# Data Sheet (Cat.No.TJS1779)

TargetMol
A DRUG SCREENING EXPERT

Protosappanin A

## Chemical Properties

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|---|---|
| CAS No.: | 102036-28-2 |
| Formula: | C15H12O5 |
| Molecular Weight: | 272.25 |
| Appearance: | N/A |
| Storage: | 0-4℃ for short term (days to weeks), or -20℃ for long term (months). |

## Biological Description

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|---|---|
| Description | Protosappanin A has anti-oxidative/nitrative activities on brain immune and neuroinflammation through regulation of CD14/TLR4-dependent IKK/IÎºB/NF-Îº B inflammation signal pathway; it exerts anti-neuroinflammatory effect by inhibiting JAK2-STAT3 pathway in lipopolysaccharide-induced BV2 microglia. Protosappanin A induces immunosuppression of rats heart transplantation targeting T cells in grafts via NF-kappaB pathway. Protosappanin A and protosappanin B have antimicrobial activity, they show both alone activities and resistance reversal effects of amikacin and gentamicin against MRSA. Protosappanin A shows strong effect against HIV-1 IN with an IC50 value of 12.6 uM. |
| Targets($IC_{50}$) | HIV-1 IN: None<br>IFN-γ: None<br>IkB: None<br>IKK: None<br>IL Receptor: None<br>JAK: None<br>NADPH-oxidase: None<br>NF-κB: None<br>NO: None<br>ROS: None<br>STAT: None<br>TLR: None<br>TNF-α: None |

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|---|---|
| In vitro | This study aims to investigate antimicrobial ingredients from Sappan Lignum and to evaluate their synergy on methicillin-resistant Staphylococcus aureus strains with antibiotics. METHODS AND RESULTS: Bioactivity-guided phytochemical procedures were used to screen the active compounds. Minimum inhibitory concentrations (MICs) and minimum bactericidal concentrations (MBCs) were assayed by broth microdilution. The synergy was evaluated through checkerboard microdilution and loss of viability assays. Protosappanin A (PsA) and Protosappanin B (PsB) were identified from Sappan Lignum extracts. They showed active against both S. aureus and MRSA with MIC or MIC50 at 64 (PsA) and 128 (PsB) mg/L alone. When they were used in combination with antibiotics, they showed best synergy with amikacin and gentamicin with MIC50 (mg/L) of amikacin reduced more significantly from 32 to four (with PsA) and eight (with PsB), and the fractional inhibitory concentration index (FICI) ranged between 0.078 and 0.500 (FICI50 = 0.375). Moreover, the resistance of MRSA towards amikacin and gentamicin could be reversed by the Clinical and Laboratory Standards Institute criteria. The combined bactericidal mode could as well be synergy. PsA and PsB showed very low cytotoxicity in comparison with their promising activity against MRSA. CONCLUSIONS: Protosappanin A and Protosappanin B showed both alone activities and resistance reversal effects of amikacin and gentamicin against MRSA, which warrant further investigations for potential combinatory therapy of MRSA infection. |

## Solubility Information

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|---|---|
| Solubility | < 1 mg/ml refers to the product slightly soluble or insoluble |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 3.673 mL | 18.365 mL | 36.731 mL |
| 5 mM | 0.735 mL | 3.673 mL | 7.346 mL |
| 10 mM | 0.367 mL | 1.837 mL | 3.673 mL |
| 50 mM | 0.073 mL | 0.367 mL | 0.735 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

1. Antimicrobial activity and synergy of antibiotics with two biphenyl compounds, protosappanins A and B from Sappan Lignum against methicillin-resistant Staphylococcus aureus strains. J Pharm Pharmacol. 2015 Oct;67(10):1439-47.



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