Lumiprobe Corporation
115 Airport Dr Suite 160
Westminster, Maryland 21157
USA
Phone: +1 888 973 6353
Fax: +1 888 973 6354
Email: order@lumiprobe.com

TAMRA-2,4-dinitroaniline (TMR-DN)

http://www.lumiprobe.com/p/tamra-dinitroaniline-tmr-dn

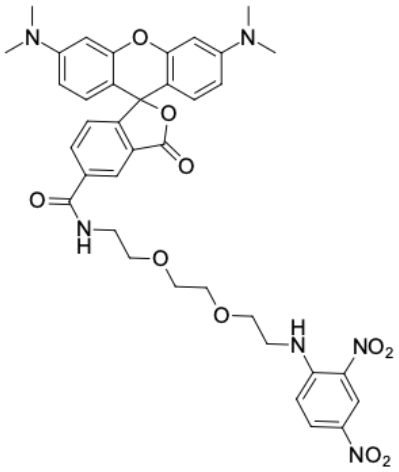
TMR DN is a probe, the 5-carboxy tetramethylrhodamine (TMR) linked with a quencher moiety, dinitroaniline (DN), enabling contact quenching, non-toxic for cells, and capable cell membrane penetration.

The core of the molecule is represented by an aromatic fragment bearing a negatively charged carboxylic group, it possesses bright fluorescence properties, and at the same time, it reduces nonspecific binding to genomic DNA or RNA.

RNA-based sensors and TMR DN are used for intracellular visualization of mRNA and rRNA in live prokaryotic or eukaryotic cells. Tandem repeat aptamers (e.g., sulforhodamine-binding RNA aptamer (SRB-2)) may provide an advantage for the visualization of less stable RNA and those of low content quantities in cells. The advantage of the SRB-2/TMR DN system is its high brightness, comparable to GFP (green fluorescent protein), showing a smaller complex size. SRB-2 is also orthogonal to Spinach/Broccoli aptamers, and no crossreactivity between aptamers and ligands (TMR DN and DFHBI ((3,5-difluoro-4-hydroxybenzylidene)) occurs, thus TMR DN and SRB-2 can be used along with the other probe/aptamer pairs for visualization and dynamic imaging in parallel for several RNA [1]. The excitation and emission maxima of the complex SRB-2/TMR DN are 561 and 587 nm, respectively, lying in the orange region of the spectrum where the cellular auto-fluorescence is low [2].

[1] Rigumula Wu et al. Ratiometric Fluorogenic RNA-Based Sensors for Imaging Live-Cell Dynamics of Small Molecules. ACS Applied Bio Materials. 2020. 3(5). 2633-2642.

[2] Murat Sunbul & Andres Jäschke. SRB-2: a promiscuous rainbow aptamer for live-cell RNA imaging. Nucleic acids research. 2018. 46(18).



Structure of TAMRA-2,4-dinitroaniline (TMR-DN)

General properties	
Appearance:	red crystals
Molecular weight:	726.73
Molecular formula:	$C_{37}H_{38}N_6O_{10}$
IUPAC name:	3',6'-bis(dimethylamino)-N-(2-(2-(2-((2,4-dinitrophenyl)amino)ethoxy)ethoxy)ethyl)-3-oxo-3',9a'-dihydro-3H-spiro[isobenzofuran-1,9'-xanthene]-5-carboxamide
Solubility:	soluble in DMSO
Quality control:	NMR ^1H, HPLC-MS (95%)
Storage conditions:	Storage: 24 months after receival at -20°C in the dark. Transportation: at room temperature for up to 3 weeks. Desiccate.
Legal statement:	This Product is offered and sold for research purposes only. It has not been tested for safety and efficacy in food, drug, medical device, cosmetic, commercial or any other use. Supply does not express or imply authorization to use for any other purpose, including, without limitation, in vitro diagnostic purposes, in the manufacture of food or pharmaceutical products, in medical devices or in cosmetic products.