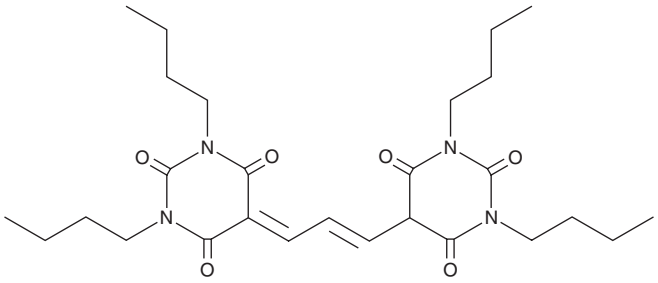
PRODUCT INFORMATION

$DiBAC_4(3)$

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:	$C_{27}H_{40}N_4O_6$
FW:	516.6
Purity:	≥95%
Ex./Em. Max:	490/516 nm
UV/Vis.:	λ_{max}: 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

$DiBAC_4(3)$ is supplied as a solid. A stock solution may be made by dissolving the $DiBAC_4(3)$ in the solvent of choice, which should be purged with an inert gas. $DiBAC_4(3)$ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of $DiBAC_4(3)$ in these solvents is approximately 5, 15, and 10 mg/ml, respectively.

$DiBAC_4(3)$ is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, $DiBAC_4(3)$ should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. $DiBAC_4(3)$ 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

$DiBAC_4(3)$ is a negatively charged fluorescent membrane potential indicator.[1] Upon membrane depolarization, $DiBAC_4(3)$ enters the cytosol, binds to lipid membranes and intracellular proteins, and displays excitation/emission maxima of 490/516 nm, respectively.[1,2] It has been used to measure the membrane potential of live or fixed mammalian and bacterial cells by flow cytometry or fluorescence microscopy.[2-4]

References

1. Yamada, A., Gaja, N., Ohya, S., *et al.* Usefulness and limitation of $DiBAC_4(3)$, a voltage-sensitive fluorescent dye, for the measurement of membrane potentials regulated by recombinant large conductance Ca^{2+}-activated K^+ 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).

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