

TaqMan® miRNA ABC Purification Kit



Green Benefits

- Fewer hazardous materials
- Less hazardous waste disposal
- Fewer plastic consumables
- Less plastic waste disposal

Introduction

Life Technologies is committed to designing our products with the environment in mind—it's one more step toward a smaller footprint. This fact sheet provides the rationale behind the environmental claims that use of this product results in reduced exposure to hazardous material and generates less waste than comparable products. Using the TaqMan® miRNA ABC Purification Kit (anti-miRNA bead capture) eliminates the need for hazardous solvents and requires far fewer plastic consumables from sample preparation to final analysis.

Product Description

The TaqMan® miRNA ABC Purification Kit contains buffers and magnetic beads for single-tube isolation of specific microRNA (miRNA) from small inputs of all human sample types, including blood, serum, plasma, formalin-fixed paraffin-embedded (FFPE) samples, solid tissues, cultured cells, and saliva in 75 minutes.

Design-for-Environment Features

Less Hazardous

Traditional RNA extraction protocols require clean-up with the use of hazardous reagents such as:

- Ethanol— highly flammable, causes systemic toxicity

- Phenol:Chloroform Solutions— toxic through inhalation, ingestion, and when absorbed through the skin; corrosive; suspected carcinogen
- Mercaptoethanol— may be fatal when absorbed through the skin
- Trizol®— toxic, corrosive, suspected mutagen

Using the TaqMan® miRNA ABC Purification Kit eliminates the need to use any of the hazardous solvents mentioned above.

Please review the MSDS for the TaqMan® miRNA ABC Purification Kit by clicking [here](#).

Less Waste

Traditional RNA extraction methodologies require multiple steps for RNA extraction and clean-up—requiring the use of multiple disposable tubes, vials, pipettes, and pipette tips. The TaqMan® miRNA ABC Purification Kit requires fewer plastic consumables than traditional technologies and generates less hazardous waste. A comparison to traditional RNA extraction methodology showed that the traditional methodology generated 139.54 g of plastic waste (tubes, pipettes, pipette tips) as compared to 55.74 g from the TaqMan® miRNA ABC Purification Kit (Table 1).

Table 1. Comparison of the amount of waste generated using traditional RNA extraction methods compared to TaqMan® miRNA ABC Purification Kit

Traditional Blood RNA Extraction Methods					TaqMan® miRNA ABC Purification Kit				
Step in procedure	Plastic description	# Used	Piece weight (g)	Total mass (g)	Step in procedure	Plastic description	# Used	Piece weight (g)	Total mass (g)
Add 100% ethanol to RPE	50 ml pipet	1	20.75	20.75	Add Lysis buffer	10ml pipette	1	9.12	9.12
Add	1 ml tip	1	0.85	0.85	Add 100% Ethanol	10ml pipette	1	9.12	9.12
Tube for hazardous waste	50 ml tube	1	12.54	12.54	Add Lysis Buffer/ ABC Buffer	0.2ml tip	10	0.28	2.8
Add 350 µl RLT	1ml tip	10	0.85	8.5	Add beads to LoBind Tube and remove supernatant	0.2ml tip	10	0.28	2.8
Add 70% Ethanol	1 ml tip	10	0.85	8.5	Hybridization tube	1.5ml tube	10	1.0	10.0
Add 500µl RPE	1 ml tip	10	0.85	8.5					
Add 2nd 500µl RPE aliquot	1 ml	10	0.85	8.5	Hybridization Waste (non hazardous)	150µL	10	0.15	1.5
Sample Tubes	1.5 ml conical tube	10	1.0	10.0	Add Wash Buffer 1 & remove	0.2ml tip	10	0.28	2.8
Add water	0.2ml tip	10	0.28	2.8	Wash Buffer 1 waste (non-hazardous)	0.1ml	10	0.1	1.0
Add 2nd water wash	0.2ml tip	10	0.28	2.8	Add Wash Buffer 2 & remove	0.2ml tip	10	0.28	2.8
gDNA eliminator	Column, tube	10	1.65	16.5	Wash Buffer 2 waste (Non-hazardous)	0.1ml	10	0.1	1.0
Spin Columns	Column, tube	10	2.93	29.3					
Collection tube	2ml tube	10	1.0	10.0	Add Elution Buffer	0.2ml tip	10	0.28	2.8
Total	139.54				Tube for miRNA eluate	1.5 ml conical tube	10	1	10.0
					Total	55.74			
					Waste Reduction	60%			

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