7040 Virginia Manor Road
Beltsville, MD 20705, USA
Web: www.abpbio.com;
Email: info@abpbio.com

Product Information

NucGreen™ dead-cell nucleic acid stain

Catalog Number	Packaging Size
C013-2	1 mL

Storage upon receipt:
- -20°C
- Protect from light

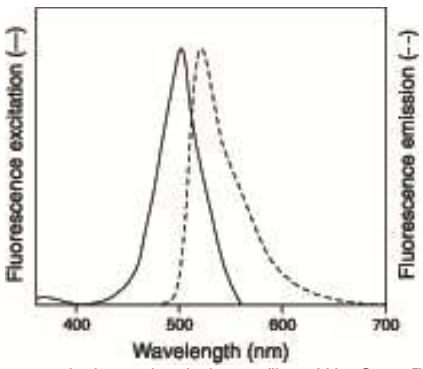
Ex/Em: 502/525 nm, bound to DNA

Product Description

NucGreen™ dead-cell nucleic acid stain is a high-affinity nucleic acid stain that easily penetrates cells with compromised plasma membranes and yet will not cross the membranes of live cells. It is particularly useful with both gram-positive and gram-negative bacteria, where an exceptionally bright signal is required. After brief incubation with NucGreen™ dead-cell nucleic acid stain, the nucleic acids of dead cells fluoresce bright green when excited with the 488 nm spectral line of the argon-ion laser, or any other 450–490 nm source. These properties, combined with its >500-fold fluorescence enhancement upon nucleic acid binding, make the NucGreen™ dead-cell nucleic acid stain a simple and quantitative single-step dead-cell indicator for use with fluorescence microscopes, fluorometers, fluorescence microplate readers, and flow cytometers.

This dead-cell stain may be used in conjunction with blue- and red-fluorescent surface labels for multiparameter analyses. The NucGreen™ dead-cell nucleic acid stain is also an excellent DNA counterstain for chromosome labeling and for fixed cells and tissues.

Spectral Characteristics



Fluorescence excitation and emission profiles of NucGreen™ dead-cell nucleic acid stain bound to dsDNA.

Experimental Guidelines

The following procedure can be adapted for any cell type. Note that different concentration ranges for the NucGreen™ dead-cell nucleic acid stain are suggested depending on the cell type (Table 1). Growth medium, cell density, the presence of other cell types, and other factors may influence staining. In general, the best results are obtained in buffers that do not contain phosphate. Residual detergent on glassware may also affect real or apparent staining of many organisms, causing brightly stained material to appear in solutions with or without cells present. Be sure to wash glassware in a mild detergent and rinse thoroughly with hot tap water followed by several rinses with deionized, distilled water.

Pellet cells by centrifugation and resuspend in buffered salt solution or water. The binding of NucGreen™ dead-cell nucleic acid stain may be reduced somewhat in solutions containing very high concentrations of monovalent or divalent cations. Adherent cells such as mammalian tissue cells may be stained *in situ* on coverslips. Add NucGreen™ dead-cell nucleic acid stain using the concentrations listed in Table 1 as a guide. In initial experiments, it may be best to try several dye concentrations over the entire suggested range to determine the concentration that yields optimal staining.

Cells stained with NucGreen™ dead-cell nucleic acid stain can be viewed with a fluorescence microscope equipped with a standard fluorescein filter set. Stained eukaryotic cells will generally have bright green nuclei as well as some low-level cytoplasmic staining. Bacteria generally stain uniformly once the intracellular dye is at equilibrium with the staining solution. Allow 5 minutes or more for staining of bacteria or eukaryotic cells to reach completion.

Table 1. Recommended conditions for staining cells with the NucGreen™ dead-cell nucleic acid stain.

Cell Type	Dye Concentration	Incubation Conditions
Bacteria	0.5–5 µM	Incubate for >5 minutes.
Yeast	1–50 µM	Incubate for >10 minutes
Eukaryotes	10 nM–1 µM	Incubate for >10 minutes