

DiSC3(5) (3,3'-Dipropylthiadicarbocyanine Iodide)

产品编号	产品名称	包装规格
NBS3224-10mg	DiSC3(5) (3,3'-Dipropylthiadicarbocyanine Iodide)	10mg
NBS3224-50mg	DiSC3(5) (3,3'-Dipropylthiadicarbocyanine Iodide)	50mg
NBS3224-250mg	DiSC3(5) (3,3'-Dipropylthiadicarbocyanine Iodide)	250mg

【温馨提示】：见我司整理的膜电位荧光探针产品专题。

产品简介：

DiSC3(5) (3,3'-Dipropylthiadicarbocyanine Iodide)，一种具短（C3）烷基尾的羰花青染料，这种阳离子染料能用来检测和测量由膜改性试剂引起的跨膜电位或结构变化。

产品特性：

- 1) CAS NO: 53213-94-8
- 2) 化学名: Benzothiazolium, 3-propyl-2-(5-(3-propyl)-2(3H)-benzothiazolidene-1,3-pentadienyl), iodide
- 3) 英文同义名: diS-C3-(5); 3,3'-Di-n-propylthiadicarbocyanine iodide; 3,3-Dipropylthiadicarbocyanine iodide; 5-(3-Propylbenzothiazol-2-ylidene)-1-(3-propylbenzothiazolium-2-yl)-1,3-pentadiene Iodide; 3-Propyl-2-[5-[3-propyl-2(3H)-benzothiazolylidene]-1,3-pentadienyl]benzothiazolium iodide;
- 4) 中文同义名: 3,3'-二丙基硫杂二羰花青碘化物; 碘化-3,3'-二丙基硫杂二羰花青;
- 5) 分子式: C₂₅H₂₇IN₂S₂
- 6) 分子量: 546.53g/mol
- 7) 纯度: ≥98% (HPLC)
- 8) Ex/Em: 500/705 nm (in DMF)
- 9) 溶解性: 溶于 DMF

保存条件:

室温避光干燥保存，可置于-20℃长期干燥避光保存，2 年有效。

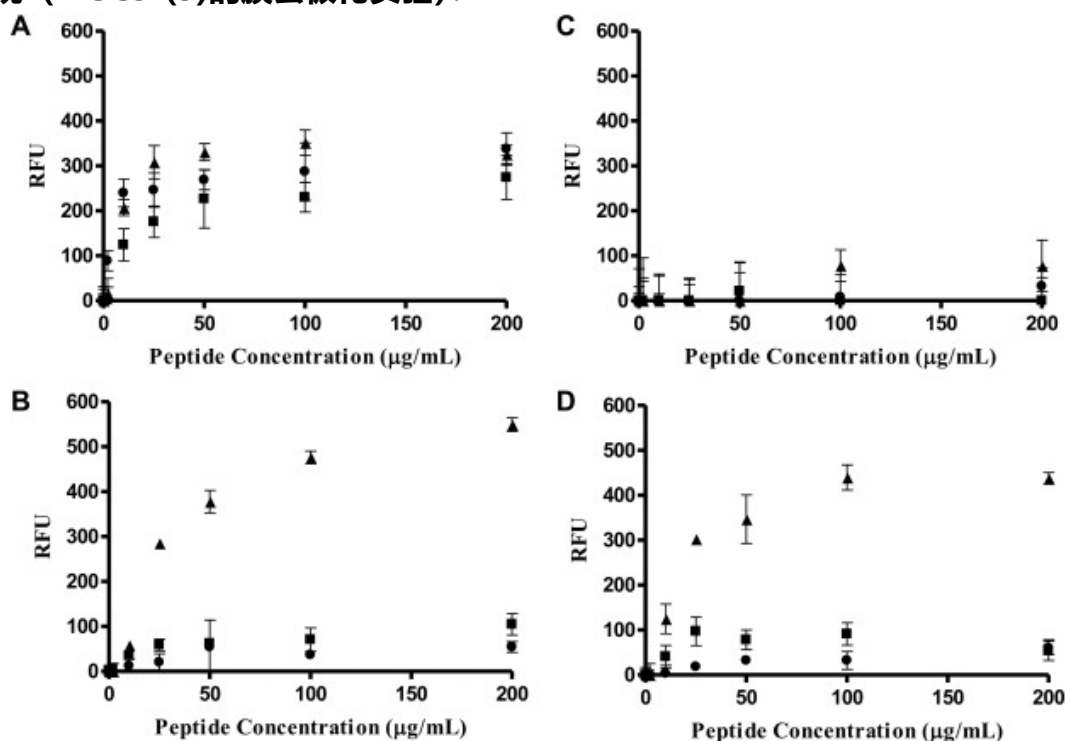
产品使用:

文献来源: Juba ML et al. Helical cationic antimicrobial peptide length and its impact on membrane disruption. *Biochim Biophys Acta*. 2015 May;1848(5):1081-91. PMID: 25660753

实验方法 (膜去极化实验): Frozen aliquots of enumerated bacteria (*E. coli* or *B. cereus*) were thawed on ice and washed 3 times with buffer (5 mM HEPES with 20 mM glucose, pH 7.4). Following washing, the pelleted bacteria were re-suspended in HEPES buffer (5 mM HEPES, pH 7.4, 20 mM glucose) containing either, 10 or 100 mM KCl. A 96-well plate was prepared where wells are charged with 360 μ L of bacterial suspension (2×10^7 CFU/mL) and 4.19 μ L of diSC3-(5) (200 nM) for a total volume of 364.19 μ L. The bacteria were incubated at room temperature and fluorescence was monitored (622 nmex/670 nmem) until diSC3-(5) maximal uptake was obtained. Maximal diSC3-(5) uptake is indicated by a baseline in fluorescence due to self-quenching as the dye concentrates in the cell membrane. Peptide (NA-CATH, L- or D-ATRA-1A) was added at varied concentrations (200–2 μ g/mL) in 20 μ L aliquots and the fluorescence increase due to induced depolarization of the cytoplasmic membrane was recorded. A negative control of bacteria and diSC3-(5) was used as a background. As a positive control, complete collapse of the membrane potential was attained with valinomycin (200–2 μ g/mL), a potassium ionophore.

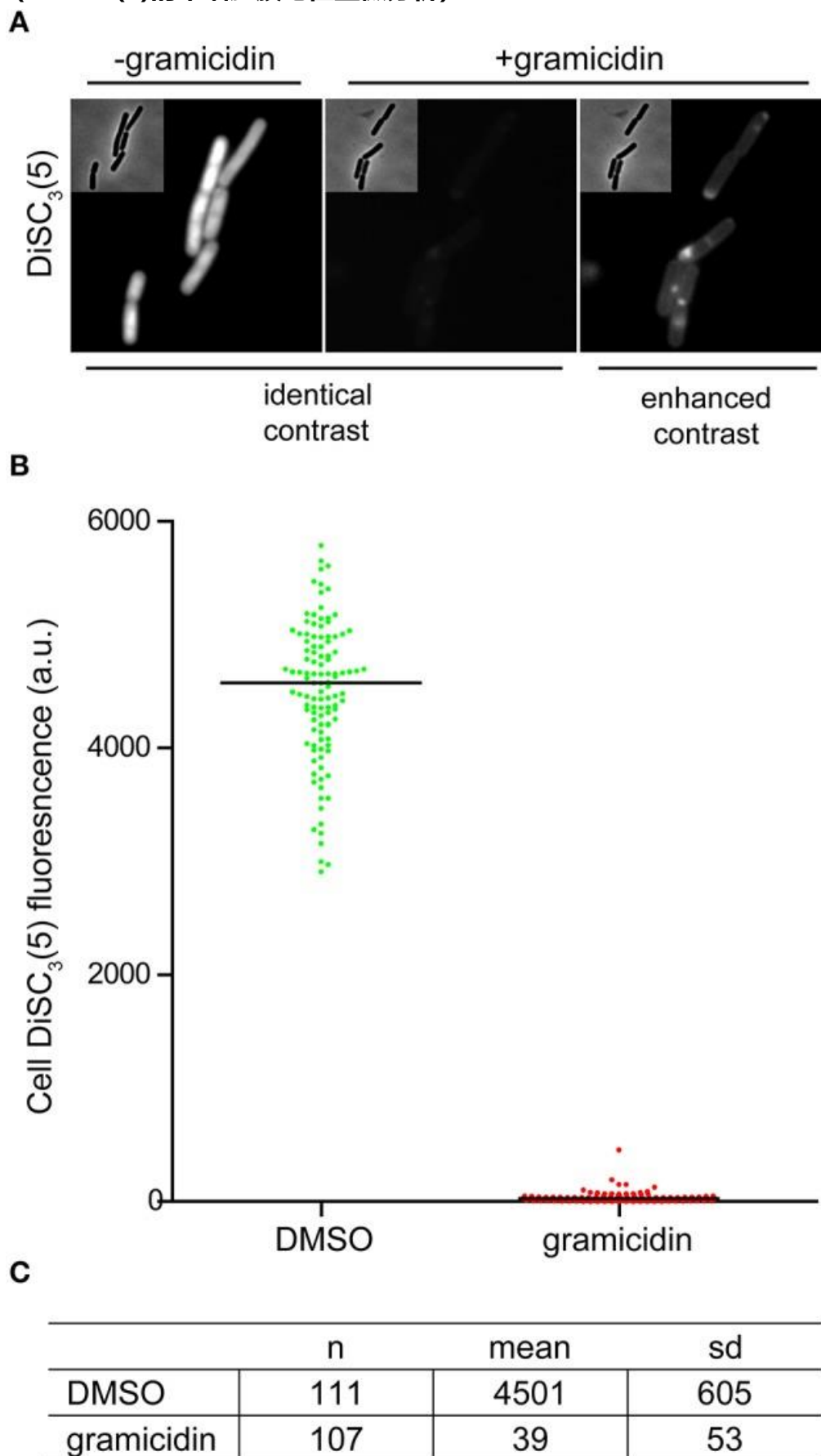
检测原理 (DiSC3-(5)的膜去极化实验): DiSC3(5)作为一种膜电位敏感探针, 聚集在磷脂双分子层内, 引起染料的自淬灭。当膜改性化合物 (比如多肽) 使膜去极化, 电位丧失, DiSC3(5)释放进入溶液引起荧光增强, 荧光强弱与电位减少程度呈正比。

结果展现 (DiSC3-(5)的膜去极化实验):



文献来源: Te Winkel JDet al. Analysis of Antimicrobial-Triggered Membrane Depolarization Using Voltage Sensitive Dyes. *Front Cell Dev Biol.* 2016 Apr 13;4:29. PMID: 27148531

结果展现 (DiSC₃-(5)的单细胞膜电位显微分析):



实验方法 (膜电位的显微分析): Early-mid logarithmic growth phase cell suspensions were incubated with 2 μ M DiSC3(5) directly in the growth medium. The incubation was carried out under shaking for 5 min, immediately followed by microscopy. A final concentration of 0.5–1% DiSC3(5)-solvent dimethyl sulfoxide (DMSO) was found to be crucial in order to maintain appropriate solubility; lower solvent concentrations resulted in a strongly reduced cellular fluorescence. The incubation was carried out at growth temperature, and under vigorous shaking in order to maintain good energization of the cells. This step was routinely carried out with 2 ml round bottom Eppendorf tubes containing 200 μ l cell suspension in a thermomixer. To provide sufficient aeration, the lids of the tubes were perforated. When dissipation of membrane potential was tested, a compound of interest was added in parallel to DiSC3(5). Addition of 5 μ M gramicidin (a mixture of gramicidin A, B, C, and D) was routinely used as a positive control. The imaging of DiSC3(5)-stained cells was carried out using commonly available Cy5-filter sets.

【重要信息: 文章多次提及到 DiSC3(5)的工作浓度内维持 1%DMSO 浓度, 对维持染料的溶解性和荧光稳定性很是关键。】

注意事项:

1. 荧光染料均存在淬灭问题, 请尽量注意避光, 以减缓荧光淬灭。
2. 为了您的安全和健康, 请穿实验服并戴一次性手套操作。

本产品仅用于生命科学研究, 不得用于医学诊断及其他用途!

相关产品：

产品编号	产品名称	包装规格
<u>NBS3218-25mg</u>	<u>DiOC2(3) 绿色膜电位荧光探针</u>	25mg
<u>NBS3219-10mg</u>	<u>DiOC6(3) 内质网荧光探针</u>	10mg
<u>NBS3220-5mg</u>	<u>DiBAC4(3) 膜电位荧光探针</u>	5mg
<u>NBS3221-25mg</u>	<u>DiSBAC2(3)膜电位荧光探针</u>	25mg
<u>NBS3222-25mg</u>	<u>DiBAC4(5) 膜电位荧光探针</u>	25mg
<u>NBS3223-25mg</u>	<u>DiOC5(3)膜电位荧光探针</u>	25mg
<u>NBS3224-10mg</u>	<u>DiSC3(5) 膜电位荧光探针</u>	10mg
<u>NBS3225-50mg</u>	<u>DiSC2(7) 膜电位荧光探针</u>	50mg
<u>NBS3226-50mg</u>	<u>DiSC2(5) 膜电位荧光探针</u>	50mg
<u>NBS3227-1mg</u>	<u>Di-4-ANEPPS 膜电位荧光探针</u>	1mg
<u>NBS3228-5mg</u>	<u>Di-8-ANEPPS 膜电位荧光探针</u>	5mg
<u>NBS3229-5mg</u>	<u>Di-2-ANEPEQ (JPW 1114) 膜电位荧光探针</u>	5mg
<u>NBS3230-25mg</u>	<u>Tetramethylrhodamine Ethyl Ester (TMRE)</u>	25mg
<u>NBS3231-25mg</u>	<u>Tetramethylrhodamine Methyl Ester (TMRM)</u>	25mg