PanReac AppliChem
ITW Reagents

RNase-ExitusPlus™

RNase decontamination solution
Product code A7153

New Formulation!
Higher Activity!
Little Color Development

Note: New Formulation! (as of October 2009)

The main aim of further developing the formulations of the ExitusPlus™ products was the reduction of color development during aging of the stock solutions and drying of the reagents on surfaces. The new recipe contains significantly less indicator and a low concentration of alcohol. During the testing, we noted that alcohol improved the access of the reagent components to the surface and therefore significantly improved activity. **There are no changes in the application protocol of RNase-ExitusPlus™!**

RNase-ExitusPlus™ is a non-alkaline, non-corrosive and non-carcinogenic cleansing solution that is highly active against RNase contamination. RNase-ExitusPlus™ has been demonstrated to inactivate more than 20 µg of RNase A dried onto the bottom of a microcentrifuge tube. RNase-ExitusPlus™ is stable for approximately 12 months and heat resistant.

These are the new and unique characteristics of **RNase-ExitusPlus™**:

1.) Catalytic and cooperative effects of the components cause a very rapid inactivation of protein and RNase molecules.
2.) All components of **RNase-ExitusPlus™** are readily biologically degradable and not harmful or toxic for humans.
3.) No aggressive mineralic acids or alkaline substances are used. Equipment and materials are not damaged or corroded even after prolonged incubation times.
4.) No toxic fumes. The reagent contains a low volume of alcohol only.
5.) Elevated temperatures above approx. 50°C speed up the reaction and the efficiency / activity!

RNase-ExitusPlus™ is *ready-to-use* for eliminating RNase from any surface including the interior of microcentrifuge tubes. By following the simple decontamination instructions below, RNase is completely inactivated and removed. RNase-ExitusPlus™ should be stored at room temperature; at colder temperatures a precipitate may form which is easily brought into solution at 37°C.

Instructions for use

1.) The optimal incubation time for the decontamination of surfaces is 10 minutes and a temperature > 20°C.
For full decontamination of surfaces, it is sufficient to wipe off RNase-ExitusPlus™ before it is completely dried up (after 10 to 15 minutes). It is not necessary to additionally clean with sterile water thereafter. This is a new feature in comparison to the traditional decontamination solutions.
2.) After the solution is completely dried, there is no further decontamination reaction taking place. Hence, an incubation time longer than 30 minutes is not necessary and also not useful. In case of severe contaminations a second application of the solution is recommended for highest efficiency.
3.) For removal of unwanted, dried residual traces of the reagent, we recommend to remove these traces with sterile water or 10X TE buffer and a paper towel.

Detailed instructions

To decontaminate laboratory surfaces: Apply RNase-ExitusPlus™ directly to the lab surface. Wipe thoroughly with a paper towel, rinse with water and dry with a clean paper towel.

To decontaminate laboratory apparatus: Generously apply RNase-ExitusPlus™ to a paper towel and wipe all exposed surfaces of the apparatus thoroughly. Rinse with water and dry with a clean paper towel. To clean small parts, briefly soak them in RNase-ExitusPlus™, rinse with water and dry.

To decontaminate plastic and glass vessels: Add ample RNase-ExitusPlus™ to enable coating the entire surface of the vessel by swirling or vortexing. Discard the solution and rinse vessels thoroughly two times with distilled water.

To decontaminate pipettors: Following manufacturers instructions; remove the shaft from the pipettor and remove seals and gaskets from the shaft. Soak the shaft for one minute in RNase-ExitusPlus™, rinse the shaft thoroughly with water, let dry and reassemble.

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Quality control

Aliqouts of RNase A (10 µg) were dried down in reaction tubes for samples 1, 3 and 4 (**Fig. 1**). Afterwards, RNase A samples were treated with 1 ml RNase-ExitusPlus™ (1) or H_2O (3, 4) for 5 minutes at RT. Two washing steps with 1 ml of sterile water followed. Then 5 µg total RNA from *E. coli* were added into each tube. Into tube 4 a fresh aliquot of 10 µg RNase A was added. All tubes were incubated for 30 min. at 37°C. Finally, loading buffer was added and samples were loaded onto a 1% agarose gel. As a contol 5 µg untreated total *E. coli* RNA (C) were included.

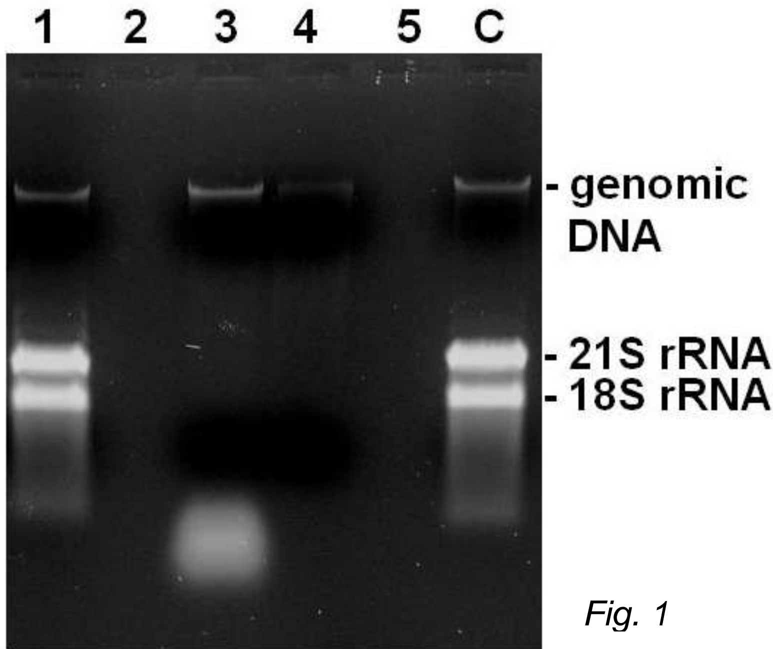

Fig. 1

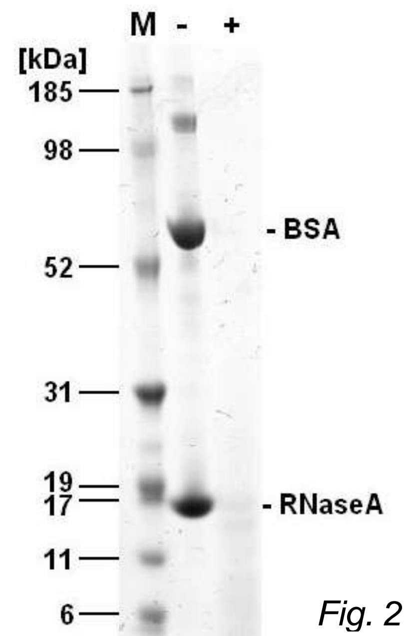

Fig. 2

Fig. 2. Analysis of autoclaved proteins without (-) and with (+) the addition of RNase-ExitusPlus™. Test solutions of 10 mM Tris, pH 8.0 with BSA (bovine serum albumin) and RNase A were autoclaved at 120°C and 1.2 bar for 20 minutes after the addition of equal volumes of either sterile water (-) or RNase-ExitusPlus™ (+). Subsequently, aliquots of 10 µl with 1µg BSA or RNase A, respectively, were analysed on a 4-12 % polyacrylamide gel and stained with Coomassie Brilliant Blue. The sample containing sterile water (-) doesn't show a significant degradation of the proteins, while the addition of RNase-ExitusPlus™ (+) leads to an almost complete degradation.