TPEN

TPEN (Tetrakis-(2-pyridylmethyl)ethylenediamine) is an excellent heavy metal chelator while it does not affect calcium, magnesium, sodium, or potassium concentrations. Thus, TPEN is a useful tool to identify effects of heavy metals (zinc, iron, copper, manganese, etc.) on fluorescent indicators for other ions.

Product attributes

CAS number	16858-02-9
Cell permeability	Membrane permeant

Product Description

TPEN (Tetrakis-(2-pyridylmethyl)ethylenediamine) is an excellent heavy metal chelator while it does not affect Ca^2 , Mg^2 , Na , or K concentrations. Thus, TPEN is a useful tool to identify effects of heavy metals (Zn^2 , Fe^2 /Fe^3 , Cu^2 , and Mn^2 , etc.) on fluorescent indicators of Ca^2 , Mg^2 , Na , or K .

- Off-white solid soluble in ethanol, DMSO or DMF
- Store at 4 °C
- $C_{26}H_{28}N_6$
- MW: 425
- [16858-02-9]

As the indicator does not covalently bind to cellular components, it may be actively effluxed from the cell by organic anion transporters. The rate of efflux increases with temperature, and may vary between cell types, resulting in variable retention times of a few minutes to hours. Experiments using indicators in cells usually are performed within one or two hours of loading, but it may be possible to re-load cells with indicator if needed. The organic anion transporter inhibitor Probenecid (#50027) can be used to slow the rate of indicator efflux from cells.

References

1. J Biol Chem, 260, 2719 (1985), PMID: 3919006
2. Methods Cell Biol, 99, 113, (2021), DOI: 10.1016/B978-0-12-374841-6.00005-0