

## Di-4-ANEPPS, potentiometric probe

<http://www.lumiprobe.com/p/di-4-anepps>

Di-4-ANEPPS is an Amino-Naphthyl-Ethenyl-Pyrindinium (ANEP) family voltage-sensitive dye widely used as a fast-responding membrane potential probe. The dye is non-fluorescent until bound to membranes and fluoresces only in response to electrical potential fluctuations in its environment.

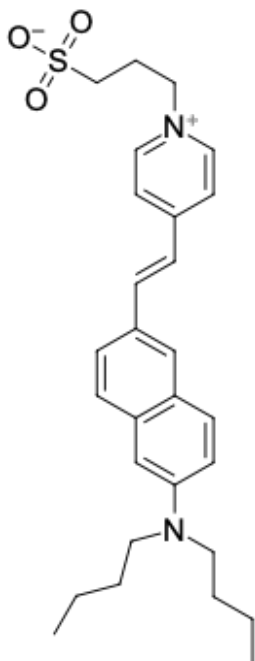
The optical response of Di-4-ANEPPS is fast enough to detect transient (millisecond) potential changes in excitable cells, such as single neurons, cardiac cells, and intact brains. The magnitude of potential-dependent fluorescence change is about 2-10% per 100 mV. The dye also displays a potential-dependent shift in excitation spectrum, permitting the quantitation of cell membrane potential using ratiometric techniques.

Di-4-ANEPPS is quickly internalized by cells, so it is primarily used for short-term studies. Since Di-4-ANEPPS binds to the cell membrane, it can also be used as a plasma membrane and endocytosis marker.

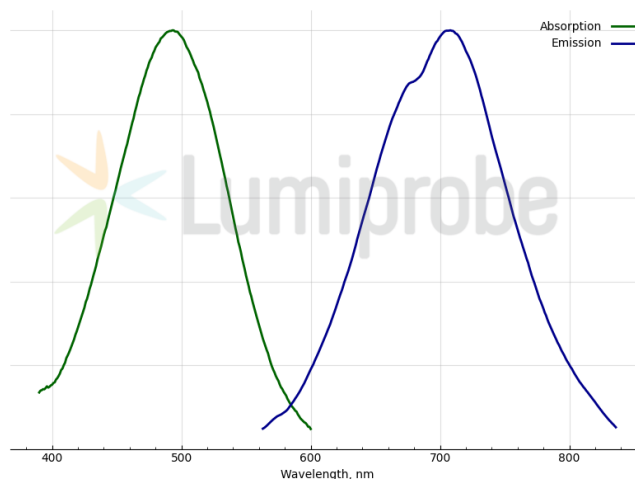
Excitation/emission maxima of Di-4-ANEPPS in methanol are 493/708 nm, respectively. In lipids and cell membranes, the excitation and emission spectra of the dye are typically blue-shifted compared to organic solvent.

Di-4-ANEPPS can be introduced into cells by directly adding the stock solution to the culture medium, using [Pluronic® F-127](#), or retrograde labeling. Use a 5-10  $\mu$ M working concentration as a starting point. The exact dye concentration should be defined experimentally.

We also provide [Di-8-ANEPPS](#), which is more hydrophobic and better retained in the outer leaflet of the cell membrane.



**Structure of Di-4-ANEPPS**



**Absorption and emission spectra of Di-4-ANEPPS**

### General properties

Appearance:	red solid
Molecular weight:	480.67
CAS number:	90134-00-2
Molecular formula:	C <sub>28</sub> H <sub>36</sub> N <sub>2</sub> O <sub>3</sub> S
Solubility:	ethanol, DMF, DMSO
Quality control:	NMR <sup>1</sup> H and HPLC-MS (95+%)
Storage conditions:	24 months after receipt 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.

**Spectral properties**

Excitation/absorption maximum, nm: 493

Emission maximum, nm: 708

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