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**Product Data Sheet**

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Product Name: Methysticin (DL-Methysticin)

Cat. No.: GC30985

**Chemical Properties**

Cas. No. 20697-20-5

SMILES O=C1C=C(OC)CC(/C=C/C2=CC=C(OCO3)C3=C2)O1Formula  $C_{15}H_{14}O_5$  M.Wt 274.27

Solubility Soluble in DMSO Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure **Protocol****Cell experiment:**

The mouse hepatoma cell line Hepa1c1c7 and AhR-deficient cell line CRL-2710 are grown in  $\alpha$ -MEM supplemented with 10% FBS and antibiotics (50 U/mL Penicillin and 50  $\mu$ g/mL Streptomycin) and maintained at 37°C in a humidified atmosphere with 5% CO<sub>2</sub>. The cytotoxicity of kava extract and kavalactones (e.g., Methysticin; 0.195313, 0.390625, 0.78125, 1.5625, 3.125, 6.25, 12.5, 25, 50, and 100  $\mu$ M) is assessed using the tetrazolium reduction cell viability assay (MTS). After treatment for 24 h, the MTS assay is performed. The viability of the cells is calculated by comparing the absorbance of the treated cells with that of the DMSO controls[1].

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

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### Animal experiment:

Mice[2] Treatment of transgenic APP/Psen1 mice (n=6) is started at an age of 25 weeks and lasted for 27 weeks. The animals are treated once a week with 6 mg/kg bodyweight Methysticin (0.15 mg/25 g mouse, corresponding to 100  $\mu$ L of working solution). Control groups consist of wild type mice (n=6) and APP/Psen1 mice (n=6) which are vehicle-treated with an identical treatment regimen. At 52 weeks, the animals undergo behavioral testing and are euthanized afterwards. The brain hemispheres are separated to obtain both formalin-fixed tissue for paraffin embedding and tissue for biochemical analysis from the same animal. The left hemisphere is further dissected to separate the hippocampus from the remaining brain tissue. The fresh tissue is snap-frozen and immediately stored at -80°C. To induce Nrf2/ARE in the ARE-luciferase reporter gene mice, the mice receive 6 mg/kg bodyweight of Methysticin once. The mice's hippocampus, cortex, midbrain, and cerebellum are prepared and immediately snap-frozen in liquid nitrogen 6 h after Methysticin treatment[2].

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### References:

- [1]. Li Y, et al.  
Methysticin and  
7,8-  
dihydromethysticin  
are two major  
kavalactones in  
kava extract to  
induce CYP1A1.  
Toxicol Sci. 2011  
Dec;124(2):388-  
99.
- [2]. Fragoulis A, et  
al. Oral  
administration of  
Methysticin  
improves cognitive  
deficits in a mouse  
model of  
Alzheimer's  
disease. Redox  
Biol. 2017  
Aug;12:843-853.

### Background

Methysticin is a natural kavalactone from the kava plant, *P. methysticum*. It enhances the binding of bicuculline methochloride at the  $\gamma$ -aminobutyric acid (GABA) receptor GABA<sub>A</sub> at 0.1  $\mu$ M.<sup>1</sup> Methysticin inhibits the cytochrome P450 (CYP) isoforms CYP2C9 and CYP2D6.<sup>2</sup>

1. Boonen, G., and Herberlein, H. Influence of genuine kavapyrone enantiomers on the GABA<sub>A</sub> binding site. *Planta Med.* 64(6):504-506(1998) 2. Murray, M. Toxicological actions of

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plant-derived and anthropogenic methylenedioxyphenyl-substituted chemicals in mammals and insectsJ. Toxicol. Environ. Health B Crit. Rev.15(6)365-395(2012)

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