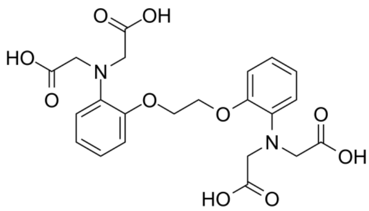
Data Sheet

Product Name:	BAPTA
Cat. No.:	CS-6069
CAS No.:	85233-19-8
Molecular Formula:	C22H24N2O10
Molecular Weight:	476.43
Target:	Reactive Oxygen Species
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB
Solubility:	DMSO : 25 mg/mL (52.47 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

BAPTA is a **calcium** chelator. BAPTA suppresses intracellular reactive oxygen species (**ROS**) levels. IC50 & Target: Ca^{2+} chelator[1] **In Vitro:** Regarding ROS generation, a Ca^{2+} specific chelator, BAPTA, suppresses ROS generation of Sodium lauryl sulfate (SLS)-exposed HaCaT keratinocytes[1]. Depolarization does not increase the resting open probability of the mechanoelectrical transducer (MET) current of $Tmc1^{Bth/Bth}$ OHCs, whereas raising the intracellular concentration of the Ca^{2+} chelator BAPTA causes smaller increases in resting open probability in Bthmutant outer hair cells (OHCs) than in wild-type control cells. In the presence of 0.1 mM BAPTA, nonsaturating bundle displacements causes the MET current to adapt in both genotypes, exactly as seen when 1 mM EGTA is used in the intracellular solution. In the presence of 10 mM intracellular BAPTA, the time-dependent MET current decline is abolished and the resting P_{open} increased to near 50% of the maximal MET current in OHCs from both $Tmc1^{+/+}$ and $Tmc1^{Bth/Bth}$ mice. The relation between the MET current and bundle displacement shows that increasing the intracellular BAPTA concentration from 0.1 to 10 mM significantly increased ($p<0.0001$) the resting Popen of the MET current in both $Tmc1^{+/+}$ (0.1 mM, 8±1.6%, n=4; 10 mM, 39.6±2.7%, n=5) and $Tmc1^{Bth/Bth}$ (0.1 mM, 10.4±2.2%, n=3; 10 mM, 46.5±9.9%, n=6). No significant differences are seen between the two genotypes for both BAPTA concentrations. However, 3 and 5 mM BAPTA are less effective in shifting the MET current-bundle displacement curves in $Tmc1^{Bth/Bth}$ than in $Tmc1^{+/+}$ OHCs. In $Tmc1^{+/+}$, increasing the BAPTA concentration from 0.1 mM to either 3 or 5 mM produces a highly significant increase in P_{open} (post hoc test from one-way ANOVA, $p<0.01$ and $p<0.001$, respectively); in $Tmc1^{Bth/Bth}$, the same comparison produced no or a much reduced increase in P_{open} (n.s. and $p<0.05$, respectively)[2].

References:

[1]. Mizutani T, et al. Sodium Lauryl Sulfate Stimulates the Generation of Reactive Oxygen Species through Interactions with Cell Membranes. J Oleo Sci. 2016 Dec 1;65(12):993-1001.

[2]. Corns LF, et al. Tmc1 Point Mutation Affects Ca2+ Sensitivity and Block by Dihydrostreptomycin of the Mechanoelectrical Transducer Current of Mouse Outer Hair Cells. J Neurosci. 2016 Jan 13;36(2):336-49.

CAIndexNames:

Glycine, N,N'-[1,2-ethanediylbis(oxy-2,1-phenylene)]bis[N-(carboxymethyl)-

SMILES:

O=C(O)CN(C1=CC=CC=C1OCCOC2=CC=CC=C2N(CC(O)=O)CC(O)=O)CC(O)=O

Caution: Product has not been fully validated for medical applications. For research use only.

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