

Activity of *Neerium indicum* against COVID 19 through deactivation of papain-like protease of SARS CoV-2 (6W9C)

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Abstract: An in-silico study was performed to determine the activity of *Neerium indicum* against COVID 19. Molecular docking using Biovia Discovery Studio was performed to identify the phytochemical responsible to deactivate papain-like protease of SARS CoV-2 (6W9C) enzyme. It was found that = helped to prevent COVID 19.

Introduction: *Neerium indicum* is known for its medicinal activities. *Neerium indicum* has many medicinal properties like bitter, acrid, astringent, anthelmintic, aphrodisiac, stomachic, febrifuge, diuretic, emetic, expectorant, cardio tonic, anticancer etc which is used in the treatment of cardiac asthma, renal and vesicle calculi, chronic stomach, skin related problems, snake bites joint pains, leprosy, cancer, ulcers etc. Leaves and flowers are also used to treat malaria. Leaves and bark is treated as insecticide, rat poison and parasitic.

The plant is classified as follows:

Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Gentianales
Family	Apocynaceae
Genus	<i>Neerium</i>
Species	<i>indicum</i>

Major phytochemicals present in the plant are:

- Theobromine
- Daidzein
- Caffeine
- Limonene

One of the major enzymes required for the survival of the organism causing COVID 19 is papain-like protease of SARS CoV-2 (6W9C) enzyme. The objective of this work is to find the phytochemical that can deactivate the enzyme, thereby preventing the physiological activity of the organism.