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### SZABO-SCANDIC HandelsgmbH

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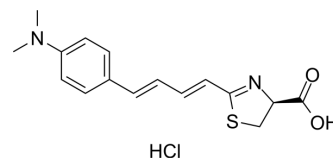
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## AkaLumine hydrochloride

<b>Cat. No.:</b>	HY-112641A
<b>CAS No.:</b>	2558205-28-8
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>19</sub> ClN <sub>2</sub> O <sub>2</sub> S
<b>Molecular Weight:</b>	338.85
<b>Target:</b>	Fluorescent Dye
<b>Pathway:</b>	Others
<b>Storage:</b>	-20°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (295.12 mM; Need ultrasonic)																					
	H <sub>2</sub> O : 50 mg/mL (147.56 mM; ultrasonic and warming and heat to 60°C)																					
	<table border="1"> <thead> <tr> <th rowspan="2">Solvent</th> <th rowspan="2">Mass</th> <th colspan="3">Concentration</th> </tr> <tr> <th>1 mg</th> <th>5 mg</th> <th>10 mg</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Preparing Stock Solutions</td> <td>1 mM</td> <td>2.9512 mL</td> <td>14.7558 mL</td> <td>29.5116 mL</td> </tr> <tr> <td>5 mM</td> <td>0.5902 mL</td> <td>2.9512 mL</td> <td>5.9023 mL</td> </tr> <tr> <td>10 mM</td> <td>0.2951 mL</td> <td>1.4756 mL</td> <td>2.9512 mL</td> </tr> </tbody> </table>	Solvent	Mass	Concentration			1 mg	5 mg	10 mg	Preparing Stock Solutions	1 mM	2.9512 mL	14.7558 mL	29.5116 mL	5 mM	0.5902 mL	2.9512 mL	5.9023 mL	10 mM	0.2951 mL	1.4756 mL	2.9512 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: ≥ 4 mg/mL (11.80 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 4 mg/mL (11.80 mM); Clear solution</li> </ol>																					

### BIOLOGICAL ACTIVITY

<b>Description</b>	AkaLumine hydrochloride is a luciferin analogue, with a K <sub>m</sub> of 2.06 μM for recombinant Fluc protein.
<b>IC<sub>50</sub> &amp; Target</b>	Km: 2.06 μM (recombinant Fluc protein) <sup>[1]</sup> .
<b>In Vitro</b>	In both LLC/luc and MDA-MB-231/luc cells treated with AkaLumine hydrochloride, the signal is maximal at lower concentrations (by 2.5 μM), whereas the bioluminescence generated by D-luciferin and CycLuc1 increase as concentrations increase further, not appearing to reach a maximal signal even at 250 μM <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
<b>In Vivo</b>	AkaLumine hydrochloride displays greatly enhanced signals emanating from metastasis in the lung, as demonstrated by 8.1-

fold higher with AkaLumine hydrochloride as compared with D-luciferin administration. To evaluate the advantage of AkaLumine hydrochloride over CycLuc1 in detecting targets in deep tissue, bioluminescence images are compared between AkaLumine hydrochloride- and CycLuc1-treated mice 15 min after intravenous injection of LLC/luc cells at the dose of 5 mM, which is the maximum concentration of CycLuc1 due to its low water solubility. AkaLumine hydrochloride exhibits 3.3-fold increase in detection sensitivity of disseminated cancer cells in the lung compared with CycLuc1. The advantage of AkaLumine hydrochloride is further confirmed by imaging the same mice bearing lung metastasis after intraperitoneal injection of 5 mM substrates in order of CycLuc1 and AkaLumine hydrochloride, and in the inverse order at an 8-h interval. AkaLumine hydrochloride displays about fourfold increase in signals from lung metastasis compared with CycLuc1<sup>[1]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## CUSTOMER VALIDATION

- Stem Cell Res. October 2021, 102532.

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## REFERENCES

[1]. Kuchimaru T, et al. A luciferin analogue generating near-infrared bioluminescence achieves highly sensitive deep-tissue imaging. Nat Commun. 2016 Jun 14;7:11856.

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

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