POLY-DTECH
Enhance Your Detection

Data sheet
BRIGHT-DTECH™ – For LFIA

KIT DESCRIPTION

This kit is based on our lanthanide nanoparticle technology, which offers outstanding performance in lateral flow immunoassays (LFIA). The Bright-Dtech™ reagent is intended for use as a fluorescent detection label in LFIA. Detection is performed using Time-Resolved Fluorescence (TRF). Excitation and emission maxima (nm): **see table 1 on page 2**.

Supplied reagents and storage

Bright-Dtech™ ($1x10^{-8}$ M)	Store at 2-8°C
Migration buffer	Store at 2-8°C

MATERIALS AND EQUIPMENT REQUIRED (NOT INCLUDED)

- Glass tubes with cap or low-protein-binding tubes.
- Precision micropipettes with disposable tips.
- Ultrasonic bath or vortex.
- Plate reader with TRF option.

RECOMMENDED WORKING SOLUTION PREPARATION

The working solution should be prepared freshly before each use.

1. Resuspend the Bright-Dtech™ nanoparticles by thoroughly mixing the tube by sonicating (recommended) or vigorous vortexing.
2. In a glass tube or a low-protein-binding tube, dilute Bright-Dtech™ nanoparticles in the Migration Buffer according to the recommended concentrations provided in the table below:
3. Close the tube tightly.
4. Sonicate for 1 minute at 4-15 °C. Alternatively, vortex for 1 minute at room temperature.

The Bright-Dtech™ working solution is now **ready to use**. For optimal performance, use the working solution immediately after preparation.

Application	Bright-Dtech concentration*	Dilution factor
LFIA	[$1x10^{-10}$ – $1x10^{-9}$ M]	1/100 – 1/10
FLISA/FRET	[$1x10^{-11}$ – $2x10^{-10}$ M]	1/1000 – 1/50
Dot-Blot	[$1x10^{-11}$ – $1x10^{-9}$ M]	1/1000 – 1/10

*Reader dependent. Optimal concentrations/dilutions should be determined by the end user.

Note: PBS is not recommended for use with Bright-Dtech™ nanoparticles.

Technical information: The procedure and buffer provided in this datasheet are intended as general guidelines. Optimal working conditions may vary depending on the protein. Further optimization of nanoparticle concentration, incubation conditions, buffer composition, and other assay parameters may be required for individual applications.

This kit is for **Research Use Only**, not for diagnostic procedures.

TABLE 1. Bright-Dtech™ Lanthanide Nanoparticle Specifications and Product Range

NP	REFERENCE	DESCRIPTION	EX/EM* (nm)	QUANTITY (For one reference)	MIGRATION BUFFER (For one reference)
Tb (GREEN)	BDT545STD - LFIA	Standard BDT 545 - LFIA	340 / 545	250 µL	50 mL
	BDT545STRP - LFIA	Streptavidin conjugated BDT 545 - LFIA		500 µL	50 mL
	BDT545BIOT - LFIA	Biotin conjugated BDT 545 - LFIA		1 mL	50 mL
	BDT545RAB - LFIA	Goat anti-Rabbit IgG (H+L) coupled to BDT 545 - LFIA		1.5 mL	50 mL
	BDT545MOU - LFIA	Goat anti-Mouse IgG (H+L) coupled to BDT 545 - LFIA		2 x 1.5 mL	2 x 50 mL
	BDT545GOA - LFIA	Goat anti-Mouse IgG (H+L) coupled to BDT 545 - LFIA		3 x 1.5 mL	3 x 50 mL
	BDT545HUM - LFIA	Goat anti-Goat IgG (H+L) coupled to BDT 545 - LFIA		4 x 1.5 mL	4 x 50 mL
Eu (RED)	BDT614STD - LFIA	Standard BDT 614 - LFIA	340 / 590-614-690	250 µL	50 mL
	BDT614STRP - LFIA	Streptavidin conjugated BDT 614 - LFIA		500 µL	50 mL
	BDT614BIOT - LFIA	Biotin conjugated BDT 614 - LFIA		1 mL	50 mL
	BDT614RAB - LFIA	Goat anti-Rabbit IgG (H+L) coupled to BDT 614 - LFIA		1.5 mL	50 mL
	BDT614MOU - LFIA	Goat anti-Mouse IgG (H+L) coupled to BDT 614 - LFIA		2 x 1.5 mL	2 x 50 mL
	BDT614GOA - LFIA	Goat anti-Mouse IgG (H+L) coupled to BDT 614 - LFIA		3 x 1.5 mL	3 x 50 mL
	BDT614HUM - LFIA	Goat anti-Goat IgG (H+L) coupled to BDT 614 - LFIA		4 x 1.5 mL	4 x 50 mL

*Excitation and emission maxima in nanometers

SCIENTIFIC PUBLICATIONS

- Lajoux J. et al. *Breaking the picomolar barrier in lateral flow assays using Bright-DtechTM614 - Europium nanoparticles for enhanced sensitivity*. Microchemical Journal, 2025, 209. doi.10.1016/j.microc.2025.112864
- Lajoux J. et al. *Lanthanide nanoparticles as ultra-sensitive luminescent probes for quantitative PSA detection via lateral flow assays*. Sensors & Diagnostics, 2025, 5 (1). doi.org/10.1039/d5sd00143a