



**SMOBIO**

Small Bio, Smart Tool

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## Product Information

### FluoroDye DNA Fluorescent Loading Dye

**DL5000**      1 ml × 1 (Green, 6X)

**DL5001**      1 ml × 5 (Green, 6X)

## Storage

Protected from light

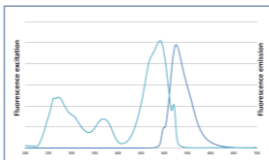
-20°C      ≥ 24 months

## Working Reagent Preparation

1:6 dilution in DNA electrophoresis sample.

## Description

The FluoroDye DNA Fluorescent Loading Dye is a ready to use 6× DNA loading dye designed for fast qualitative electrophoresis analysis. Containing sensitive fluorescent dye with high specific affinity towards double stranded DNA (dsDNA), the FluoroDye Fluorescent DNA Loading Dye has negligible background and renders destaining process unnecessary. The FluoroDye DNA Fluorescent Loading Dye allows the user to immediately visualise electrophoresis result upon completion or to monitor the electrophoresis in real-time. FluoroDye DNA Fluorescent Loading Dye is compatible with both ultra violet gel-illuminating system and the less harmful long wave length blue light illumination system (B-Box™). FluoroDye emission as bound to dsDNA is 522 nm, while its excitation peaks are at 270, 370 and 497 nm (Fig. 1).



**Fig. 1.**

The FluoroDye DNA Fluorescent Loading Dye is capable of detecting dsDNA fragments down to 0.3 ng in electrophoresis analysis (Fig. 2).

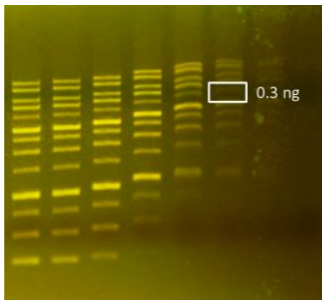


Fig.2. Use of FluoroDye Fluorescent DNA Loading Dye for loading and detecting DNA markers (SMOBiO DM3100) in 2× serial dilution

## Contents

FluoroDye Fluorescent DNA Loading Dye is stored in 6X concentration in 60% glycerol and buffered with Tris-HCl and EDTA, containing Bromophenol blue, Xylene cyanol FF and Orange G as tracking dyes.

## Cautions

Dispose of the stain in compliance with local regulations.

There is no data that address the mutagenicity or toxicity of the fluorescent dye in humans. However, the fluorescent dye binds to nucleic acids, thus it should be recognized as a potential mutagen and used with appropriate care.

It's noted that binding of the fluorescence dye with double strain DNA affects the ionic charge of the DNA, thus distorting the migration pattern during electrophoresis (Fig. 3.).

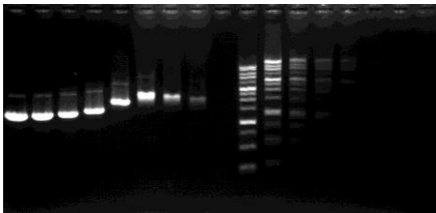


Fig. 3. Distortion of DNA migration due to counter migration of different DNA/FluoroDye DNA Fluorescent Loading Dye ratio.

We suggest a brief incubation time (1~2 minutes) for proper interaction between dye and DNA sample. For precise visualization of DNA migration pattern, we strongly recommend post electrophoresis staining methods using fluorescent dye such as the SMOBiO's ExcelStain DNA Fluorescent Staining Dye (DS1000). Excessive difference in DNA/fluorescence dye can result in visible difference in migration distance of identical DNA molecule.

## **Quality Control**

The product must show 3 reference dyes separated (Xylene Cyanol FF, Bromophenol blue and Orange G) by electrophoresis on a 1.5% agarose gel with 0.5x TAE buffer.

The product must be sufficiently dense when diluted 6 times with aqueous solution in 1x TAE buffer and 1x TBE buffer.

As combined with use of DL5000 in standard protocol, all bands of 1  $\mu$ l DM3100 must be visible when separated on a 1% agarose gel with 0.5x TAE buffer under B-Box 470 nm blue light illumination.

## **Other information**

SMOBiO, Inc. claims all warranties with respect to this document, expressed or implied, including but not limited to those of merchantability or fitness for a particular purpose. In no event shall SMOBiO, Inc. be liable, whether in contract, tort, warranty, or under any statute or any other basis for special, incidental, indirect, punitive, multiple or consequential damages in connection with or arising from this document, including but not limited to the use thereof.

Caution: Not intended for human or animal diagnostic or therapeutic uses.

## Related Products

- DS1000 FluoroStain DNA Fluorescent Staining Dye (Green, 10,000X), 500  $\mu$ l
- DS1001 FluoroStain DNA Fluorescent Staining Dye (Green, 10,000X), 500  $\mu$ l x 5
- DL1000 ExcelDye DNA Loading Dye, Orange, 10 ml
- DL2000 ExcelDye DNA Loading Dye, Green, 10 ml
- DL3000 ExcelDye DNA Loading Dye, Blue, 10 ml
- DL4000 ExcelDye DNA Loading Dye, Tri-color, 10 ml
- DM1160 FluoroBand 50 bp Fluorescent DNA Ladder, 500  $\mu$ l
- DM2160 FluoroBand 100bp Fluorescent DNA Ladder, 500  $\mu$ l
- DM2360 FluoroBand 100bp+3K DNA Fluorescent DNA Ladder, 500  $\mu$ l
- DM3260 FluoroBand 1KB Plus (0.1-10kb) Fluorescent DNA Ladder, 500  $\mu$ l
- DM3100 ExcelBand 1KB (0.25-10kb) DNA Ladder, 500  $\mu$ l
- DM4160 FluoroBand XL 25kb Fluorescent DNA Ladder, Broad Range (up to 25kb), 500  $\mu$ l
- VE0100 B-BOX<sup>TM</sup> Blue Light LED epi-illuminator, AC 100-240V, 50/60Hz