

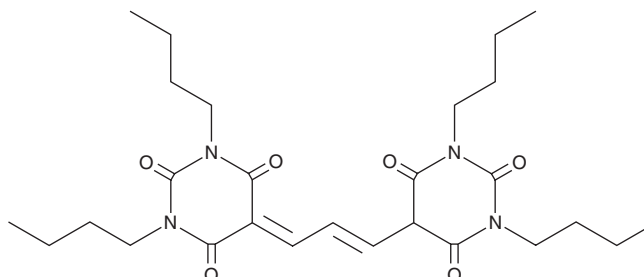
# PRODUCT INFORMATION



## DiBAC<sub>4</sub>(3)

Item No. 33924

**CAS Registry No.:** 70363-83-6  
**Formal Name:** 1,3-dibutyl-5-[3-(1,3-dibutylhexahydro-2,4,6-trioxo-5-pyrimidinyl)-2-propen-1-ylidene]-2,4,6(1H,3H,5H)-pyrimidinetrione  
**Synonym:** Bis(1,3-Dibutylbarbituric Acid) Trimethine Oxonol  
**MF:** C<sub>27</sub>H<sub>40</sub>N<sub>4</sub>O<sub>6</sub>  
**FW:** 516.6  
**Purity:** ≥95%  
**Ex./Em. Max:** 490/516 nm  
**UV/Vis.:** λ<sub>max</sub>: 495 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

DiBAC<sub>4</sub>(3) is supplied as a solid. A stock solution may be made by dissolving the DiBAC<sub>4</sub>(3) in the solvent of choice, which should be purged with an inert gas. DiBAC<sub>4</sub>(3) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of DiBAC<sub>4</sub>(3) in these solvents is approximately 5, 15, and 10 mg/ml, respectively.

DiBAC<sub>4</sub>(3) is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, DiBAC<sub>4</sub>(3) should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. DiBAC<sub>4</sub>(3) has a solubility of approximately 0.33 mg/ml in a 1:2 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

DiBAC<sub>4</sub>(3) is a negatively charged fluorescent membrane potential indicator.<sup>1</sup> Upon membrane depolarization, DiBAC<sub>4</sub>(3) enters the cytosol, binds to lipid membranes and intracellular proteins, and displays excitation/emission maxima of 490/516 nm, respectively.<sup>1,2</sup> It has been used to measure the membrane potential of live or fixed mammalian and bacterial cells by flow cytometry or fluorescence microscopy.<sup>2-4</sup>

### References

1. Yamada, A., Gaja, N., Ohya, S., *et al.* Usefulness and limitation of DiBAC<sub>4</sub>(3), a voltage-sensitive fluorescent dye, for the measurement of membrane potentials regulated by recombinant large conductance Ca<sup>2+</sup>-activated K<sup>+</sup> channels in HEK293 cells. *Jpn. J. Pharmacol.* **86(3)**, 342-350 (2001).
2. Warren, E.A.K. and Payne, C.K. Cellular binding of nanoparticles disrupts the membrane potential. *RSC Adv.* **5(18)**, 13660-13666 (2015).
3. Klapperstück, T., Glanz, D., Klapperstück, M., *et al.* Methodological aspects of measuring absolute values of membrane potential in human cells by flow cytometry. *Cytometry A.* **75(7)**, 593-608 (2009).
4. Mason, D.J., Allman, R., Stark, J.M., *et al.* Rapid estimation of bacterial antibiotic susceptibility with flow cytometry. *J. Microsc.* **176(Pt 1)**, 8-16 (1994).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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