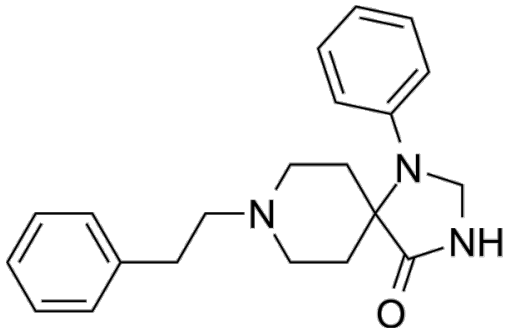
Product Data Sheet

Product Name: ZIP14-IN-1
Cat. No.: GC81575

Chemical Properties

Cas. No.	1048-17-5		
Formula	$C_{21}H_{25}N_3O$	M.Wt	335.44
Solubility	DMSO: 100 mg/mL (298.12 mM; ultrasonic and warming and heat to 60°C)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			



Background

ZIP 14-IN-1 (PPTD) is a selective and orally active ZIP14 inhibitor. ZIP 14-IN-1 inhibits ZIP14 while sparing ZIP8 (SLC39A8). ZIP 14-IN-1 efficiently blocks ZIP14-mediated uptake of multiple divalent metals (zinc, iron, manganese and cadmium). ZIP 14-IN-1 binds to a pocket formed at the dimer interface of ZIP14, obstructing the metal transport pathway. ZIP 14-IN-1 effectively reverses the consequent elevation of reactive oxygen species (ROS) and lipid peroxidation, attenuating metal-induced cytotoxicity. ZIP 14-IN-1 can be uses for cancer cachexia research [1].

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

In Vivo, ZIP 14-IN-1 (compound 14) (0.1 and 1.0 g/L, p.o. in drinking water, daily for 10 days) mitigates clinically important features of cachexia and highlight the effect potential of targeting ZIP14 in inflammatory or wasting diseases in a mouse cachexia model[1].

In Vitro, ZIP 14-IN-1 (compound 14) exhibits an IC_{50} of 8.1 μM for ZIP14-mediated zinc uptake in TREx-hZIP14, has no significant inhibition in TREx-hZIP8 cells at 37μM[1]. ZIP 14-IN-1 (0.03 to 50 μM) inhibits the uptake of all four metals (zinc, iron, manganese, and cadmium) with IC50s of 6.25μM and 6.06μM for Iron and Zinc, respectively, in TREx-cell lines and Xenopus laevis oocytes[1]. ZIP 14-IN-1 (0-50 μM, 24 h) blocks ZIP14-mediated metal influx and attenuated the associated cytotoxicity in TREx -hZIP14 cells and mouse myoblast cells[1]. ZIP 14-IN-1 (10 μM) suppresses ZIP14-mediated ROS and LPO production and inflammatory response in TREx-hZIP14 or TREx-hZIP8 cells[1].

References:
[1]. Hara T, et al. Matsukawa K, Ujihara S, Kawabe T, Taguchi H, Fujishiro H, Jenkitkasemwong S, Nunomura K, Lin B, Fukunaka A, Yoshigai E, Mishima K, Nakagawa S, Knutson MD, Imagawa H, Matsunaga N, Ohdo S, Hamachi I, Sakurai H, Fukada T. Discovery of a Selective Inhibitor of ZIP14 with Therapeutic Potential for Cancer-associated Cachexia. bioRxiv [Preprint]. 2025 Oct 23:2025.10.23.682519.

Caution: Product has not been fully validated for medical applications. For research use only.
Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA