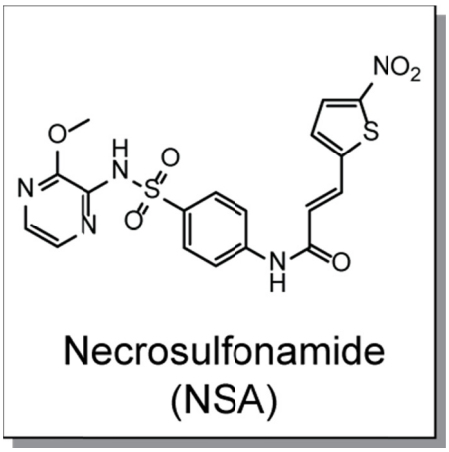
Product Specification Sheet

Product Name: Necrosulfonamide (NSA)

Catalog Number: C6327-2 (powder)
C6327-2s (10mM in DMSO)

Package Size: 2 mg



Technical information:

Chemical Formula:	$C_{18}H_{15}N_5O_6S_2$
CAS #:	432531-71-0
Molecular Weight:	461.47
Purity:	>96%
Formulation:	Light Yellow solid
Solubility:	Soluble in DMSO up to 50 mM
Chemical Name:	(E)-N-[4-[N-(3-methoxypyrazin-2-yl)sulfamoyl]phenyl]-3-(5-nitrothiophene-2-yl)acrylamide
Storage:	Store solid powder at 4°C desiccated; Store DMSO solution at -20°C.

Handling:

- For C6327-2 (powder), add 0.433 mL of DMSO to make 10 mM solution.
- For C6327-2s, before open the vial, centrifuge the vial at 500rpm x 1 min in a 50 mL conical tube to ensure full recovery of sample.

Biological Activity:

Necrosulfonamide (NSA) is a very specific and potent necrosis inhibitor with an IC50 less than 0.2 μM. It specifically blocks necrosis downstream of receptor-interacting serine-threonine kinase 3 (RIP3) activation. RIP3 is a key signaling molecule in the programmed necrosis pathway. Treating cells with NSA arrested necrosis at a specific step at which RIP3 formed discrete punctae in cells.

Different from Necrostatin-1, NSA does not inhibit the necrosis-induced RIP1 and RIP3 interactions. NSA targets MLKL, a critical substrate of RIP3 during induction of necrosis. It binds the N-terminal of MLKL, covalently modifies Cys86 of human MLKL, and prevents necrosome from interacting with its downstream effectors.

Reference:

1. Sun L., et al. Mixed Lineage Kinase Domain-like Protein Mediates Necrosis Signaling Downstream of RIP3 Kinase. Cell (2012), 148(1):213-227.
2. Wang Z., et al. The mitochondrial phosphatase PGAM5 functions at the convergence point of multiple necrotic death pathways. Cell (2012), 148(1):228-243

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