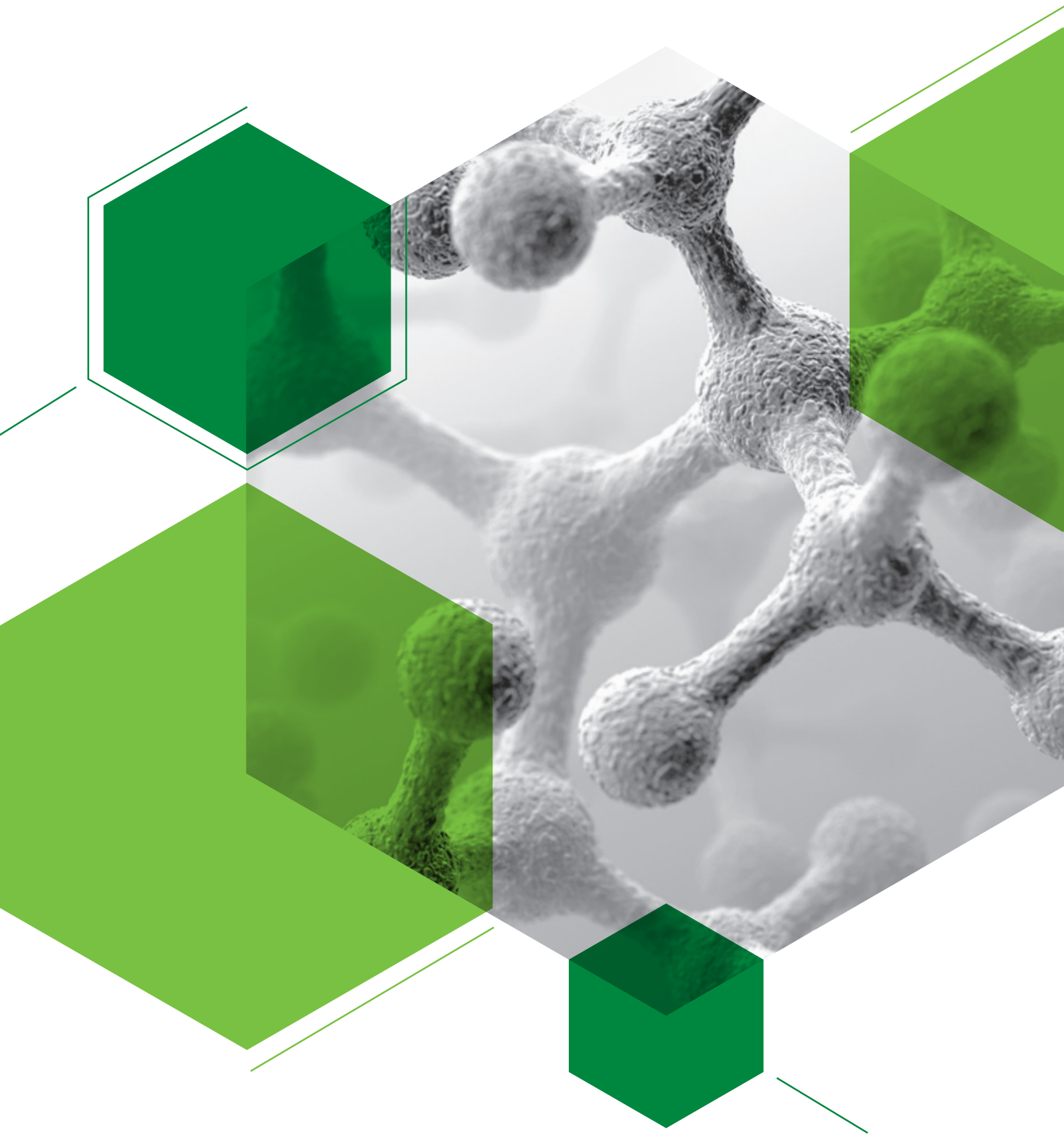
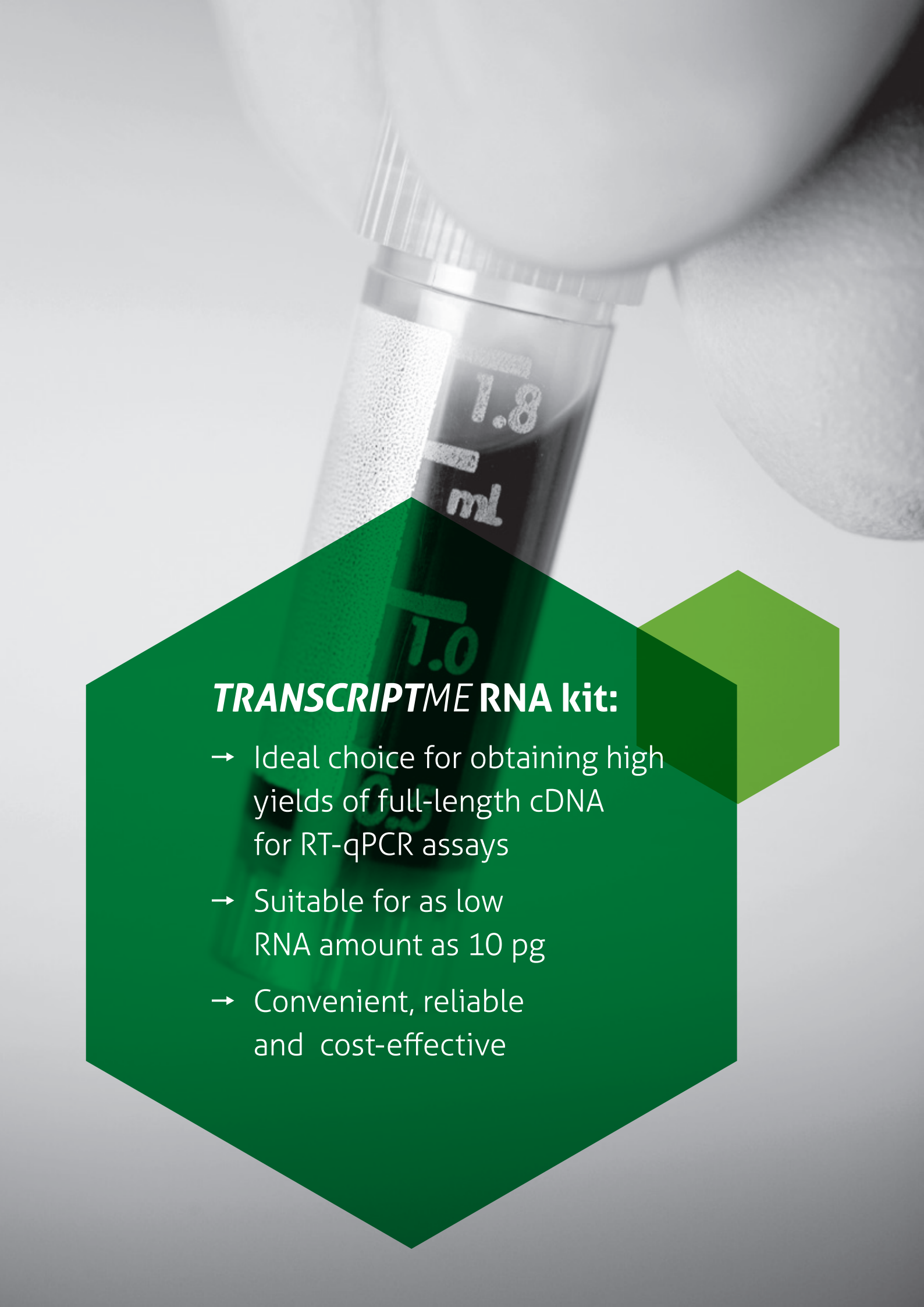
RNA-related Products



blirt DNA GDAŃSK



TRANSCRIPTME **RNA kit:**

- → Ideal choice for obtaining high yields of full-length cDNA for RT-qPCR assays
- → Suitable for as low RNA amount as 10 pg
- → Convenient, reliable and cost-effective

RNA-RELATED PRODUCTS

TRANSCRIPTME RNA Kit – cDNA Synthesis Kit

The ***TRANSCIPTME*** **RNA Kit** is a system which includes all the necessary components to synthesize first-strand cDNA, except for the template RNA. The synthesized single-stranded cDNA is suitable for real-time quantitative RT-PCR applications. The ***TRANSCIPTME*** RNA Kit has been formulated to provide high yields of full-length cDNA product and to increase sensitivity in RT-qPCR. Starting material can range from 100 pg up to 2.5 µg of total RNA. The kit includes a combination of random hexamers and oligo(dT)18 primers for increased sensitivity. The primers are included in the 2x Master Mix, which also contains dNTPs, MgCl2 and an optimized RT buffer. ***TRANSCRIPTME*** Enzyme Mix includes both the ***TRANSCRIPTME*** **Reverse Transcriptase** (RNase H minus) and the ***RIBOPROTECT*** **RNase Inhibitor** for protection against RNA degradation caused by ribonuclease contamination.

The increased thermostability of the ***TRANSCRIPTME*** Reverse Transcriptase allows carrying out the reaction at a higher temperature (optimum activity at 50°C), which may increase the efficiency and specificity of the transcribed RNA regions, which are rich in GC pairs and/or contain secondary structures. The enzyme gives high yields of first strand cDNA up to 10 kb long.

RNase H (from *E. coli*) is provided as a separate tube in the kit to selectively degrade the RNA template in cDNA:RNA hybrids after the first-strand cDNA synthesis. This optional step can improve the sensitivity of subsequent RT-qPCR reaction since PCR primers will bind more easily to the cDNA. The protocol recommends using RNase H only when it contributes to a full-length cDNA synthesis and increased yields of first -strand cDNA.

Features

- High yields of full-length cDNA products (up to 10 kb)
- Formulated to increase sensitivity in RT-qPCR and RT-PCR assays
- Reduced number of pipetting steps – minimized contamination risk
- RNA starting material: 10 pg – 5 µg of total RNA or 10 pg – 500 ng of mRNA
- Optimal reaction temperature: 50°C
- Primer types: oligo$(dT)_{18}$ and random hexamers
- Suitable for the amplification of difficult RNA templates
- Convenient and reliable

Applications

- Full-length cDNA template synthesis for RT-qPCR and two-step RT-PCR assays
- cDNA synthesis for molecular cloning
- cDNA library construction
- RNA analysis

The use of ***RIBO****PROTECT* **RNase Inhibitor** is highly recommended with samples containing endogenous RNases.

Protect your RNA and avoid costly, unsatisfactory results.

TRANSCRIPT*ME* Reverse Transcriptase

The ***TRANSCIRPT****ME* is a modified, recombinant form of the Reverse Transcriptase from the Moloney Murine Leukemia Virus (M-MuLV) purified from *Escherichia coli*. The enzyme has been modified in order to promote stability. The ***TRANSCIRPT****ME* synthesizes the complementary DNA strand in the presence of a primer using either RNA (cDNA synthesis) or single-stranded DNA as a template. It lacks 3' → 5' exonuclease and RNase H activity, which improves synthesis of a full-length cDNA even from long mRNA templates, using random priming. The enzyme gives high yields of first strand cDNA up to 10 kb long.

The increased thermostability of the ***TRANSCRIPT****ME* allows carrying out the reaction at a higher temperature (optimum activity at 50°C), which may increase efficiency and specificity of the transcribed RNA regions which are rich in GC pairs and/or contain secondary structures..

Features

- High yields of full-length cDNA synthesis (up to 10 kb long)
- Maintains the RNA- and DNA-dependent DNA polymerase activities
- Formulated to increase sensitivity in RT-qPCR and RT-PCR assays
- Starting material: 10 pg – 5 µg of total RNA or 10 pg – 500 ng of mRNA
- Optimal reaction temperature: 50°C
- Increased thermostability
- Lacks RNase H and 3'→ 5' exonuclease activities
- Suitable for the amplification of difficult RNA templates

Applications

- Full-length cDNA synthesis for use in RT-qPCR and two-step RT-PCR assays
- cDNA synthesis for molecular cloning
- cDNA library construction
- RNA analysis

Concentration: 200 U/µl

RIBO*PROTECT* – RNase Inhibitor

The ***RIBO****PROTECT* RNase Inhibitor is a recombinant inhibitor of pancreatic ribonucleases, such as RNase A, RNase B and RNase C, purified from *Escherichia coli*. This protein is useful in any application where eukaryotic RNase contamination is a potential problem. This inhibitor can be used to protect RNA template in cDNA synthesis or *in vitro* transcription/translation reactions. The ***RIBO****PROTECT* is not effective against RNase 1, RNase T1, RNase T2, S1 nuclease, RNase H or RNase from *Aspergillus sp.*

Applications

- cDNA synthesis, RT-PCR and RT-qPCR
- *in vitro* transcription/translation
- RNA extraction and purification

Concentration: 40 U/µl

EXTRACTME TOTAL RNA KIT

The ***EXTRACTME*** **TOTAL RNA** kit is designed for the rapid and efficient purification of high quality RNA from 1-30 mg of tissue (fresh or frozen) and 10^4-10^7 cultured cells.

Product specifications:

SAMPLE MATERIAL

- fresh or frozen tissue (stored at -80ºC): 1-30 mg
- tissue preserved in RNase inactivating buffers: 1-30 mg
- cell culture: 10^4-10^7 cells
- body fluids (urine, cerebrospinal fluid, peritoneal fluid): 1-5 ml
- hair: 1-30 mg

BINDING CAPACITY

- Approx. 90 µg RNA

TIME REQUIRED

- 16-20 minutes (lysis and homogenisation time not included)
- 30-60 minutes for homogenization in liquid nitrogen
- 30-40 minutes for mechanical homogenization (ceramic beads)

RNA PURITY

- A_{260}/A_{280} ratio = 1.9 – 2.1

Average RNA isolation efficiencies from fresh biological material:

Sample material	Mass /quantity	Elution volume	RNA conc.	A_{260}/A_{280}	Yield
HCT116 cell culture	10^7	100 µl	947.2 ng/µl	2.09	94.72 µg
HCT116 cell culture	10^4	100 µl	328.3 ng/µl	2.03	32.83 µg
Liver	30 mg	100 µl	923.6 ng/µl	2.07	92.36 µg
Liver	10 mg	100 µl	319.3 ng/µl	1.88	31.93 µg
Liver tumor	30 mg	100 µl	534.6 ng/µl	2.04	53.46 µg
Liver tumor	15 mg	100 µl	467.9 ng/µl	1.91	46.79 µg
Colon	10 mg	100 µl	168.8 ng/µl	2.14	16.88 µg
Colon tumor	30 mg	100 µl	603.7ng/µl	2.06	60.37 µg

RNase H

The RNase H is a recombinant endoribonuclease purified from an *E. coli* strain that carries the cloned RNase H gene (*rnh*). The enzyme selectively hydrolyses the phosphodiester bonds of RNA only when it is hybridized to DNA. The RNase H does not degrade single and double-stranded DNA or unhybridized RNA. It is a key enzyme in the removal of mRNA after first-strand cDNA synthesis. In addition, RNase H is useful for the removal of poly(A) tails on mRNAs after hybridization with oligo(dT), and for oligodeoxyribonucleotide-directed site-specific cleavage of RNA.

Concentration: 5 U/µl

RNase A (DNase-free)

The RNase A is an endoribonuclease, that selectively cleaves single-stranded RNA 3' next to pyrimidine residues (cytosine, uracil). It degrades RNA to cyclic nucleotide monophosphates leaving a 5'-OH and 2'-, 3'-cyclic monophosphate. The enzyme exhibits no endonuclease or exonuclease activity towards DNA substrates. The RNase A is used to remove RNA during the isolation procedures of plasmid and genomic DNA.

Applications

- → RNA protection assays
- → Purification of RNA-free DNA
- → Plasmid and genomic DNA isolation
- → Removal of RNA during recombinant proteins preparations

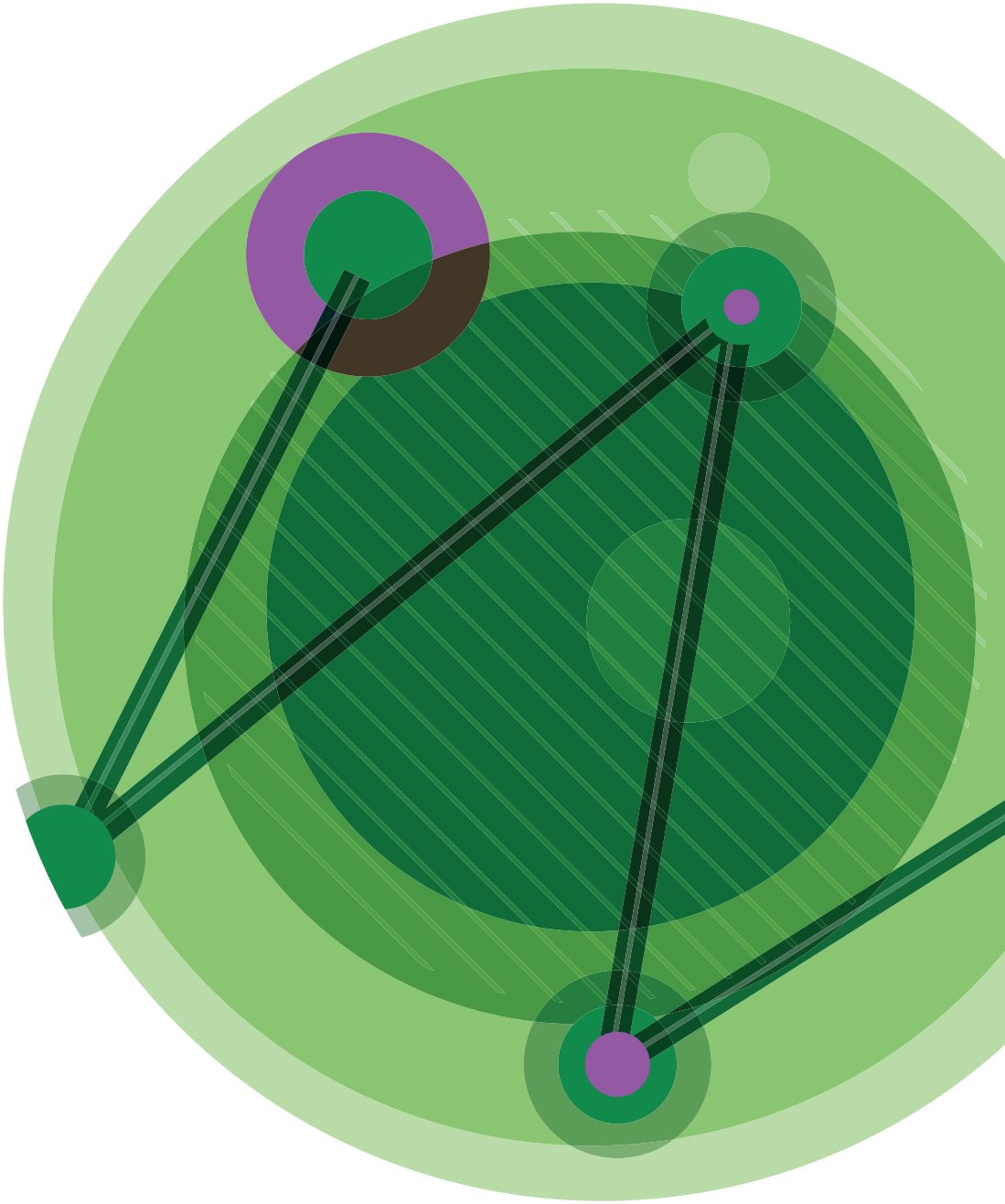
Activity: 90 U/mg (Kunitz)

PRODUCT	SIZE	CAT. NO.
TRANSCRIPT*ME* **RNA Kit** cDNA synthesis Kit	20 reactions	RT31-020
	100 reactions	RT31-100
TRANSCRIPT*ME* Reverse Transcriptase	10.000 U	RT32-010
	50.000 U	RT32-050
RIBO*PROTECT* RNase Inhibitor	2000 U	RT33-020
	10.000 U	RT33-100
EXTRACT*ME* TOTAL RNA KIT	25 isolations	EM09-025
	100 isolations	EM09-100
	250 isolation	EM09-250
EXTRACT*ME* TOTAL RNA PLUS KIT The kit additionally include tubes for homogenisation with ceramic filling	25 isolations	EM11-025
	100 isolations	EM11-100
	250 isolation	EM11-250
RNase H	250 U	RT34-025
	1250 U	RT34-125
RNase A (DNase-free)	10 mg	RP14
	50 mg	RP145

EXTRACTME®
TOTAL RNA KIT

The first step to successful RNA analysis is the extraction of pure, intact and high-quality RNA.

We recommend the ***EXTRACTME*** **TOTAL RNA KIT** for extraction of high quality RNA from animal tissue or cell cultures.



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