Xpert Green DNA Stain

#GS01.0001 (1ml 20,000X) | GS01.3001 (3x 1ml 20,000x) | GS01s (trial size)
(FOR RESEARCH ONLY)

Product: Xpert Green DNA Stain is a new and safe alternative to ethidium bromide (EtBr) for the visualization of DNA (double-stranded and single-stranded DNA) and RNA in agarose and polyacrylamide gels. The dye has been developed for in-gel staining and is compatible with both UV and Blue LED transilluminators.

Quantity: #GS01.0001 consists of 1ml of ready-to-use Xpert Green DNA Stain at a 20.000x concentration. #GS01.3001 consists of 3x 1ml of ready-to-use Xpert Green DNA Stain at a 20.000x concentration, and #GS01s is a trial sample (50 µl). One ml is sufficient for 400 mini-gels (40-50ml each).

Properties: Xpert Green DNA Stain has 2 fluorescence excitation wavelengths in the UV range (~270nm; ~290nm) and one in the blue light range (~485nm). Maximum fluorescence emission is at ~525nm (green). Therefore, Xpert Green DNA Stain is compatible with a large variety of gel documentation systems. Yellow/orange or green filters should be used for photography.

Sensitivity: The detection limit of Xpert Green DNA Stain is in the range of 0.5-5.0 ng/band (depending on agarose type and percentage, thickness of the gel, electrophoresis buffer, transilluminator, photo camera quality and settings, etc). Band intensity can be improved by adding Xpert Green DNA Stain to the electrophoresis buffer, especially in case of small DNA fragments that migrate farther. Xpert Green DNA Stain can be used for post-staining, however, with less sensitivity.

Safety: Xpert Green DNA Stain is non-mutagenic as determined by the Ames-test. Moreover, genotoxicity analysis shows negative results for both the mouse marrow chromophilous erythrocyte micronucleus test and mouse spermatocyte chromosomal aberration test. The complete safety report can be found on the product page at our website. Xpert Green DNA Stain is non-hazardous; however, one should always exercise common safe laboratory practices. Use goggles and gloves as Xpert Green DNA Stain may cause skin or eye irritations.

Waste: Xpert Green DNA Stain is not classified as hazardous waste and some institutions have approved the disposal of gels and solutions containing Xpert Green DNA Stain directly into their wastewater systems. GRiSP recommends to dispose of Xpert Green DNA Stain as you would of any other non-carcinogenic fluorescent dye (like propidium iodide). Naturally, always dispose in accordance to all Federal, state, and local environmental regulations.

Storage: This product is stable for at least a few days at room temperature. Transport is carried out at room temperature. Upon arrival, product can be stored at +2ºC to +8ºC, protected from light, for at least 2 years. Do not freeze. Gently spin down before use.

Usage

Agarose Gels

1. Prepare agarose solution by mixing the desired amount of agarose and desired volume of electrophoresis buffer, and dissolving the agarose by heating.
2. Once the solution has become clear, remove from the microwave or heater, swirl gently, and allow the solution to cool down to ~60°C.
3. For each 100ml of agarose solution, add 5µl of Xpert Green DNA Stain. Mix gently by swirling. The solution should be devoid of air bubbles. Pour to cast the gel.
4. Run gel according to normal procedure. To improve sensitivity, add Xpert Green DNA Stain to the electrophoresis buffer (5µl per 100ml of buffer).
5. Visualize using either UV or Blue LED light.

Polyacrylamide Gels

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1. Prepare polyacrylamide solution by mixing all components except APS and TEMED.
2. Add 5µl of Xpert Green DNA Stain for each 100ml of polyacrylamide solution.
3. Add APS and TEMED, swirl gently, avoiding formation of air bubbles, and cast the gel.
4. Run gel according to normal procedure and visualize using either UV or Blue LED light.

Notes

Red Bands

Sometimes, bands appear reddish instead of green. When bound to RNA, Xpert Green DNA Stain may emit red light (635nm) instead of green light (525nm). This allows to distinguish between DNA and RNA, enabling the detection of DNA contamination in total RNA samples or undigested RNA in a cDNA preparation. However, this phenomenon is highly dependent on exact electrophoretic conditions and nucleic acid concentrations. Moreover, dsRNA and highly structured RNA often emit green fluorescence or a yellowish/orange mixture, whilst short ssDNA sometimes shows up reddish. Therefore, in practice, optimization in order to be able to use this phenomenon for the detection of contamination is cumbersome. Thus, when red bands do appear this is a strong indication that RNA is present, but the absence of red bands does not guarantee the absence of RNA.