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Silymarin

Cat. No.:	HY-N7073
CAS No.:	65666-07-1
Target:	SARS-CoV
Pathway:	Anti-infection
Storage:	Powder -20°C 3 years In solent -80°C 6 months -20°C 1 month

SOLVENT & SOLUBILITY

In Vitro	DMSO : 100 mg/mL (Need ultrasonic)
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 3 mg/mL (Infinity mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Silymarin is an extract of the milk thistle (Silybum marianum). Silymarin is an effective SARS-CoV-2 main protease (M^{pro}) inhibitor. Silymarin can significantly reduce tumor cell proliferation, angiogenesis as well as insulin resistance. Silymarin has the chemopreventive effect on hepatocellular carcinoma (HCC). Silymarin has the potential for COVID-19 research[1][2][4].

In Vitro

Silymarin (0-120 μg/ml; 24 hours) inhibits AGS cell viability, the viability of AGS cells is 77.9% in the presence of 20 μg/ml silymarin, 71.5% at 40 μg/ml, 59.8% at 60 μg/ml, 44.5% at 80 μg/ml, 35.3% at 100 μg/ml and 33.9% at 120 μg/ml[1].
Silymarin (40-80 μg/ml; 24 hours) inhibits the migration of the AGS cells in a concentration-dependent manner. It inhibit migration of AGS cells 59.4% at 40 μg/ml and 21.7% at 80 μg/ml,respectively[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	AGS cells
Concentration:	20 μg/ml, 40 μg/ml, 80 μg/ml, 100 μg/ml and 120 μg/ml
Incubation Time:	24 hours
Result:	Indicated a significant concentration-dependent inhibitory effect on AGS cells starting at 20 μg/ml.

In Vivo

Silymarin (oral gavage; 10, 20, 50, 100, and 200 mg/kg) decreases the immobility time in a dose-dependent manner in forced swimming test (FST). It also lowers the immobility measure dose-dependently in tail suspension test (TST). Additionally, 50% of maximum response (ED_{50}) of Silymarin is around 10 mg/kg. The dose 100 mg/kg proved the most effective dose in both the tests[3].

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

CUSTOMER VALIDATION

- Molecules. 2021, 26(5), 1409.
- Naunyn Schmiedebergs Arch Pharmacol. 2023 Apr 13.
- Biomed Chromatogr. 2022 Jun 16;e5427.
- Indian J Exp Biol. 2022 Dec.

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REFERENCES

[1]. Féher J, et al. Silymarin in the prevention and treatment of liver diseases and primary liver cancer. Curr Pharm Biotechnol. 2012 Jan;13(1):210-7.

[2]. Sung-Hyun Kim, et al.Silymarin induces inhibition of growth and apoptosis through modulation of the MAPK signaling pathway in AGS human gastric cancer cells. Oncol Rep. 2019 Nov;42(5):1904-1914.

[3]. Mina Khoshnoodi, et al. Possible involvement of nitric oxide in antidepressant-like effect of silymarin in male mice. Pharm Biol. 2015 May;53(5):739-45.

[4]. Anna Maria Sardanelli, et al. SARS-CoV-2 Main Protease Active Site Ligands in the Human Metabolome. Molecules 2021, 26(5), 1409.

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