FT-BC5470


# Fluorescein-12-dUTP

*Fluorescent labelling of DNA by terminal deoxynucleotidyl transferase or DNA-polymerases*

## Product Information

| | |
|---|---|
| **Name :** | **Fluorescein-12-dUTP,** Fluorescein-5(6)-carboxamidocapoyl-[5(3-aminoallyl)2'-deoxyuridine-5'-triphosphate)] Tri(triammonium) salt |
| **Catalog Number :** | FP-BC5471, 30 µl (in water 1 mg/ml) |
| | FP-BC5470, 40 µl (in water 1 mg/ml) |
| **Molecular Weight :** | MW= 994 (free acid) |
| **Storage:** | –20°C (J) |

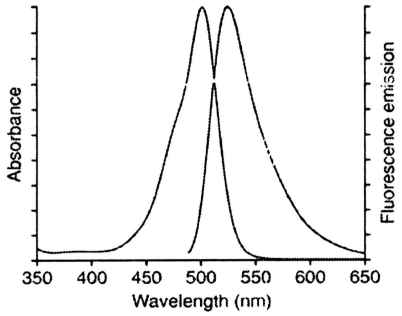
## Introduction

Fluorescein-12-dUTP can be incorporated into DNA by terminal deoxynucleotidyl transferase or DNA-polymerases.

The most popular approach for DNA PCR-labeling with Fluorescein-12-dUTP is based on the usage of dNTPs mixture which contains Fluorescein-12-dUTP and all 4 other dNTP in regular concentrations. The molar ratio dUTP/labeled dUTP (or dTTP/labeled dUTP) can vary from 3:1 to 1:1. The incorporation efficiencey depends mainly on the usage of dTTP or dUTP (the incorporation efficiency of dTTP is slightly better than those for dUTP) and on the enzyme used for PCR. Regular Taq DNA polymerase incorporates dUTP (and especially labeled dUTP) less efficient than Taq DNA polymerase with modified active center.

In some special applications one may completely substitute dTTP by Fluorescein-dUTP and to get DNA with all « T » substituted to Fluorescein-12-dUTP. Meanwhile, this 100% labeled DNA will be quite different from regular DNA in terms of electrophoresis mobility, hydrophobic properties, denaturation behavior etc. If all these points can be neglected , one can completely substitute dTTP by Fluorescein-12-dUTP.

## Spectra of Fluorescein dUTP in pH 8.0 buffer



## Directions for use

The regular protocol for DNA – labeling with Fluorescein-12-dUTP by PCR (ratio of labeled dUTP : non-labeled dTTP is 1:2) :

| Reagent | Final concentration | Quantity for 50 µl of reaction mixture |
|---|---|---|
| Sterile deionized water | - | Variable |
| 10X PCR buffer | 1X | 5 µl |
| 10 mM dNTP Mix | 0,2 mM of each | 1 µl |
| Fluorescein-12-dUTP, 1 mM | 0,1 mM | 5 µl |
| Primer I | 0,1 – 1 µM | Variable |
| Primer II | 0,1 – 1 µM | Variable |
| Taq DNA Polymerase | 1,25 U – 2,5 U/50 µl | 1,25 U – 2,5 U |
| 100 mM $MgCl_2$ | 1 – 4 mM | Variable |
| Template DNA | 10 pg – 1 µg | Variable |

PCR should be performed as optimized on the regular dNTPs – with the same $MgCl_2$ concentration, with the temperatures and cycles optimized for the particular template and primers.

## Related products

| | Description | Cat. No. |
|---|---|---|
| UptiTherm DNA Polymerase (1000 Units) | *5U/µl with Mg free Buffer + 50 mM MgCl2 buffer* | UPS53921 |
| PCR set 1 | dATP, dGTP, dCTP, dTTP 100mM each | UP968640 |
| H1 dialysis membrane | 10 mm x 50 cm, 15K MWCO | 994920 |
| DAPI, FluoProbes Pure Grade | | FP-99963A |
| FluoProbes 488-dUTP | PCR Grade, 493/517nm | FP-CD0610 |

## References


- **Jon R.I**, *et al* "Apoptotic Responses in Squamous Carcinoma and Epithelial Cells to Small-Molecule Toll-like Receptor Agonists Evaluated with Automated Cytometry",*J Biomol Screen*, **11**: 575 (2006)
- **Rachel L.S**, *et al.*, "Fibroblast Growth Factor-2 inhibits Bleomycin-induced DNA Damage in Murine Lung Endothelial Cells.", *FASEB* J, **20**: A673 (2006)
- **Shang-mian Yie**, *et al.*, "Progesterone regulates HLA-G gene expression through a novel progesterone response element", *Hum. Reprod.*, **21**: 2538 (2006)
- **Van Nguyen T.** *et al*., DNA damage-induced cellular senescence is sufficient to suppress tumorigenesis: a mouse model, *J. Exp. Med*., 204: 1453 - 1461 (2007) Article
- **Yabuta N**. *et al*., Lats2 Is an Essential Mitotic Regulator Required for the Coordination of Cell Division, *J. Biol. Chem*., 282: 19259 - 19271 (2007) Article


## Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com
Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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