Product Datasheet

PZL-A

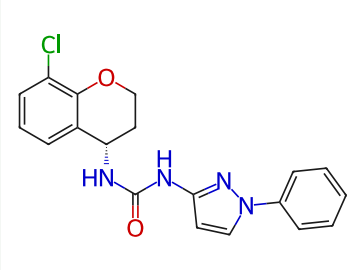
Catalog No. **BP-06916** · CAS **3068830-89-4** · Form **free base** · Physical state **solid** · Color **White to off-white** · Version **1.0** · Revision **2026-11-13**

FOR RESEARCH USE ONLY. NOT FOR HUMAN OR VETERINARY USE.

Target	Research area
DNA/RNA Synthesis; Oxidative Phosphorylation; Mitochondrial Metabolism	**Neurological Disease; Metabolic Disease**

Molecular formula	$C_{19}H_{17}ClN_4O_2$
Molecular weight	**368.8170**

STRUCTURE



DESCRIPTION

PZL-A is a activator of mitochondrial DNA (mtDNA) synthesis. PZL-A restores wild-type-like activity to mutant forms of polymerase γ (POLγ) with AC50 s of 160 and 20 nM for A467T and G848S. PZL-A activates mtDNA synthesis in cells, enhancing biogenesis of the oxidative phosphorylation machinery and cellular respiration. PZL-A is promising for relieving POLG disease and other severe conditions linked to depletion of mtDNA .

BIOLOGICAL ACTIVITY

In Vitro

PZL-A (0-100 μM, 10 min) dose-dependently activates the mutants (R232H, A467T, G848S, and W748S) (AC50: 20-200 nM), stabilizes the interaction with template, and interacts directly with the POLγ holoenzyme with increase of unfolding temperature[1].

PZL-A (1 μM, 0-15 min) stimulates DNA synthesis and enhances the rate of dNTP incorporation in mutants (R232H, A467T, G848S and W748S) without influence on exonuclease activity across a broad range of dNTP concentrations (0.08-10 μM)[1].

PZL-A (10 μM) interacting directly with the POLγ holoenzyme and increasing the unfolding temperature in mutants (R232H, A467T, G848S and W748S)[1].

PZL-A binds to a hydrophobic pocket between POLγA and POLγB with a C-shaped orientation, and the site is generally unaffected by most disease-causing mutations[1].

PZL-A (10 μM, 7.5-60 min) has a marked stimulatory effect, leading to DNA synthesis of longer double-stranded DNA (dsDNA) products [1].

PZL-A (1-3 μM, 7-14 days) strongly stimulates mtDNA repopulation rates with good tolerance in A467T/G848S and W748S/R232H mutant fibroblasts as well as quiescent fibroblasts[1].

PZL-A (0.00001-10 μM, 5-10 days) dose-dependently stimulates full-length mtDNA repopulation and increases 7S DNA levels in A467T/G848S and W748S/R232H mutant fibroblasts[1].

PZL-A (0.02-1 μM, 7-10 days) increases mtDNA levels and ameliorates OXPHOS activity in A467T/G848S and W748S/R232Hmutant fibroblasts and G848S/G848S mutant NSCs[1].

SOLUBILITY

soluble in DMSO

REFERENCES

[1]. Valenzuela S, et al. Small molecules restore mutant mitochondrial DNA polymerase activity. Nature. 2025 Jun; 642(8067):501-507.

Tel: +86 20 31130026 · Fax: +86 20 36822386 · tech@biochemprobe.com · www.biochemprobe.com
BiochemProbe is the catalog brand of Guangzhou Yuyuan Biotech Co., Ltd. · For research use only.
Lot CoA and SDS are separate documents.