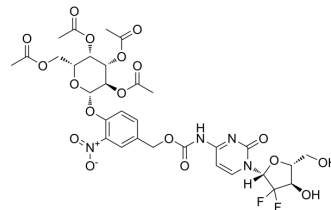


## SSK1

<b>Cat. No.:</b>	HY-138936
<b>CAS No.:</b>	2629250-69-5
<b>Molecular Formula:</b>	C <sub>31</sub> H <sub>34</sub> F <sub>2</sub> N <sub>4</sub> O <sub>18</sub>
<b>Molecular Weight:</b>	788.61
<b>Target:</b>	Apoptosis; p38 MAPK
<b>Pathway:</b>	Apoptosis; MAPK/ERK Pathway
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 200 mg/mL (253.61 mM; Need ultrasonic)																							
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent Concentration</th> <th>Mass</th> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>1.2681 mL</td> <td>6.3403 mL</td> <td>12.6805 mL</td> </tr> <tr> <td>5 mM</td> <td>0.2536 mL</td> <td>1.2681 mL</td> <td>2.5361 mL</td> </tr> <tr> <td>10 mM</td> <td>0.1268 mL</td> <td>0.6340 mL</td> <td>1.2681 mL</td> </tr> </tbody> </table>	Solvent Concentration	Mass	1 mg	5 mg	10 mg						Preparing Stock Solutions	1 mM	1.2681 mL	6.3403 mL	12.6805 mL	5 mM	0.2536 mL	1.2681 mL	2.5361 mL	10 mM	0.1268 mL	0.6340 mL	1.2681 mL
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	Please refer to the solubility information to select the appropriate solvent.																							
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 5 mg/mL (6.34 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 5 mg/mL (6.34 mM); Clear solution</li> </ol>																							

### BIOLOGICAL ACTIVITY

<b>Description</b>	SSK1, a senescence-specific killing compound, is a β-galactosidase-targeted proagent attenuates inflammation. SSK1 is activated by lysosomal β-galactosidase and selectively killed senescent cells through the activation of p38 MAPK and induction of apoptosis <sup>[1]</sup> .
<b>In Vitro</b>	<p>SSK1 (0.5 μM; 12-72 hours) activates the phosphorylation levels of both p38 MAPK and MKK3/MKK6 in senescent cells. SSK1 kills senescent cells through the activation of the p38 MAPK signaling pathway. SSK1 is able to induce mitochondrial DNA damage in senescent cells<sup>[1]</sup>.</p> <p>SSK1 (0.01-1 μM; 3 days) selectively and potently eliminates β-galactosidase-positive senescent cells within a wide therapeutic window<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Cell Proliferation Assay<sup>[1]</sup></p>

	Cell Line:	Primary mouse fibroblasts
	Concentration:	0.5 $\mu$ M
	Incubation Time:	12 hours, 24 hours, 36 hours, 48 hours, 72 hours
	Result:	Both p38 MAPK and MKK3/MKK6 were activated by phosphorylation in senescent cells.
<b>In Vivo</b>	SSK1 (0.5 mg/kg; i.p.; two days every week; for four weeks) could eliminate senescent cells and decrease senescence-associated markers in lung-injured mice <sup>[1]</sup> .	
	In aged mice (20-month-old), SSK1 (0.5 mg/kg; 3 days every 2 weeks for 8 weeks) effectively clears senescent cells in different tissues, decreases the senescence- and age-associated gene signatures, attenuates low-grade local and systemic inflammation, and restores physical function <sup>[1]</sup> .	
	MCE has not independently confirmed the accuracy of these methods. They are for reference only.	
	Animal Model:	Mice (3-6-month-old) were subjected to transtracheal injection of Bleomycin <sup>[1]</sup>
	Dosage:	0.5 mg/kg
	Administration:	Intraperitoneally injection; two days every week; for four weeks
	Result:	SSK1 significantly reduced the percentage of SA- $\beta$ -gal-positive cells in lung by 3.8-fold compared with that in vehicle-treated lung-injured mice

## REFERENCES

[1]. Yusheng Cai, et al. Elimination of senescent cells by  $\beta$ -galactosidase-targeted prodrug attenuates inflammation and restores physical function in aged mice. Cell Res. 2020 Jul;30(7):574-589.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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