MACHEREY-NAGEL

RNA, DNA, and protein purification

NucleoZOL

Universal reagent for RNA isolation

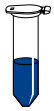
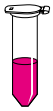
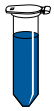
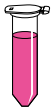
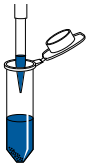
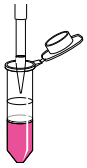
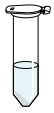
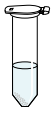
Do it right!

- No chloroform, no phase separation, easy handling
- High RNA yield and purity from any sample material
- Small and large RNA in one or in separated fractions

…high RNA yields for perfect results

Bioanalysis

Procedure

NucleoZOL		Competitor Zol	
	Sample homogenization		Sample homogenization
	Addition of water ⊕ Non-toxic		Addition of chloroform ⊖ Toxic
	Centrifugation at RT Precipitation of contaminants		Centrifugation at 4 °C Liquid-liquid phase seperation
	Aspiration of whole supernatant with RNA ⊕ Easy sampling of RNA		Aspiration of aqueous phase with RNA ⊖ Inconvenient pipetting for phase separation ⊖ Risk of carry-over of interphase / polar phase ⊖ Refrigerated centrifuge necessary
	Centrifugation at RT Precipitation of RNA		Centrifugation at 4°C Precipitation of RNA
	Washing of RNA RNA in pellet		Washing of RNA RNA in pellet
	Resuspension of RNA ⊕ No drying of RNA necessary ⊕ Quick and easy		Drying and resuspension of RNA ⊖ Time-consuming drying of RNA

Summary of advantages of NucleoZOL compared to competitor Zol

The table indicates the advantages of NucleoZOL procedure compared to typical competitor Zol products. The NucleoZOL procedure offers an easy and much more convenient liquid handling. A laborious chloroform two-phase separation is not necessary.

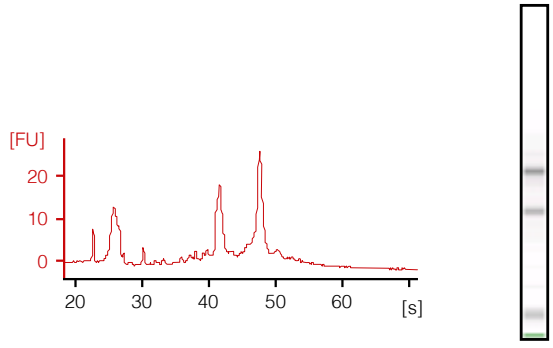
	NucleoZOL	Common competitor products
Procedure	One phase procedure minimizes the risk of contamination by carry-over	Phase separation leads to risk of DNA / protein / phenol carry-over or sample loss
Removal of DNA and proteins	Precipitation of DNA and proteins results in minor risk of contamination	Contamination possible due to difficult phase separation
Solubilization of RNA	No drying required	Time-consuming drying step required
miRNA isolation	Protocol for fractionation of small and large RNA	No protocol for selective miRNA isolation available
Handling	All steps are performed at room temperature	Necessity of refrigerated centrifuge

NucleoZOL – The universal reagent for RNA isolation

Product at a glance

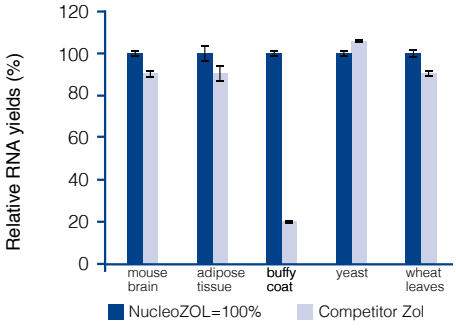
Technology	One-phase extraction			
Sample material/mL reagent (scalable)	< 1 x 10^7 cultured cells, bacteria, and yeast, < 100 mg human / animal / plant tissue, < 0.4 mL (viral) fluids			
Fragment size	Small RNA = 10–200 nt, large RNA > 200 nt			
Typical yield	Total RNA:		Large RNA:	
	Liver:	6–8 µg/mg tissue	Liver:	5–7 µg/mg tissue
	Kidney, spleen:	3–4 µg/mg tissue	Kidney, spleen:	3–4 µg/mg tissue
	Muscle, brain, lung:	0.5–1.5 µg/mg tissue	Muscle, brain, lung:	0.5–1.5 µg/mg tissue
	Cultured cells:	4–10 µg/10^6 cells	Cultured cells:	3–8 µg/10^6 cells
A_{260}/A_{280}	1.8–2.1			
Typical RIN	> 9			
Elution volume	Flexible			
Preparation time	< 1 h			
Can be combined with	NucleoSpin® RNA kits for, e.g., post clean-up			

Application data



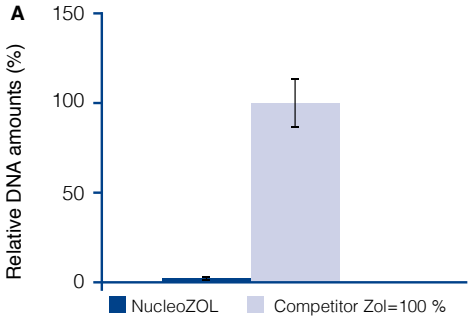
High RNA quality from fibrous tissue

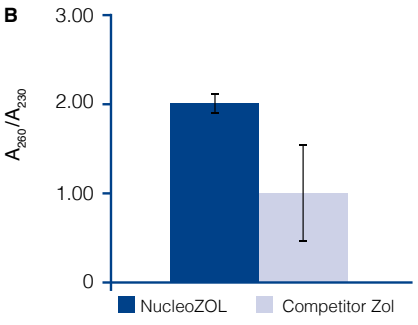
Total RNA was isolated with NucleoZOL from 60 mg mouse heart tissue. RNA was analyzed on an Agilent Bioanalyzer. The RIN of 9 indicates perfect RNA quality.



Market-leading RNA yields

RNA was extracted from different starting materials. RNA was quantified by qRT-PCR and relative yields were calculated (NucleoZOL=100 %). RNA isolation with NucleoZOL results in similar or better RNA yields compared to standard two-phase extraction methods (competitor Zol).





Low DNA contamination and no phenol carry-over with NucleoZOL

Total RNA was isolated with NucleoZOL and competitor product Zol from 50 mg rat lung tissue.

A DNA contamination was quantified by qPCR (competitor Zol=100 %). Compared to a standard two-phase extraction, only a minimum of DNA is carried over during purification with NucleoZOL.

B Absorption ratio A_{260}/A_{230} of NucleoZOL shows excellent purity. Low A_{260}/A_{230} ratios in samples with competitor Zol indicate a phenol carry-over.

	Pack of	REF
NucleoZOL	200 mL	740404.200

NucleoZOL – The universal reagent for RNA isolation

Do it right!

During the years, MN Bioanalysis has gained vast experience in nucleic acid purification and thus developed into highly skilled RNA experts. The MN research and the technical support team are current in all RNA applications. This has enabled MN to provide high-value RNA purification products in view of the expansive research applications.

We invite you to take advantage of the excellent RNA purification products as well as our team of scientific experts from MACHEREY-NAGEL.

· Qualified
· Customer-focused
· Reliable

Our friendly team is looking forward to give you professional advices to our wide range of products!

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Ordering information

Product	Preps	REF
RNA from cells and tissue		
NucleoSpin® RNA Plus	10 / 50 / 250	740984.10 / .50 / .250
NucleoSpin® RNA	10 / 50 / 250	740955.10 / .50 / .250
NucleoZOL	200 mL	740404.200
NucleoSpin® RNA XS	10 / 50 / 250	740902.10 / .50 / .250
NucleoSpin® RNA Midi	20	740962.20
NucleoSpin® 8 RNA	12 x 8 / 60 x 8	740698 / .5
NucleoSpin® 8 RNA Core Kit*	48 x 8	740465.4
NucleoSpin® 96 RNA	2 x 96 / 4 x 96 / 24 x 96	740709. 2 / .4 / .24
NucleoSpin® 96 RNA Core Kit*	4 x 96	740466.4
NucleoMag® 96 RNA	1 x 96 / 4 x 96	744350.1 / .4
MicroRNA		
NucleoSpin® miRNA	10 / 50 / 250	740971.10 / .50 / .250
NucleoSpin® miRNA Plasma	10 / 50 / 250	740981.10 / .50 / .250
Exosome Precipitation Solution (Serum/Plasma)	2 mL / 12 mL / 60 mL	740398.2 / .12 / .60
Exosome Precipitation Solution (Urine)	12 mL / 50 mL / 250 mL	740399.12 / .50 / .250
RNA, DNA, and protein		
NucleoSpin® TriPrep	10 / 50 / 250	740966.10 / .50 / .250
NucleoSpin® RNA/Protein	10 / 50 / 250	740933.10 / .50 / .250
NucleoSpin® RNA/DNA Buffer Set	100	740944
RNA from blood		
NucleoSpin® RNA Blood	10 / 50 / 250	740200.10 / .50
NucleoSpin® RNA Blood Midi	20	740210.20
NucleoSpin® 8 RNA Blood	12 x 8 / 60 x 8	740220 / .5
NucleoSpin® 96 RNA Blood	2 x 96 / 4 x 96	740225.2 / .4
Small and large RNA from FFPE samples		
NucleoSpin® totalRNA FFPE	10 / 50 / 250	740982.10 / .50 / .250
NucleoSpin® totalRNA FFPE XS	10 / 50 / 250	740969.10 / .50 / .250
RNA from plant		
NucleoSpin® RNA Plant	10 / 50 / 250	740949.10 / .50 / .250
Poly(A) mRNA isolation from total RNA		
NucleoTrap® mRNA Mini	12	740655
NucleoTrap® mRNA Midi	12	740656

* Kit mainly for use on automation platforms. Additional accessories can be combined as needed.

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