

## Di-4-ANEPPS, potentiometric probe

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

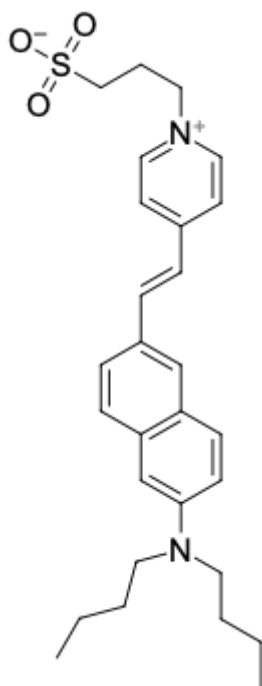
Di-4-ANEPPS is an Amino-Naphthyl-Ethenyl-Pyrindinium (ANEP) family voltage-sensitive dye widely used as a fast-responding membrane potential probe. The dye is non-fluorescent until bound to membranes and fluoresces only in response to electrical potential fluctuations in its environment.

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. We also provide [Di-8-ANEPPS](#), which is more hydrophobic and better retained in the outer leaflet of the cell membrane. 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 496/705 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  $\mu\text{M}$  working concentration as a starting point. The exact dye concentration should be defined experimentally.



**Structure 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.

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