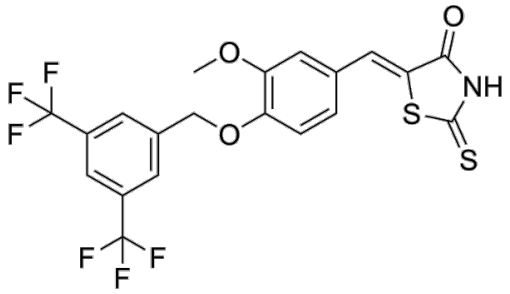
Product Data Sheet

Product Name: ZNF281-IN-1
Cat. No.: GC81551

Chemical Properties

Cas. No.			
Formula	$C_{20}H_{13}F_6NO_3S_2$	M.Wt	493.44
Solubility		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

ZNF281-IN-1 is a ZNF281 inhibitor. ZNF281-IN-1 disrupts the binding of transcriptionally active DNA-bound ZNF281 to the promoters of target genes including TRIM35 and ZEB1. ZNF281-IN-1 inhibits tumor cell proliferation, stabilizes P53 and upregulates PUMA to induce apoptosis, while triggering cellular senescence. ZNF281-IN-1 completely prevents Doxorubicin -induced cardiotoxicity (AIC), and enhances rather than impairs the antitumor efficacy of Doxorubicin. ZNF281-IN-1 completely blocks the distant metastasis of melanoma to the lungs. ZNF281-IN-1 can be used in the research of cardiotoxicity, lung cancer and metastatic melanoma [1].

Caution: Product has not been fully validated for medical applications. For research use only.
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In Vivo, ZNF281-IN-1 (Compound ZIM) (100 mg/kg; once daily for 10 weeks) completely prevents Doxorubicin-induced cardiac dysfunction. Its inhibitory effect on the growth of A549 lung cancer tumors is comparable to that of Doxorubicin, and it enhances tumor regression when used in combination with doxorubicin[1]. ZNF281-IN-1 (100 mg/kg; once daily for 10 weeks) inhibits tumor growth of primary metastatic melanoma and completely prevents lung metastasis in orthotopic mouse models[1].

In Vitro, ZNF281-IN-1 (Compound ZIM) inhibits proliferation, induces apoptosis, and promotes senescence in A549 non-small cell lung cancer cells by activating the P53-PUMA pathway[1].

References:
[1]. Lorenzana-Carrillo MA, et al. Selective translation of ZNF281 as part of the integrated stress response system has therapeutic relevance for cardio-oncology. Sci Transl Med. 2026;18(845):eadz7727.

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