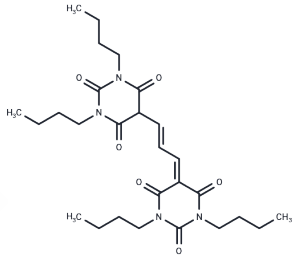
# Data Sheet (Cat.No.T18974)

TargetMol

## DiBAC4(3)

### Chemical Properties



CAS No. : 70363-83-6

Formula: C27H40N4O6

Molecular Weight: 516.63

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

### Biological Description

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| Description | DiBAC4(3) is a voltage-sensitive fluorescent dye (λem=505 nm, λex=490 nm). |
| Targets(IC50) | Others |
| In vitro | Membrane hyperpolarization in HEKBKα, induced by 10 μM Evans blue (EB), is distinctly detected using DiBAC4(3), contrasting with the gradual alteration in membrane potential observed upon adding 3 mM tetraethylammonium chloride compared to microelectrode assessments. Hyperpolarization peak times are 2.3±0.9 s and 35.0±2.6 s, as measured with microelectrodes and DiBAC4(3), respectively. |
| Cell Research | Instructions<br>I. Solution preparation<br>1. Stock solution: DiBAC4(3) can be dissolved in DMSO or other appropriate solvents to prepare a stock solution with a concentration of 1-10 mM.<br>2. Working solution: Dilute the stock solution to a working concentration, usually 1-5 μM, using an appropriate buffer or culture medium (e.g., PBS or RPMI) as needed for the experiment.<br>II. Procedure<br>1. Cell staining: Seed the cells in a suitable culture dish and culture to the desired density. Add the DiBAC4(3) working solution to the culture medium containing the cells.<br>2. Incubate at 37°C for 15-30 minutes. The incubation time may vary depending on the experimental conditions. Avoid light during incubation to prevent dye degradation.<br>3. Washing: After incubation, wash the cells with fresh culture medium or PBS to remove unbound dye.<br>4. The cells can now be used for fluorescence detection.<br>5. Fluorescence detection: Excitation and emission wavelengths: DiBAC4(3) can be excited by light at a wavelength of 490 nm and emits light at approximately 505 nm. Fluorescence intensity is related to changes in membrane potential. Increased fluorescence intensity is generally associated with hyperpolarization, while decreased fluorescence intensity is associated with depolarization.<br>Microscopy/flow cytometry: For fluorescence microscopy, a microscope equipped with appropriate filters is used to observe fluorescence at an emission wavelength of 505 nm; for flow cytometry, fluorescence can be measured in the 505 nm range to analyze changes in membrane potential of individual cells. |

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| Cell Research | 6. Application areas:<br>1) Membrane potential research: DiBAC4(3) is widely used to monitor changes in membrane potential of living cells, which is crucial for ion channel activity, drug screening, and cell excitability studies.<br>2) Cardiac and neural research: It is often used in electrophysiological studies of cardiac cells, neurons, and other excitable cells.<br>3) Toxicology and cell stress: DiBAC4(3) can also be used to evaluate the effects of toxic factors on cell membrane potential.<br>Notes:<br>1. Photosensitivity: DiBAC4(3) is light sensitive and samples should be handled in the dark or in a low light environment.<br>2. Toxicity: Although generally safe at working concentrations, high concentrations may affect cell viability. Therefore, it is recommended to optimize the concentration for each cell type.<br><br>The above information is based on published literature. Experimental procedures should be appropriately modified to meet specific research demands. |

## Solubility Information

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| Solubility | DMSO: 55 mg/mL (106.46 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 1.9356 mL | 9.6781 mL | 19.3562 mL |
| 5 mM | 0.3871 mL | 1.9356 mL | 3.8712 mL |
| 10 mM | 0.1936 mL | 0.9678 mL | 1.9356 mL |
| 50 mM | 0.0387 mL | 0.1936 mL | 0.3871 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

de Souza-Guerreiro TC, et al. Membrane potential dynamics unveil the promise of bioelectrical antimicrobial susceptibility Testing (BeAST) for anti-fungal screening. mBio. 2024 Aug 14;15(8):e0130224.
Chen TY, Chet al. Homoplantaginin Antagonizes N-Methyl-d-aspartate Receptor and Extracellular Signal-Regulated Kinase Signaling in Aβ Oligomers-Induced Neuropathology/Toxicity. J Agric Food Chem. 2024 Dec 25;72 (51):28294-28304.
Gao J, et al. Rapid Characterization of the Functional and Pharmacological Consequences of Cantú Syndrome KATP Channel Mutations in Intact Cells. J Pharmacol Exp Ther. 2023 Sep;386(3):298-309.



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