SBFI AM（Na+ Indicator）钠离子指示探针

产品编号	产品名称	包装规格
NBS7676-100ug	SBFI AM（Na+ Indicator）钠离子指示探针	2x50ug
NBS7676-500ug	SBFI AM（Na+ Indicator）钠离子指示探针	10x50ug
NBS7676-1000ug	SBFI AM（Na+ Indicator）钠离子指示探针	20x50ug
NBS7676-1mg	SBFI AM（Na+ Indicator）钠离子指示探针	1mg

【务必注意】：初次使用离子探针的用户，强烈建议配合：Pluronic F-127, Cell Culture Tested 细胞培养级（NBS2009-1g）一起使用，以提高探针的水溶性和胞内加载性。

产品简介：

SBFI，英文全名 Sodium-binding Benzofuran Isophthalate，一种 Na+选择性荧光指示剂，可用来预测纯化线粒体 Na+梯度，检测胞内 Na+水平，测定细胞 Na+外流，以及与其他荧光指示剂联合使用以分析 Na+与 Ca2+和 Mg2+浓度、胞内 pH 和膜电位变化的相关性。虽然 SBFI 对 Na+的选择能力弱于 Ca2+指示剂比如 Fura-2，但在其他单价阳离子存在体系，SBFI 足以检测 Na+的生理浓度。结合离子后的 SBFI 光谱反应可通过激发光比率测定来判定，其能与用相同光滤片和仪器检测的探针 Fura-2 共同使用。

当体系内含生理浓度的K+/Na+(~135mM)，SBFI对Na+的解离常数(Kd)为11.3mM；而不存在 K+体系，对 Na+的 Kd 为 3.8mM。SBFI 对 Na+的选择性比 K+约强 18 倍。

本品为乙酰氧基甲基酯（Acetoxymethyl ester, AM ester）形式的 SBFI，CAS NO：129423-53-6，具有细胞膜渗透性，只需简单孵育即可进入细胞，常用加载浓度范围 5-10μM，加载时间 40min-4h，根据具体的实验要求和细胞类型来调整。

产品特性：

1）化学名：

4,4’-[1,4,10-trioxa-7,13-diazacyclopentadecane-7,13-diylbis(5-methoxy-6,2-benzofurandiyl)]bis-1,3- benzenedicarboxylic acid 1,1’,3,3’-tetrakis[(acetyloxy)methyl] ester

2）同义名：Sodium-binding Benzofuran Isophthalate Acetoxymethyl ester

3）CAS NO：129423-53-6

4）分子式：C56H58N2O23

5）分子量：1127.07

6）纯度： > 90%（HPLC）

7）Ex/Em：340,380/500 nm

8）外观：浅黄至暗黄至暗橙固体或油状

9）溶解性：溶于 DMSO（10mM）

保存条件:

-20℃避光干燥稳定冻存 2 年。

注意事项:

1. SBFI AM 易受潮，粉末需要干燥保存；需用无水 DMSO 溶解，配制储存液（如 10mM），置于-20℃干燥避光，小量分装避免反复冻融，至少 3 个月稳定。
2. 由于 SBFI AM 水溶性较差，可在实验前与等体积 Pluronic F-127（25% w/v）混合，以提高探针加载效率。
3. 为了您的安全和健康，请穿实验服并戴一次性手套操作。

文献引用:

[1] Tong W et al. Phthalocyanine functionalized poly(glycidyl methacrylate) nano-assemblies for photodynamic inactivation of bacteria. Biomater. Sci., 2019,7, 1905-1918

[2] Li R et al. Biofilm inhibition and mode of action of epigallocatechin gallate against Vibrio mimicus. Food Control, Volume 113, July 2020, 107148

Then PBFI probe was added and incubated at 37 °C for 90 min.The cells were washed, collected and resuspended with PBS buffer. Aliquots (100 μL) of bacterial suspension were transferred to a Corning 96 well black plate, and 100 μL of various concentrations of EGCG were dispensed in the microtiter plate wells.

[3] Liu Y, Zhen W, Wang Y, Song S, Zhang H. Na2S2O8 Nanoparticles Trigger Antitumor Immunotherapy through Reactive Oxygen Species Storm and Surge of Tumor Osmolarity. J Am Chem Soc. 2020 Dec 30;142(52):21751-21757. doi: 10.1021/jacs.0c09482. Epub 2020 Dec 18. PMID: 33337859.

4T1 cells were inoculated into glass bottom culture dishes for 24 h. Then, adding

PNSO NPs medium solution (80 μg/mL) to continue co-culture for 4 h. The treated 4T1 cells were further incubated with 10μM Na+ indicator SBFI AM in 0.04% Pluronic F-127 and the fluorescence signal was measured by CLSM.

[4] Liang Z, Yang Y, Yu G, et al. Engineering aluminum hydroxyphosphate nanoparticles with well-controlled surface property to enhance humoral immune responses as vaccine adjuvants. Biomaterials. 2021 Jun;275:120960. DOI: 10.1016/j.biomaterials.2021.120960.

[5] BMDMs were treated with AAHPs (250 μg/mL) in the presence of LPS at 500 ng/mL for 5 h.Then PBFI AM was added to the cells at the concentration of 10 μM, and cells were incubated at 37 °C for 1h. Triton X-100 (0.2%) treated cells were used as controls. The fluorescence of PBFI AM was measured at the Ex/Em of 340/615 nm. The data were expressed as relative fluorescence intensity (RFI) defined as the fluorescence intensity of AAHPs-treated BMDMs normalized to the intensity of control cells.

[6] Jia Y, Yang B, Shi J, Fang D, Wang Z, Liu Y. Melatonin prevents conjugative transfer of plasmid-mediated antibiotic resistance genes by disrupting proton motive force. Pharmacol Res. 2022 Jan;175:105978. doi: 10.1016/j.phrs.2021.105978. Epub 2021 Nov 21. PMID: 34813930.

As for the detection of intracellular K + concentration, the PBFI-AM (K + indicator) fluorescence dye labeled cells (10 μM) in the presence of.....

相关产品：

产品编号	产品名称	包装规格
NBS7621-500ug	SQI-Et (Na) 钠离子载体	500μg
NBS7622-500ug	SQI-Pr (Na) 钠离子载体	500μg
NBS7676-100ug	SBFI AM (Na+ Indicator) 钠离子指示探针	100μg
NBS7677-50ug	Enhanced NaTrium Green-2 AM 钠离子指示探针	50ug
NBS7678-500ug	Enhanced NaTRIUM Green-2 TMA+ Salt 钠离子指示探针	500μg
NBS7679-100ug	CoroNa Green, AM, Cell Permeant 钠离子指示探针	2x50ug
NBS7619-100mg	Monensin, Sodium Salt 莫能霉素（钠盐）	100mg
NBS7620-1ml	Monensin Solution (1,000×) 莫能霉素溶液（1,000×）	1ml