# **PRODUCT** INFORMATION



# **PBFI AM**

Item No. 21602

| CAS Registry No.: | 124549-23-1  |   |
|-------------------|--|---|
| Formal Name:      | 4,4'-[1,4,10,13-tetraoxa-7,16-                                 |   |
|                   | diazacyclooctadecane-7,16-diylbis                              |   |
|                   | (5-methoxy-6,2-benzofurandiyl)]                                |   |
|                   | bis-1,3-benzenedicarboxylic acid,                              |   |
|                   | tetrakis[(acetyloxy)methyl] ester                              |   |
| Synonym:          | Potassium-binding Benzofuran                                   |   |
|                   | Isophthalate Acetoxymethyl ester                               |   |
| MF:               | C <sub>58</sub> H <sub>62</sub> N <sub>2</sub> O <sub>24</sub> |   |
| FW:               | 1,171.1  |   |
| Purity:           | ≥95%   | ° |
| Ex./Em. Max:      | 336/480-557 nm   | / |
| Supplied as:      | A solid  |   |
| Storage:          | -20°C  |   |
| Stability:        | ≥4 years   |   |



Special Conditions: Store in desiccating conditions Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

PBFI AM is supplied as a solid. A stock solution may be made by dissolving the PBFI AM in the solvent of choice, which should be purged with an inert gas. PBFI AM is soluble in methanol and DMSO.

### Description

PBFI AM is a cell-permeable, potassium-sensitive fluorophore used to measure potassium changes in cells and intracellular compartments.<sup>1,2</sup> As PBFI AM enters cells, it is hydrolyzed by intracellular esterases to produce PBFI. The affinity of PBFI for potassium is sodium-dependent ( $K_d$  = 44 and 5.1 mM with or without sodium, respectively).<sup>3</sup> Absorption and emission maxima are 336 and 480-557 nm, respectively.<sup>4,5</sup>

#### References

- 1. Grieshaber, S., Swanson, J.A., and Hackstadt, T. Determination of the physical environment within the Chlamydia trachomatis inclusion using ion-selective ratiometric probes. Cell. Microbiol. 4(5), 273-283 (2002).
- 2. Ljubkovic, M., Marinovic, J., Fuchs, A., et al. Targeted expression of Kir6.2 in mitochondria confers protection against hypoxic stress. J. Physiol. 577(Pt 1), 17-29 (2006).
- 3. Halperin, S.J. and Lynch, J.P. Effects of salinity on cytosolic Na<sup>+</sup> and K<sup>+</sup> in root hairs of Arabidopsis thaliana: In vivo measurements using the fluorescent dyes SBFI and PBFI. J. Exp. Bot. 54(390), 2035-2043 (2003).
- 4. Sabnis, R.W. Handbook of biological dyes and stains: Synthesis and industrial applications. John Wiley & Sons, Inc., Hoboken (2010).
- 5. Jezek, P., Mahdi, F., and Garlid, K.D. Reconstitution of the beef heart and rat liver mitochondrial K<sup>+</sup>/H<sup>+</sup> (Na<sup>+</sup>/H<sup>+</sup>) antiporter. Quantitation of K<sup>+</sup> transport with the novel fluorescent probe, PBFI. J. Biol. Chem. 265(18), 10522-10526 (1990).

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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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