

# mi-DNA / RNA Precipitator

Cat. No mi-DRP200  
[200 Preparations]

This kit is for research purposes only.  
Not for use in diagnostic procedures.  
For in vitro use only.

don't risk your experiment. trust ... **metabion**

## Introduction

mi-DNA/RNA Precipitator, a neutral polyacrylamide polymer solution, is a very efficient carrier for the precipitation of a very small quantity of nucleic acids with ethanol.

High recovery! It is possible to recover nucleic acids quantitatively from the solution of which the concentration is more than 20 ng/ml of DNA (>100 bp) or RNA (>120 bp).

Time saving! An incubation at -20°C or -80°C is not required. Immediate centrifugation after the addition of ethanol is possible.

No inhibition! The precipitate obtained using mi-DNA/RNA Precipitator is readily solved in a buffer appropriate to subsequent applications. mi-DNA/RNA Precipitator does not inhibit any enzyme reactions.

Visible! When ethanol is added, mi-DNA/RNA Precipitator forms visible pellets by itself. It is easy to handle even if the nucleic acid quantity is very small.

## Kit Contents

Sodium acetate (3M)  
DNA / RNA Precipitator

## mi-DNA / RNA Precipitator

1 ml  
0.2 ml (store at 4°C)

## Required Equipment

Microcentrifuge (13,000 rpm or 12,000 x g)  
Vortexer  
Microcentrifuge tubes  
Ethanol (99,9%)  
Ethanol (70%), diluted in distilled water  
Distilled water (pH 7-8) or TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0)

## Kit Storage

At 4°C for 6 month.

## Precautions

See MSDS on our homepage ([www.mymetabion.com](http://www.mymetabion.com)).

## Protocol

1. Add 3.3  $\mu$ l of 3M sodium acetate to 100  $\mu$ l of the DNA or RNA solution.  
(The final concentration should be more than 0.1M).
2. Add 1  $\mu$ l of mi-DNA/RNA Precipitator.  
It is recommended to add 1  $\mu$ l of mi-DNA/RNA Precipitator per 100  $\mu$ l of solution. It is not necessary to add more mi-DNA/RNA Precipitator to the solution once recovered with mi-DNA/RNA Precipitator.  
If the volume of the DNA or RNA solution is more than 300  $\mu$ l, it is enough to add 3  $\mu$ l.
3. Vortex. Additional vortexing is required when the concentration is very low.
4. Add 200-250  $\mu$ l of ethanol (99,9%, not included).
5. Vortex.
6. Spin at 13,000 rpm (12,000 x g) for 5 min.  
Cooling is not required during the centrifugation.
7. The precipitated pellet will be visible.  
If necessary, wash the pellet with 70% ethanol, spin again and remove the supernatant.
8. Dry the pellet and solve it in either distilled water or TE buffer.

## Hints and Troubleshooting

What is mi-DNA / RNA Precipitator?

mi-DNA / RNA Precipitator is a carrier solution for ethanol or isopropanol precipitation of DNA and RNA, which contains high molecular weight acrylamidic polymer.

Is it OK to use mi-DNA / RNA Precipitator for RNA precipitation?

We do not do QC for RNase. But mi-DNA / RNA Precipitator can be used for RNA isolation.

Which length and concentration of DNA and RNA are recovered?

It is possible to recover almost all DNA (> 100 base pairs) and RNA (> 120 bases). If the concentration of nucleotide is less than 20 ng/ml, the efficiency may be lower.

Does using absorbance at 260 nm bring any effect on the quantification of nucleotides?

No.

My DNA solution is less than 100  $\mu$ l. How much mi-DNA / RNA Precipitator should I use?

Add 1  $\mu$ l of mi-DNA / RNA Precipitator. Making DNA pellet visible requires 1  $\mu$ l of mi-DNA / RNA Precipitator.

In contrast, calculate the amount of 3 M sodium acetate to add into your DNA solution based on it's volume (e.g. for 50  $\mu$ l of DNA solution, add 1  $\mu$ l of mi-DNA / RNA Precipitator and 1.7  $\mu$ l of 3M sodium acetate).

My DNA solution is more than 300  $\mu$ l. How much mi-DNA / RNA Precipitator should I use?

Add 3  $\mu$ l of mi-DNA / RNA Precipitator. There is no need to add more mi-DNA / RNA Precipitator. In contrast, calculate the amount of 3 mol/l sodium acetate to add into your DNA solution based on it's volume (e.g. for 600  $\mu$ l of DNA solution, add 3  $\mu$ l of mi-DNA / RNA Precipitator and 19.8  $\mu$ l (3.3  $\mu$ l x 6) of 3 M sodium acetate.

I want to perform the ethanol precipitation twice or more. Should I add mi-DNA / RNA Precipitator for each precipitation?

No. Once you add mi-DNA / RNA Precipitator into the DNA solution, there is no need to add mi-DNA / RNA Precipitator again. Multiple additions of mi-DNA / RNA Precipitator may make the solution viscous so that consequent manipulation would be difficult.

Does freezing affect the quality of mi-DNA / RNA Precipitator?

No.

Does phenol / chloroform treatment of DNA solution containing mi-DNA / RNA Precipitator affect the quality of mi-DNA / RNA Precipitator?

No.

Does mi-DNA / RNA Precipitator affect the band pattern of gel electrophoresis?  
Basically no. In some cases, bands with the size of larger than some 10 kb may get broad.

Does mi-DNA / RNA Precipitator affect digestion using restriction enzymes?  
No.

Does mi-DNA / RNA Precipitator affect the ligation using T4 DNA ligase?  
No.

Does mi-DNA / RNA Precipitator affect the cDNA synthesis using AMV reverse transcriptase?  
No.

Does mi-DNA / RNA Precipitator affect PCR using Taq DNA polymerase?  
No.

Does mi-DNA / RNA Precipitator affect reaction of Klenow Fragment?  
No.

Does mi-DNA / RNA Precipitator affect transformation of E.coli?  
No. It does not affect electroporation either.

Does mi-DNA / RNA Precipitator affect in vitro packaging?  
It does decrease the efficiency of lambda packaging a little.

Does ethanol precipitation with mi-DNA / RNA Precipitator precipitate mononucleotides?  
An experiment using 8 and 17 base oligos did not show significant difference between presence of absence of mi-DNA / RNA Precipitator. See example 5.

Does mi-DNA / RNA Precipitator get denatured in the hybridization solution containing formamide?  
No.

Does mi-DNA / RNA Precipitator affect blotting?  
No.

Does mi-DNA / RNA Precipitator affect sequencing?  
It does not affect cycle sequencing with ABI Prism 377 or sequencing by the dideoxy method.