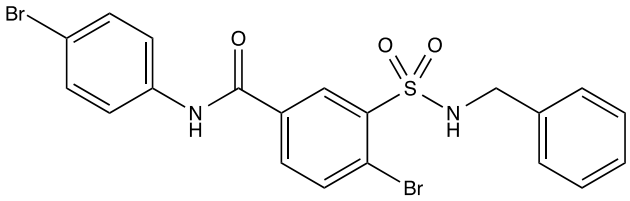
Catalog # 10-4099

RS-1

CAS# 312756-74-4

4-Bromo-N-(4-bromophenyl)-3-[[(phenylmethyl)amino]sulfonyl]benzamide

Lot # FBA5127



RAD51 is a strand exchange protein that is critical for the central steps in homologous recombination (HR) of DNA during double strand break repair. Because HR usually occurs without mutations, it is critically important for maintaining genomic stability. RS-1 is a small molecule that enhances the HR activity of RAD51 by promoting the formation of active presynaptic filaments during repair.[1] At low micromolar levels, it was able to increase cellular resistance of neonatal human dermal fibroblasts to the chemotherapeutic agent cisplatin. HR stimulation in various cell types could lead to temporary protection from DNA damaging agents. RS-1 has been used to exploit the RAD51 overexpression in cancerous cells by inducing lethality via genotoxic RAD51 protein complexes.[2] RS-1 has also been found to a potent enhancer of CRISPR- and TALEN- based gene editing.[3,4]

1) Jayathilaka *et al*. (2008), *A chemical compound that stimulates the human homologous recombination protein RAD51*; Proc.Natl.Acad.Sci.USA **105** 15848

2) Mason *et al*. (2014), *The RAD51-stimulatory compound RS-1 can exploit the RAD51 overexpression that exists in cancer cells and tumors;* Cancer Res. **74** 3546

3) Pinder *et al*. (2015), *Nuclear domain 'knock-in' screen for the evaluation and identification of small molecule enhancers of CRISPR-based genome editing;* Nucleic Acids Res. **43** 9379

4) Song *et al*. (2016), *RS-1 enhances CRISPR/Cas9- and TALEN-mediated knock-in efficiency;* Nat. Commun. **7** 10548

PHYSICAL DATA

Molecular Weight:	524.23
Molecular Formula:	$C_{20}H_{16}BrN_2O_3S$
Purity:	99% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (> 30 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at room temperature for up to 1 year from the date of purchase. Solutions in DMSO may be stored at -20°C for up to 3 months.

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