

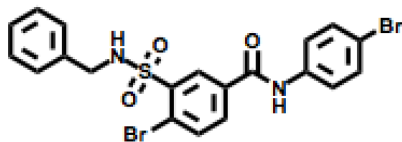


**Xcess Biosciences Inc.**  
3525 Del Mar Heights Rd, Suite #216  
San Diego, CA 92130-2122

http://www.xcessbio.com  
Phone: 1-858-866-8887  
Toll free: 1-866-706-2330  
Fax: 1-619-810-0718  
Email: info@xcessbio.com

## CRISPR Editing Enhancer – RS-1

**Chemical Name:** 3-(N-benzylsulfamoyl)-4-bromo-N-(4-bromophenyl)benzamide



Molecular Weight:	524.23
Formula:	C <sub>20</sub> H <sub>16</sub> Br <sub>2</sub> N <sub>2</sub> O <sub>3</sub> S
Purity:	≥98%
CAS#:	312756-74-4
Solubility:	DMSO up to 100 mM
Storage	Powder: 4 °C 1 year DMSO: 4 °C 3 months -20 °C 1 year

### Biological Activity:

RS-1 was previously characterized as a RAD51-Stimulatory compound and now found to be an HDR enhancer to enhance CRISPR/Cas9- and TALEN-mediated knock-in efficiency. It increases the knock-in efficiency by two- to five-fold at different loci, whereas NHEJ inhibitor SCR7 has minimal effects. RS-1 was applied for animal production and have achieved multifold improvement on the knock-in rates as well. RS-1 can stimulate the human homologous recombination protein RAD51 in various conditions. In PC3 prostate cancer cells, RS-1-induced lethality was accompanied by the formation of microscopically visible RAD51 nuclear protein foci occurring in the absence of any DNA-damaging treatment. Treatment with RS-1 promoted significant antitumor responses in a mouse model.

### How to Use:

**In vitro:** RS-1 was used at 15 μM final concentration in TALEN- or Cas9-mediated knock-in experiments.

**In vivo:** RS-1 was used at 7.5 μM for the in vivo knock-in animal production. RS-1 can be dosed to animal by IP injection at 110 mg/Kg once per day to get antitumor responses.

### Reference:

1. Jayathilaka K, et al. A chemical compound that stimulates the human homologous recombination protein RAD51. (2008) Proc Natl Acad Sci USA. 105(41):15848-53.
2. Mason JM, et al. The RAD51-stimulatory compound RS-1 can exploit the RAD51 overexpression that exists in cancer cells and tumors. (2014) Cancer Res. 74(13):3546-55.
3. Song J, et al. RS-1 enhances CRISPR/Cas9- and TALEN-mediated knock-in efficiency. (2016) Nat Commun. 7:10548.

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