

HealthTrace™ Dye as Loading Buffer, 6x



For research use only

Catalogue Number

HTLD001s, HTLD001, HTLD005

Introduction

HealthTrace™ Dye as Loading Buffer, 6x is an eco-friendly DNA visualization dye designed to replace the use of hazardous ethidium bromide in DNA gels and running buffer. Packaged as Geneaid DNA Loading Dye (6X), this non-toxic and non-mutagenic dye features two tracking dyes migrating at 4,000 bp and 400 bp. DNA samples, when mixed with HealthTrace™ Dye as Loading Buffer, can be seamlessly applied to both agarose and polyacrylamide gels.

Upon application, HealthTrace™ Dye swiftly forms a complex with the DNA, co-migrating during electrophoresis. Emitting green fluorescence upon binding to DNA, immediate visualization of samples is facilitated post-electrophoresis using standard UV or blue light illumination for gel documentation. There is no requirement for subsequent post-staining or destaining procedures. The sensitivity of HealthTrace™ staining mirrors that achieved with ethidium bromide, ensuring reliable and comparable results. Serving as a substitute for ethidium bromide, HealthTrace™ Dye reduces hazardous exposure for laboratory personnel and the environment. In addition, there is no hazardous shipping, handling or disposal required.

Components

	HTLD001s	HTLD001	HTLD005
HealthTrace™ Dye as Loading Buffer, 6x	100 µl	1 ml	1 ml x 5

Storage

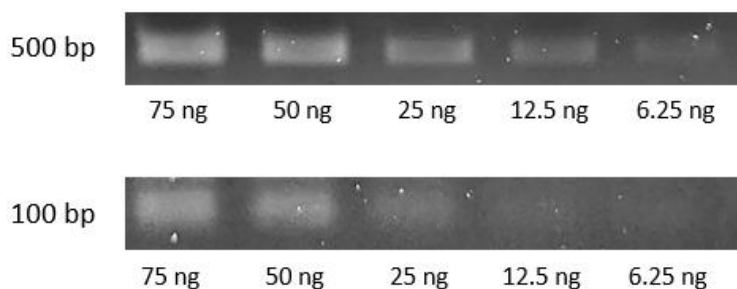
The HealthTrace™ Dye as Loading Buffer, 6x is shipped at room temperature and can be stored dry at 2°C to 8°C, protected from light for up to 12 months.

Spectral Information

- **Excitation:** 268, 491 nm.
- **Emission:** 530 nm.

Sensitivity

- HealthTrace™ Dye as Loading Buffer, 6x can detect 6 ng of DNA for a fragment that is 500 bp and 12 ng DNA for a 100 bp fragment.



Prepare DNA samples in HealthTrace™ Dye as Loading Buffer, 6x

- Vortex HealthTrace™ Dye as Loading Buffer, 6x for 10 seconds prior to use.
- Dilute 1x volume of HealthTrace™ Dye as Loading Buffer, 6x with 5x volume of DNA sample, mix well by pipetting.

Note: HealthTrace™ Dye as Loading Buffer, 6x should be incorporated into DNA ladders to facilitate the simultaneous visualization of ladder bands alongside the sample following electrophoresis.

- Load the samples on an agarose or polyacrylamide gel and perform electrophoresis according to standard procedure.

Note: DNA fragments treated with HealthTrace™ Dye as Loading Buffer, 6x encounter no hindrance and migrate at a pace comparable to unstained DNA until the completion of electrophoresis.

- Following the electrophoresis procedure, position the gel onto a UV or blue light transilluminator for the prompt visualization of DNA bands, characterized by a green fluorescence against a dark background.

Note: If required, the gel can be securely wrapped in plastic wrap and refrigerated, allowing the fluorescence to remain detectable for a minimum of 24 hours post-electrophoresis (provided that the gel has not undergone photobleaching due to prior UV exposure).

Downstream applications

- Recovery from gel slices: The HealthTrace™ Dye does not interfere with recovery of DNA fragments from agarose gels. DNA fragments can be purified using commercial kits such as Geneaid GenepHlow™ Gel/PCR Kit.
- After DNA purification from gels, DNA stained with the HealthTrace™ Dye is compatible with standard downstream applications including restriction digestions, ligation reactions, transformation procedures, PCR amplification and DNA sequencing.

Troubleshooting

DNA not detected on the gel



The HealthTrace™ Dye as Loading Buffer, 6x was not added to the sample.

- Add 1x volume of HealthTrace™ Dye as Loading Buffer, 6x to 5x volume of DNA sample and mix well.

The incorrect filter was used to capture the gel image.

- A SYBR Green filter is optimal (500 - 600 nm), although an ethidium bromide filter (550 - 640 nm) may also be used with a slight reduction in sensitivity.

Insufficient DNA was loaded on the gel.

- Load at least 50 ng of DNA per lane is suggested.

Gel running conditions were not optimized.

- For optimal results, it is recommended to run the gel at 8 V/cm for 20-30 minutes. Prolonged run-times may lead to the dissociation of HealthTrace™ Dye from DNA.