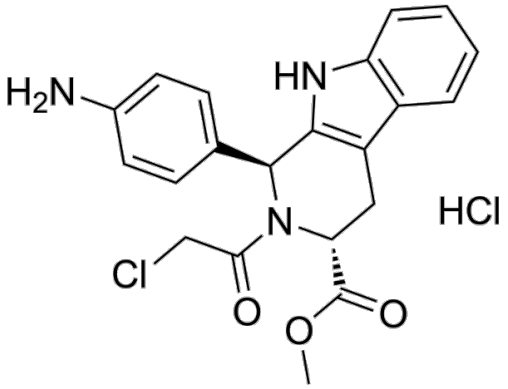
Product Data Sheet

Product Name: RSL3-NH2 hydrochloride
Cat. No.: GC81538

Chemical Properties

Cas. No.	3051815-40-5		
Formula	$C_{21}H_{21}Cl_2N_3O_3$	M.Wt	434.32
Solubility	DMSO: 100 mg/mL (230.24 mM; Need ultrasonic)	Storage	-20°C, protect from light, stored under argon
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

RSL3-NH2 hydrochloride is a GPX4 inhibitor and ferroptosis inducer. RSL3-NH2 hydrochloride triggers the iron-dependent cell death pathway associated with lipid peroxidation by inhibiting GPX4 activity. RSL3-NH2 hydrochloride exhibits significant cytotoxicity against colorectal cancer cells and effectively induces their ferroptosis. RSL3-NH2 hydrochloride can serve as a ADC payload for synthesizing a ADC and be used in colorectal cancer-related research [1].

Caution: Product has not been fully validated for medical applications. For research use only.
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In Vivo, ADC Conjugated from RSL3-NH2 hydrochloride and Bispecific Antibody: CDH17 x GUCY2C-RSL3-NH2 ADC (1 mg/kg; intravenous injection; once every 5 days; 7 doses total) induces significant regression of SW1463 colorectal cancer tumors and robust ferroptosis (elevated levels of MDA and 4-HNE) in nude mice[1]. CDH17 x GUCY2C-RSL3-NH2 hydrochloride ADC (1 mg/kg; intravenous injection; once every 5 days; 7 injections in total) induces significant regression of LS1034 colorectal tumors in nude mice and triggers strong ferroptosis (elevated levels of MDA and 4-HNE)[1]. CDH17 x GUCY2C-RSL3-NH2 hydrochloride ADC (1 mg/kg; intravenous injection; once every 5 days; 7 injections total) exhibits favorable safety in double-humanized BALB/c mice, with no hepatotoxicity or organ damage detected[1].

In Vitro, The ADC formed by conjugating RSL3-NH2 hydrochloride with a bispecific antibody, namely CDH17 x GUCY2C-RSL3-NH2 hydrochloride ADC, potently inhibits the proliferation of SW1463 and LS1034 cells and induces significant MDA and lipid ROS accumulation, with IC_{50} values of 4.97 μg/mL and 2.249 μg/mL at 72 h, respectively[1]. CDH17 x GUCY2C-RSL3-NH2 hydrochloride ADC (5 μg/mL; 72 h) exhibits bystander cytotoxicity against CDH17/GUCY2C-negative HT-29 cells when co-cultured with CDH17/GUCY2C-positive SW1463 or LS1034 cells[1].

References:
[1]. Zhang Y, et al. Development of a bispecific CDH17-GUCY2C ADC bearing the ferroptosis inducer RSL3 for the treatment of colorectal cancer. Cell Death Discov. 2025;11(1):347. Published 2025 Jul 28.

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