Product Datasheet

SS-3091

Catalog No. **BP-08732** · CAS **2756257-56-2** · Form **free base** · Physical state **solid** · Version **1.0** · Revision **2026-11-12**

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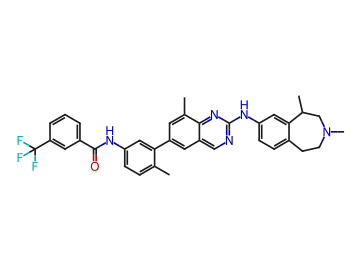
Target	Research area
Ras; Akt; ERK	**Cancer**

Molecular formula	$C_{36}H_{34}F_3N_5O$
Molecular weight	**609.6960**

STRUCTURE



DESCRIPTION

SS-3091 is a pan-KRas inhibitor active across KRas G12D, KRas G12C, KRas G12V, KRas G12S mutants, with minimal effects on non-KRas-driven cancer cells. SS-3091 binds to the KRas·ARaf interaction interface, destabilizes the complex, and attenuates KRas activity. SS-3091 suppresses phosphorylation of S6K, Akt, and ERK. SS-3091 reduces proliferation and decreases colony formation of cancer cells bearing KRas G12 mutations. SS-3091 can be used for the research of KRas-driven cancers .

BIOLOGICAL ACTIVITY

In Vitro

SS-3091 (20-100 μM) directly binds to purified KRASG12D protein, increasing its thermal stability[1].

SS-3091 potently inhibits the proliferation of KRASG12C 4B (IC50 = 27.70 nM), KRASG12C 4A (IC50 = 144.05 nM), KRASG12D 4B (IC50 = 238.15 nM), and KRASG12D 4A (IC50 = 575.00 nM) transformed Ba/F3 cells, with weaker activity against wild-type Ba/F3 cells (IC50 = 2374.00 nM)[1].

SS-3091 potently inhibits proliferation of KRASG12D, KRASG12C, KRASG12V, KRASG12S, and KRASG12A mutant cancer cell lines (IC50 values ranging from 39.23 nM to 1253.60 nM), with weaker or no activity against non-KRAS-driven cancer cell lines[1].

SS-3091 (50-300 nM) dose-dependently suppresses colony formation in PANC1, MIA-PaCa2, SW620, and A549 KRasG12 mutant cancer cell lines[1].

SS-3091 (0-10 μM) dose-dependently inhibits KRas downstream signaling (phosphorylation of S6K, Akt, and ERK) in ASPC1, MIA-PaCa2, SW620, and A549 KRasG12 mutant cancer cell lines[1].

REFERENCES

[1]. Zeng J, et al. Structure-Based Discovery of Active Pan-KRas Inhibitors Targeting G12D Mutants by Enhanced Sampling Simulations. J Phys Chem B. 2025;129(37):9283-9292. (https://pubmed.ncbi.nlm.nih.gov/40905485)

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