Instructions for use

ROTI®Elution Tubes

9263

For gel elution and purification of DNA/RNA and proteins

Easy-to-handle system for gel elution and purification of DNA/RNA and proteins in solution

Introduction and product description:

- Typical recovery rate of >95 %.
- Very gentle, preserves native molecules.
- Compatible with all popular electrophoresis units.

This very gentle method guarantees the non-disruptive purification of high-molecular or genomic DNA as well as of native protein complexes and long peptides. Using membranes of low MWCO, elution of very small DNA fragments is possible, making the tubes a very useful tool for the efficient desalting of primers within 60-100 min as well as for purification of siRNA (ss or duplexes).

Membranes

Membranes are made from regenerated cellulose, free of sulphate and heavy metals and have been treated with EDTA. Nonspecific protein binding by the membrane is negligible.

Compatibility

Compatible with pH 2-12, Compatible with 0 °C to +60 °C, Compatible with a variety of organic solvents. At delivery free of DNase, RNase, Proteinase and PCR products.

Table 1. Technical specifications

Type	MWCO	Sample vol.	Packed	Storage temp.
MINI 8	8	10-250 µl	dry	+15-25 °C
MINI 14	14	10-250 µl	dry	+15-25 °C
MINI 25	25	10-250 µl	wet	+4 °C
MIDI 1	1	50-800 µl	wet	+4 °C
MIDI 3.5	3,5	50-800 µl	dry	+15-25 °C
MIDI 8	8	50-800 µl	dry	+15-25 °C
MAXI 3.5	3,5	0.1-3 ml	dry	+15-25 °C
MAXI 8	8	0.1-3 ml	dry	+15-25 °C
MAXI 14	14	0.1-3 ml	dry	+15-25 °C
MAXI 25	25	0.1-3 ml	wet	+4 °C
MAXI 50	50	0.1-3 ml	wet	+4 °C
MEGA 3.5/10	3,5	3-10 ml	dry	+15-25 °C

Table 1: continued Technical specifications

Type	MWCO	Sample vol	Packed	Storage temp
MEGA 3.5/15	3,5	10-15 ml	dry	+15-25 °C
MEGA 3.5/20	3,5	15-20 ml	dry	+15-25 °C
MEGA 8/10	8	3-10 ml	dry	+15-25 °C
MEGA 8/15	8	10-15 ml	dry	+15-25 °C
MEGA 8/20	8	15-20 ml	dry	+15-25 °C
MEGA 14/10	14	3-10 ml	dry	+15-25 °C
MEGA 14/15	14	10-15 ml	dry	+15-25 °C
MEGA 14/20	14	15-20 ml	dry	+15-25 °C

For research use only

ROTI®Elution tubes have been developed, designed and sold for research purposes only. They are not to be used for human diagnostic purposes or drug production, nor for production of any substance intended to be administered to humans, unless expressly cleared for that purpose by the Food and Drug Administration in the USA or the appropriate regulatory authorities in the country of use. All due care and attention should be exercised in the handling of materials described in this text.

Caution:

ROTI®Elution Tubes with MWCO 1, 25 and 50 kDa are provided wet, packaged in a stabilisation solution containing ethanol. Corresponding Art. Nos. are as follows:
9284, 9263, 9428, 9489. These tubes have been classified as

All other tubes have not been classified according to GHS regulations.

Literature Citation: When describing a procedure for publication using this product, please refer to it as *Carl Roth's ROTI®Elution Tubes*.

1. Materials provided and storage conditions

ROTI®Elution Tubes MINI and MIDI are provided with one cap only.

ROTI®Elution Tubes MAXI are provided with two caps. For sample volumes less than 2 ml, use the 2-ml cap with long core. For sample volumes between 2 and 3 ml, use the 3-ml cap (short core).

ROTI®Elution Tubes MEGA are provided with one cap each, which decides the sample volume that may be assayed.

ROTI® elution tubes with MWCO 1, 25 and 50 kDa are wet packed in stabilising solution (25 % ethanol, 2 mM EDTA) and should be stored under refrigeration. All other elution vials are dry packed and can be stored at room temperature.

The user is responsible to validate the performance of the ROTI®-Prep Elution Tubes for any particular use, since the performance characteristics of our products have not been validated for any specific application.

2. Further useful material

- ROTIphorese® 10x TAE Buffer *light*, Art. No. 0122
- ROTI®-PinkDNA Art. No. HP54
- Ethanol 100 % p.a., Art. No. 9065

- ROTI®-Stock 100x TE buffer, Art. No. 1052
- Water for molecular biology, Art. No. T143
- ROTI®-Prep PCR Purification Kit, Art. No. 8503
- ROTI®-Blue, Art. No. A152
- ROTI®-Blue quick, Art. No. 4829
- Trichloroacetic acid, Art. No. 8789
- SpectraPor®-Absorbent, Art. No. 0115

Equipment like centrifuges, pipets etc. is not listed. For centrifugation use a standard microfuge or, for bigger tubes, a table-top centrifuge.

3. Application

Suitability

- Desalting of primers and purification of siRNA (ss or duplexes)
- Dialysis of biomolecules
- Elution of oligonucleotides, dsDNA(15 bp-100 kb), ssDNA(≥20 nt), RNA (each size), proteins and protein/nucleic acid complexes
- Elution from agarose and PAGE
- Elution from non-denaturing and denaturing (SDS) polyacrylamide gels, one-dimensional and two-dimensional polyacrylamide gels, and isoelectric focusing gels
- Elution of molecules for direct application to subsequent enzymatic assays
- Elution of proteins for analysis by MALDI-MS (Matrix-assisted Laser Desorption/Ionization Mass Spectrometry).
- Use in individual assays or in high-through-put applications

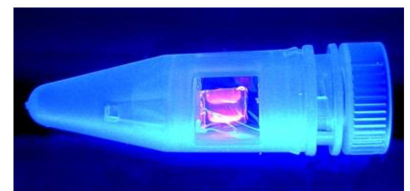
Typical applications

Purification of DNA and proteins from gels, elution of genomic DNA or total RNA, preparation of DNA fragments prior to cloning, purification of siRNA for RNAi assays, purification/desalting of oligonucleotides/primers, purification of RNA or DNA for transfection or transformation, desalting or buffer change of protein solutions.

Mechanism of electroelution

Due to two windows with inserted dialysis membranes in the plastic tubes, the applied current flow easily reaches – and affects – the inside buffer chamber. Driven by this force, the DNA/RNA/protein molecules initially migrate from the gel slice until they are halted by the dialysis membrane. By briefly reversing the polarity of the electrical field, the molecules can be separated from the membrane and pipetted out of the tube together with the buffer. The buffer can then easily be concentrated by using the usual methods (e.g. precipitation).

A: ROTI®Elution Tube under UV-light with a DNA containing agarose slice stained by ethidium bromide

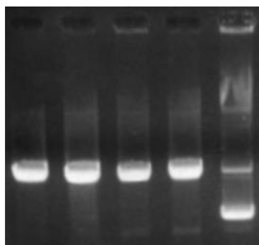


B: ROTI®Elution Tubes MIDI positioned in ROTI® Elution Tube Tray

Mechanism of dialysis / desalting:

When the dialysis tubes are filled with buffer of high osmolarity and are placed into a buffer reservoir of very low osmolarity, the windows with inserted dialysis membranes allow nearly direct contact between both media. The significant difference in concentrations causes an osmotic pressure, which cannot be reduced by an influx of water, thus causing migration of small molecules (e.g. salts) from the inner chamber into the outer reservoir.

C: Dialysis of the restriction enzyme *Pst*I in enzyme buffer/8 M urea against pure enzyme buffer



D: Detection of enzymatic activity after dialysis by digestion on plasmid DNA (1-4). Untreated control (5).

Recommended choice of MWCO:

The Molecular Weight Cut Off is not a clear border, but rather an approximate value of maximum pore sizes. The MWCO has to be chosen in accordance with the size of the molecules to be eluted / purified. Molecules have to be at least twice (DNA/RNA) or three times bigger than the MWCO in order to retain them quantitatively by the membrane. Use the following Table 2 for selection.

Table 2. Selection of MWCO

MWCO (kDa)	RNA/ssDNA	dsDNA	Proteins
1	15-50 nt	15-25 bp	3-10 kDa
3.5	50-250 nt	25-100 bp	10-30 kDa
8	250-1000 nt	100-500 bp	25-50 kDa
14	1-5 knt	0.5-2 kb	45-100 kDa
25	5-30 knt	2-10 kb	80-200 kDa
50	>30 knt	10-100 kb	>150 kDa

Before you start, be sure to

When using *wet* ROTI®Elution Tubes, wash them thoroughly, outside and inside with deionized water.

Fill the ROTI®Elution Tube(s) to be used with the amount of deionized water indicated in Table 3. Do not screw the cap. Incubate upright for at least 5 mins. Check that there is no water leaking from the tube. The water level will slightly decrease as dry membranes absorb some of the water.

Table 3. Water volume for washing procedure

ROTI®Elution Tubes	Vol. of deionised water / washing
MINI	250 µl
MIDI	800 µl
MAXI	3 ml
MEGA	20 ml

General notes:

Use only one gel slice per tube. Recovery rate may decrease significantly if several slices are electroeluted in the same tube.

Avoid fixation of protein gels before electro elution (e.g. fixation with methanol, acetic acid, etc). **Fixation will significantly reduce extraction yield**. We recommend non-fixation staining with ROTI®-Blue or ROTI®-Blue quick.

In case proteins are to be analysed subsequently by MALDI, we recommend to thoroughly remove the SDS in order to ensure sensitive measurement. Follow the electroelution protocol below with the Notes for MALDI-MS.

Warning: For electroelution of proteins, the pH of the buffer **must not** be adjusted!

Adding acid or base to the buffer will result in higher conductivity and, therefore, to a decrease of the resistance. In line with Ohm's law, the Power Supply increases the current drastically in order to keep the defined voltage constant:

U (voltage) = I (current) x R (resistance)

Current may increase to several amperes, providing extensive heat and significant danger!

4. Workflow

General workflows have been provided on a separate page, in order to use a copy for in-process protocol or filing in your personal lab files.

4.1 DNA and RNA extraction from agarose or polyacrylamide gels

1. Wash the tubes as given above.
2. Excise gel slice containing desired DNA or RNA fragment using a clean, sharp scalpel. Trim away excess gel.
3. Remove the water from the ROTI®Elution Tube. Transfer the gel slice into the tube. The maximum gel slice capacity per device is indicated in Table 4 (see below).
4. Fill the tube with fresh running buffer to top of the membranes (for volumes see Table 3). Avoid introducing air bubbles in the tube. Gently close the tube.

   Note: Generally, use the same type of running buffer that was used in the gel separation step. However, in case subsequent enzymatic assays are to be performed, it is recommended to use a buffer version with less EDTA (e.g. ROTIphorese® 10x TAE Buffer *light*).
5. Clip the tube into the Supporting Tray (see figure B) and place this into an electrophoresis unit filled with the same buffer type filled into the tube. ROTI®Elution Tubes have to be fully immersed. The two membranes must be positioned **perpendicular** to the electric field to permit electric current to pass through the tube.
6. Apply electric current (usually at 80-150 volt) until nucleic acid exits gel slice.

   Note: The optimum electroelution parameters must be determined for each sample and gel concentration. For *general minimum* electroelution times see Tables 5 and 6. Electroelution times used for elution from MEGA tubes have to be evaluated for the particular DNA fragment and gel slice.
7. Release nucleic acid from membrane by reversing polarity of electric current for 2 mins.

8. Gently open ROTI®Elution Tube. Pipet eluate up and down at least 5 times on the inner side of the membrane, taking care to avoid gel slice and to not to puncture the membrane. Transfer eluate to a clean reaction tube.

9. Centrifuge eluate for 1 min at maximum speed to pellet gel residues.

10. Transfer supernatant to clean reaction tube. Concentrate nucleic acids using standard precipitation protocols (see below) or ROTI®-Prep PCR Purification.

Table 4. Volumes of gel slices and buffer

ROTI®Elution Tubes	Gel slice up to approx. (cm)	Vol. of running buffer added
MINI	0.4 x 1.0	0.2 ml
MIDI	0.5 x 1.2	0.8 ml
MAXI	1.0 x 2.0	1.8 - 2.8 ml *
MEGA	preparative	9 / 14 / 19 ml *

* Depending on the caps used

Table 5. Minimum time generally required for elution of RNA from 4 % PAGE at 100 volts.

RNA size (nt)	Time (min)
	MIDI
100	15
400	25
600	35
1000	45

Table 6. Minim. time gener. required for elution of DNA fragm. from 4 % PAGE at 100 volts.

DNA fragment size (bp)	Time (min)		
	MINI	MIDI	MAXI
100	10	10	10
200	15	12	15
300	20	15	20
500	30	20	30
800	40	25	40
1000	55	30	55
1400	75	35	75
2700	100	45	100

Subsequent: Precipitation of nucleic acids

1. Optionally: + 1µl ROTI®-PinkDNA for making the pellet visible.
2. Add 1/10 vol. 3 M sodium acetate + 2 vol. 100 % ethanol (p.a.)
3. Incubate for >1 h at -20 °C (optionally: >20 min. at -80 °C)
4. Centrifuge for 15 min. at 14.000 rpm (minifuge, approx. 15.000 g)
5. Remove and discard supernatant*
6. Rinse pellet with 70 % Ethanol
7. Centrifuge for 3 min. at 14.000 rpm (minifuge, approx. 15.000 g)
8. Remove and discard supernatant*
9. Centrifuge for 10 sec. at 14.000 rpm (minifuge, approx. 15.000 g)
10. Completely remove residual ethanol*
11. Leave reaction tube open on table top for air drying of the pellet (ca. 5 min.)
12. Resolubilise pellet for 5 mins. at room temperature in chosen amount of liquid (10 mM Tris buffer (pH ca. 8), diluted ROTI®-Stock 100x TE buffer, water for molecular biology)
13. Freeze DNA for storage at -20 °C (optionally in aliquots)

* If desired, the material may be stored for a few hours and may finally be discarded after the isolation has been proven to be successful.

4.2. Protein extraction from polyacrylamide gels

Note: For electroelution of proteins, the pH of the buffer **must not** be adjusted!

1. Wash the tubes as given above.

2. Excise gel slice containing the desired protein using a clean scalpel. Trim away excess gel.

3. Remove the water from the ROTI®Elution Tube. Transfer the gel slice into the tube. The maximum gel slice capacity per device is indicated in Table 7 (see below).

4. Fill the tube with fresh protein-running buffer to top of the membranes (for volumes see Table 3). Avoid introducing air bubbles in the tube. Gently close the tube.

Use the same type of running buffer that was used in the gel separation step. Typical SDS-PAGE running buffers (Tris-Glycine-SDS) may be used for standard MS applications.

Note for MALDI-MS: For some proteins use of Tricine based buffers is recommended (e.g. 250 mM Tricine, 25 mM Tris-base, 0.025 % SDS). The optimal buffer has to be evaluated.

5. Clip the tube into the Supporting Tray (see figure B) and place this into an electrophoresis unit filled with the same buffer type filled into the tube. ROTI®Elution Tubes have to be fully immersed. The two membranes must be positioned **perpendicular** to the electric field to permit electric current to pass through the tube.

6. Apply electric current (usually at 100 volt) until the protein exits the gel slice. The minimum electroelution time for BSA (66 kDa) from a 10 % SDS-PAGE gel is at least 85 min.

Note: The optimum electroelution parameters must be determined for each sample and gel slice. For *general minimum* electroelution times see Table 8. Electroelution times used for elution from MINI and MEGA tubes have to be evaluated for the particular protein and gel slice.

Note for MALDI-MS: Due to the lower amount of SDS generally used for samples that will be analyzed by MALDI-MS, the usual electric current for elution is 150 V. The minimum electroelution time for BSA from a 10% SDS-PAGE under these conditions is at least 2 h.

7. Release protein from membrane by reversing polarity of electric current for 2 mins.

8. Gently open ROTI®Elution Tube. Pipet eluate up and down at least 5 times on the inner side of the membrane, taking care to avoid gel slice and to not to puncture the membrane. Transfer eluate to a clean reaction tube.

9. Centrifuge eluate for 1 min at maximum speed to pellet gel residues.

10. Transfer supernatant to clean reaction tube.

Note: The protein may be used immediately, concentrated by standard concentration methods, precipitated (see below) or dialysed. If desired, the same ROTI®Elution Tube used for electroelution may be used for dialysis. In this case, carefully remove gel slice, taking care not to puncture the membranes. See below protocols for Dialysis and sample concentration.

Table 7. Volumes of gel slices and buffer

ROTI®Elution Tubes	Gel slice up to approx. (cm)	Vol. of running buffer added
MINI	0.4 x 1.0	0.2 ml
MIDI	0.5 x 1.2	0.8 ml
MAXI	1.0 x 2.0	1.8 - 2.8 ml *

* Depending on the caps used

Table 8. Mininum time generally required for elution of proteins from 10 % PAGE at 100 volts.

Protein size (kDa)	Time (min)		
	MINI	MIDI	MAXI
14	30	35	50
18	35	45	55
25	40	50	70
29		55	
35	50		110
40		60	
45	55	65	130
50		75	
66	70	85	150
81		105	
116	90	120	180
128		140	

Subsequent: Protein precipitation

1. Add 1 volume 20 % trichloroacetic acid (TCA) to sample. Mix thoroughly by vortexing.

   Note for MS / MALDI-MS: Add 0.5 vol 20 % TCA (for standard MS) or 0.2 vol 50 % TCA (for MALDI-MS).

2. Incubate 1 hr at 4 °C.

3. Centrifuge sample at 4 °C for 30 min at 14.000 rpm (minifuge, approx. 15.000 g) up to 60 min. (table-top centrifuge, 8-10.000 g). Decant supernatant carefully.

4. Add 0.5-2 ml cold 100 % acetone to wash the pellet (amount depending on pellet size). Mix thoroughly by vortexing.

7. Incubate at -20 °C for 30 min. Incubation at -20 °C overnight may increase recovery rate.

8. Centrifuge at 4 °C for 30 min at 14.000 rpm (minifuge, approx. 15.000 g) up to 60 min. (table-top centrifuge, 8-10.000 g). Decant supernatant and air-dry the pellet.

9. Resuspend pellet in an appropriate volume 0.1 M NaOH or deionised water. If deionised water is used, incubate sample for 5 min. at 60 °C, resuspend the sample and incubate 5 min. more at 60 °C.

   Note for MALDI-MS: A resuspension buffer suitable for MALDI-MS has to be chosen according to the characteristics of the protein.

4.3 Dialysis and desalting

1. Wash the tubes as given above.

2. Remove water from ROTI®Elution Tubes. Add sample and close the tube. We recommend filling the tube completely with the sample, or else an influx of water will be caused.

3. Place ROTI®Elution Tubes in a floating rack of an equivalent stand. Place rack in a beaker containing 100- to 1000-fold sample volume of desired dialysis buffer (see Table 9) and a stir bar. Let dialysis / desalting proceed under slow stirring.

4. Change dialysis buffer every one or two hours.

   Note: Dialysis parameters for each particular sample have to optimised. Low-molecular weight salts and buffers (e.g., Tris•Cl and KPO_4) equilibrate within 3 hours. Equilibration times for viscous or particularly high concentrated samples will be longer.

5. In case the sample volume increased during dialysis, let your sample evaporate on the bench top making sure to check every 10 min or less to prevent evaporation to dryness. Concentration of the sample may be enhanced and speeded up by incubation of the dialysis unit in SpectraPor®-Absorbent.

6. Carefully remove sample from ROTI®Elution Tubes with a pipet and transfer to a clean reaction tube.

Table 9. Volumes of samples and dialysis buffer

ROTI®Elution Tubes	Recommended sample volume	Recommended volume of dialysis buffer
MINI	10 - 250 µl	25 - 250 ml
MIDI	50 - 800 µl	80 - 800 ml
MAXI with long cap	0.1 - 2 ml	0.2 - 2 L
MAXI with short cap	2 - 3 ml	0.3 - 3 L
MEGA with long cap	3 -10 ml	1 - 10 L
MEGA with middle cap	10 - 15 ml	1.5 - 15 L
MEGA with short cap	15 - 20 ml	2 - 20 L

Subsequent: Sample concentration by evaporation

1. Pipet a sample into a ROTI®Elution Tubes or use an already dialyzed sample. Fix the tube to a suitable microtube rack stand.

2. Let your sample evaporate on the bench top. By using a fan one can increase airflow across the membrane, which will speed up the process. Make sure to check every 10 mins. or less to prevent evaporation to dryness.

Note: When concentrating a sample by evaporation, small molecules (buffer salts, reducing agents, etc.) will also be concentrated because no diffusion occurs.

4.4 Short protocols

Step	done
1. Elution of DNA/RNA or proteins	
Wash the tubes	
Excise gel slice and trim away excess gel	
Remove water from the tube and transfer the gel slice into the tube	
Fill tube with fresh running buffer to top of membranes	
Clip tube into Supporting Tray and place this into an electrophoresis unit filled with buffer. Membranes must be positioned perpendicular to the electric field.	
Apply electric current	
Reverse polarity of electric current for 2 mins	
Gently open the tube and pipet eluate up and down at least 5 times on the inner side of the membrane	
Transfer eluate to a clean reaction tube	
Centrifuge for 1 min at maximum speed	
Transfer supernatant to clean reaction tube	
Concentrate eluted nucleic acid or proteins using standard protocols	

2. Dialysis and desalting	
Wash the tubes	
Add sample and close the tube	
Place Tube in a floating rack of an equivalent stand	
Place rack in a beaker containing 100- to 1000-fold sample vol. of desired dialysis buffer	
Let dialysis / desalting proceed under slow stirring. Change dialysis buffer every one or two hours.	
Optionally: Concentrate your sample by evaporation	
Remove sample from elution tube and transfer to a clean reaction tube	
Optionally: Concentrate eluted nucleic acid or proteins using standard protocols	

5. Trouble Shooting

Symptom	Possible Cause	Comments and Suggestion
Low yield	Insufficient elution time	Increase elution time. Increase applied voltage.
	Polarity of current was not reversed after elution	Reverse polarity of current for 2 mins.
	ROTI®Elution Tube not fully immersed in buffer of electrophoresis tank	Fully immerse ROTI®Elution Tube in buffer of electrophoresis tank, using supporting tray.
	Gel slice not fully immersed in buffer inside ROTI®Elution Tube, or air bubbles are present	After inserting gel slice into ROTI®Elution Tube, add running buffer or deionised water to top of the membranes. Make sure no air bubbles are present in the tube.
	More than recommended gel volume inserted in ROTI®Elution Tube	Do not fold or cut large gel slices, putting all pieces into one ROTI®Elution Tube. Use bigger ROTI®Elution Tubes for elution from large gel slices or, if cutting is required, use multiple tubes.
	ROTI®Elution Tube oriented incorrectly, electric current does not pass through tube/membranes	The two membranes of the ROTI®Elution Tube must be perpendicular to the electric field.
Long elution time	Low applied voltage	Increase applied voltage
	Gel slice not fully immersed in buffer inside ROTI®Elution Tube, or air bubbles are present	After inserting gel slice into ROTI®Elution Tube, add running buffer or deionised water to top of the membranes. Make sure no air bubbles are present in the tube.
	ROTI®Elution Tube not fully immersed in buffer of electrophoresis tank	Fully immerse ROTI®Elution Tube in buffer of electrophoresis tank, using supporting tray.
Volume of solution reduced after elution	Membrane was dry when sample was added	Wet membrane for 5 min with deionized water before adding sample.
	Pinhole in membrane	Use new ROTI®Elution Tube. Check tubes for leaking prior to elution (see ‘Before start, be sure to ...’).

ROTI®Elution Tubes

9281.1/.2/.3	ROTI®Elution tubes MINI	2 /30 /100 units
9283.1/.2/.3	ROTI®Elution tubes MINI	2 / 30/ 100 units
9284.1/.2	ROTI®Elution tubes MINI	1 / 5 units
9263.1/.2	ROTI®Elution tubes MIDI	1 / 5 units
9266.1/.2/.3	ROTI®Elution tubes MIDI	2 / 30 / 100 units
9294.1/.2	ROTI®Elution tubes MIDI	2 / 30 / 100 units
9421.1/.2/.3	ROTI®Elution tubes MAXI	2 / 30 / 100 units
9425.1/.2/.3	ROTI®Elution tubes MAXI	2 / 30 / 100 units
9427.1/.2/.3	ROTI®Elution tubes MAXI	2 / 30 / 100 units
9428.1/.2	ROTI®Elution tubes MAXI	1 / 5
9489.1/.2/.3	ROTI®Elution tubes MAXI	1 / 5 / 30
9371.1/.2	ROTI®Elution tubes MEGA 10 ml	1 / 10
9380.1/.2	ROTI®Elution tubes MEGA 15 ml	1 / 10
9381.1/.2	ROTI®Elution tubes MEGA 20 ml	1 / 10
9390.1/.2	ROTI®Elution tubes MEGA 10 ml	1 / 10
9393.1/.2	ROTI®Elution tubes MEGA 15 ml	1 / 10
9394.1/.2	ROTI®Elution tubes MEGA 20 ml	1 / 10
9396.1/.2	ROTI®Elution tubes MEGA 10 ml	1 / 10
9397.1/.2	ROTI®Elution tubes MEGA 15 ml	1 / 10
9398.1/.2	ROTI®Elution tubes MEGA 20 ml	1 / 10
9626.1	ROTI®Elution Tube Tray MINI	1
9627.1	ROTI®Elution Tube Tray MIDI	1
9628.1	ROTI®Elution Tube Tray MAXI	1

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