# BSP16

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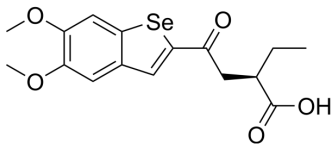
| **Cat. No.:** | HY-151264 |
| **CAS No.:** | 2727249-47-8 |
| **Molecular Formula:** | $C_{16}H_{18}O_5Se$ |
| **Molecular Weight:** | 369.27 |
| **Target:** | STING |
| **Pathway:** | Immunology/Inflammation |
| **Storage:** | Please store the product under the recommended conditions in the Certificate of Analysis. |




## BIOLOGICAL ACTIVITY

**Description**

BSP16 is a potent, orally active stimulator of interferon genes (STING) agonist. BSP16 can selectively stimulate the STING pathway. BSP16 can be used for the research of cancer[1].

**$IC_{50}$ & Target**

IC50 for STING: 9.24 μM (ISG-THP1 cells); 5.71 μM (ISGRAW264.7 cells)[1]

**In Vitro**

BSP16 (0.1-100 μM) can selectively stimulate the STING pathway in ISG-THP1 and ISGRAW264.7 cells with $EC_{50}$ values of 9.24 and 5.71 μM, respectively[1].

BSP16 (10, 25, 50 μM; 1, 3, 6 h) strongly activates STING signaling in human and mouse cells and binds STING as a homodimer[1].

BSP16 exhibits a promising absorption, distribution, metabolism, excretion and toxicity[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

RT-PCR[1]

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| Cell Line: | ISG-THP1 cells |
| Concentration: | 10, 25, 50 μM |
| Incubation Time: | 1, 3, 6 h |
| Result: | Robustly induced mRNA expression of target genes IFNβ, CXCL10, and IL6 in response to STING activation, in a time and concentration-dependent manner in ISGTHP1 cells. |

Western Blot Analysis[1]

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|---|---|
| Cell Line: | ISG-THP1 cells |
| Concentration: | 10, 25, 50 μM |
| Incubation Time: | 1, 3, 6 h |
| Result: | Rapidly increased the phosphorylation of TBK1 and IRF3 in a concentration-dependent manner. |

**In Vivo**

BSP16 (po, 50 mg/kg; iv, 5 mg/kg) has well lerated and excellent pharmacokinetic profile[1].

BSP16 (oral, 15 and 30 mg/kg, q3d; oral, 20 mg/kg, q5d) induces tumor regression and durable antitumor immunity[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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| Animal Model: | MC38 (colon carcinoma) syngeneic tumor model[1] |
| Dosage: | 15, 30 mg/kg |
| Administration: | oral, q3d |
| Result: | Exhibited tolerated and excellent antitumor efficacy, experienced complete tumor regression (CR) after day 21.<br>Resulted in robust induction of IFNB and IL6 (30 mg/kg). |

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| Animal Model: | CT26 (colon carcinoma) tumor model[1] |
| Dosage: | 20 mg/kg |
| Administration: | oral, q5d |
| Result: | Exhibited tolerated and induced tumor regression in all treated mice within 30 days.<br>Led to a substantial elevation of IFNB in the plasma in CT26 bearing mice. |

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| Animal Model: | Rats[1] |
| Dosage: | 5 mg/kg, 50 mg/kg |
| Administration: | oral and i.v |

Result:

| compd. | adm. | $C_{max}$(μg/mL) | $AUG_{0-\infty}$(h*μg/mL) | $t_{1/2}$(h) | $V_{ss}$(L/kg) | CL(L/h/kg) | F(%) |
|---|---|---|---|---|---|---|---|
| BSP16 | po(50 mg/kg) | 58.2 | 315.9 | 1.60 | 0.38 | 0.16 | 107 |
| | iv(5 mg/kg) | | 29.4 | 1.04 | 0.26 | 0.17 | |

## REFERENCES

[1]. Xi Feng, et al. Discovery of Selenium-Containing STING Agonists as Orally Available Antitumor Agents. J Med Chem. 2022 Sep 7.



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