For life science research only.
Not for use in diagnostic procedures.

# RNase, DNase-free, High Concentration
## from bovine pancreas

**Version: 08**
Content Version: November 2021

**Cat. No. 11 579 681 001** 1 mg
10 mg/ml

**Store the product at −15 to −25°C.**

# 1. General Information

## 1.1. Contents

| Vial / bottle | Label | Function / description | Content |
|---|---|---|---|
| 1 | RNase, DNase-free, high concentration | ▪ Solution in 10 mM Tris-HCl, 5 mM $CaCl_2$, 50% glycerol, pH 7.0.<br>▪ Heterogeneous mixture of ribonucleases, DNase-free. | 1 vial, 1 mg (100 µl) |

## 1.2. Storage and Stability

### Storage Conditions (Product)

When stored at −15 to −25°C, the product is stable through the expiry date printed on the label.

| Vial / bottle | Label | Storage |
|---|---|---|
| 1 | RNase, DNase-free, high concentration | Store at −15 to −25°C. |

## 1.3. Additional Equipment and Reagent required

**For isolation of genomic DNA**

- SDS*
- Tris-HCl*
- EDTA
- Proteinase K*
- NaCl
- Phenol/chloroform
- Ethanol

## 1.4. Application

Use RNase, DNase-free in DNA isolation procedures.

- No boiling to remove DNases or other pretreatment is necessary.
- This high-concentration enzyme is particularly useful in the isolation of genomic DNA.

# 2. How to Use this Product

## 2.1. Protocols

### Isolation of genomic DNA

High-concentration RNase, DNase-free, can be used in the isolation of genomic DNA. Use the following protocol as a starting point. Optimize this protocol, for example, by changing the concentration of RNase, DNase-free or incubation times for different cell types.

1. Trypsinize, harvest, and resuspend cells at a concentration of 1 to 2 × $10^7$/ml of 10 mM Tris-HCl*, pH 8.0, 10 mM EDTA.
2. Add sodium dodecyl sulfate (SDS)* to a final concentration of 0.5% and Proteinase K* to a final concentration of 200 µg/ml.
3. Vortex and incubate at +55°C for at least 2 hours.
4. Add NaCl to a final concentration of 0.2 M.
5. Extract twice with equilibrated phenol/chloroform (mixed 1:1) and once with chloroform.
6. Place the tube, with its top off, in a water bath at +55°C for 1 hour to evaporate the chloroform.
7. Add RNase, DNase-free, to a final concentration of 50 µg/ml and incubate at +37°C for 1 hour.
8. Extract once with equilibrated phenol/chloroform (mixed 1:1), and once with chloroform.
9. Precipitate the DNA with 1.5 volumes of ethanol.
10. Centrifuge the tube at 10,000 x *g* to pellet the DNA.
11. Resuspend the pellet in 10 mM Tris-HCl, pH 8.0, 1 mM EDTA.

### Isolation of plasmid DNA

High-concentration RNase, DNase-free, can also be used in isolation of plasmid DNA. The optimal working concentration for RNase, DNase-free is 2 to 5 µg/ml.

## 2.2. Parameters

## Specific Activity

≥30 units/mg dry powder with one Kunitz unit (+25°C, RNA as substrate) being the amount of enzyme that causes a decrease in absorbance of $A_0$ to $A_1$ within 1 minute under assay conditions. $A_0$ to $A_1$ corresponds to the total conversion. $A_1$ being the final absorbance.

## Working Concentration

Isolation of genomic DNA: 50 µg/ml
Isolation of plasmid DNA: 2 to 5 µg/ml

# 3. Additional Information on this Product

## 3.1. Test Principle

### Preparation

RNase, DNase-free, is isolated from bovine pancreas and purified by column chromatography.

### Absence of DNase activity

RNase, DNase-free (1mg/ml) is incubated with 1 µg of pUC19 DNA at +37°C for 6 hours in 20 µl of restriction enzyme buffer. The DNA is analyzed by agarose-gel electrophoresis and ethidium-bromide staining; no increase in the amount of linear or relaxed circular DNA is seen.

## 3.2. Quality Control

For lot-specific certificates of analysis, see section, **Contact and Support**.

# 4. Supplementary Information

## 4.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

| **Text convention and symbols** | |
|---|---|
| *Information Note: Additional information about the current topic or procedure.* | |
| **Important Note: Information critical to the success of the current procedure or use of the product.** | |
| ① ② ③ etc. | Stages in a process that usually occur in the order listed. |
| ❶ ❷ ❸ etc. | Steps in a procedure that must be performed in the order listed. |
| * (Asterisk) | The Asterisk denotes a product available from Roche Diagnostics. |

## 4.2. Changes to previous version

Layout changes.
Editorial changes.

## 4.3. Ordering Information

| Product | Pack Size | Cat. No. |
|---|---|---|
| Reagents, kits | | |
| Sodium Dodecyl Sulfate (SDS) | 1 kg | 11 667 289 001 |
| Tris hydrochloride | 500 g | 10 812 846 001 |
| Proteinase K, recombinant, PCR Grade | 1.25 ml, > 50 U/ml | 03 115 887 001 |
| | 5 ml, > 50 U/ml | 03 115 828 001 |
| | 25 ml, > 50 U/ml | 03 115 844 001 |

## 4.4. Trademarks

All product names and trademarks are the property of their respective owners.

## 4.5. License Disclaimer

For patent license limitations for individual products please refer to:
**List of biochemical reagent products**.

## 4.6. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

## 4.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

## 4.8. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site**.

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

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