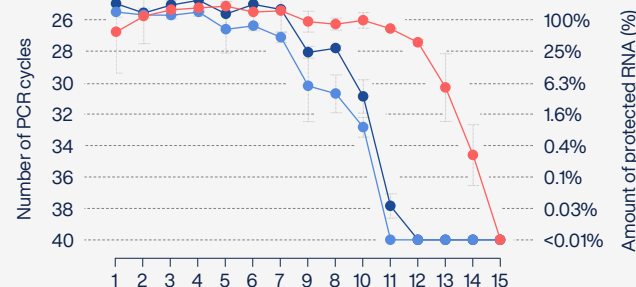


High Performance in Direct RT-PCR

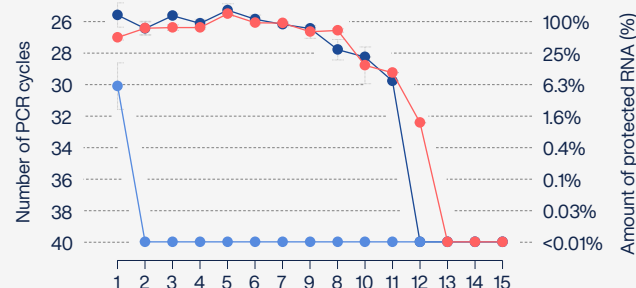


RNA protection
during direct RT-qPCR
from human samples

Direct RT-PCR from 10-fold diluted human serum



Direct RT-PCR from 5-fold diluted human saliva



DB Ultima H can protect
100% of RNA in both
human body fluids

Many viruses could be detected
directly from human tissues without
nucleic acid extraction; however,
human tissues contain complex
mixtures of various RNases.

DB Ultima H ensures full protection
of RNA during direct RT-PCR from
human body fluids.

DB Ultima H ●
RNasin® (Promega) ●
RNaseOUT™ (Thermo) ●

Units of RNase inhibitor
added to 50 µL reaction

1	100 U	6	3.1 U	11	0.10 U
2	50 U	7	1.6 U	12	0.05 U
3	25 U	8	0.78 U	13	0.025 U
4	13 U	9	0.39 U	14	0.012 U
5	6.3 U	10	0.20 U	15	0.006 U

Ordering information

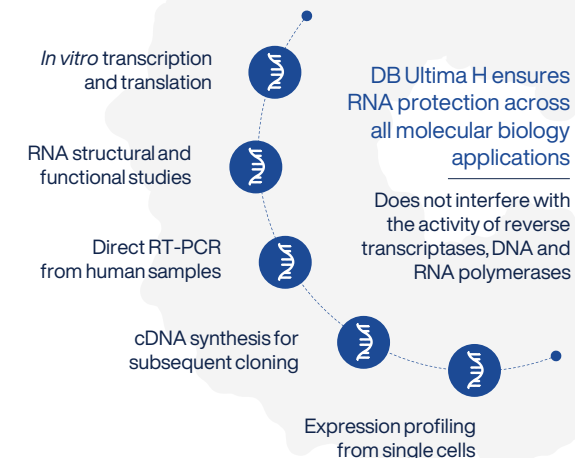
Provided as 40 U/µL solution.
Store at -18 °C to -25 °C.

Size	Catalogue number
2.5 kU	DB-1306-2.5kU
10 kU	DB-1306-10kU
40 kU	DB-1306-40kU

Also available in glycerol-free
(lyo-ready) formulation.
For large inquiries, contact us via
lifescience@dianabiotech.com

N.D. = Not Determined

Applications



Overview of competitors

RNase Inhibitor	Vendor	Thermal stability	Oxidative stability	Storage stability	Direct RT-PCR
DB Ultima H	DIANA	✓✓✓	✓✓✓	✓✓✓	✓✓✓
RNasin®	Promega	✓✓	✗	✗	✓✓
RNaseOUT™	Thermo	✗	✓	✓	✗
RNase Inhibitor, Murine	NEB	✗✗	✗✗	✗	N.D.
RNasin® Plus	Promega	✓	✗	✗	N.D.

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DIANA Biotechnologies is a Czech biotech company producing top-quality molecular biology reagents and enzymes for R&D and diagnostics. Powered by a team of top scientists in chemistry, biochemistry and molecular biology we offer unique proprietary products and technologies not only in molecular biology, but also in engineered proteins & enzymes, custom monoclonal antibody development, kinase profiling and advanced PCR diagnostics.

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