

VIRGIN COCONUT OIL (LAURIC ACID)

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Introduction

Virgin coconut oil (VCO) is extracted from the *Cocos nucifera* plant by the wet milling process and has been, for many years, proven to have antiviral effects. Lauric acid and its derivatives monolaurin, and sodium lauryl sulfate (which is also known as sodium dodecyl sulfate) compose 50% of coconut oil and are responsible for coconut oil's antiviral and immunomodulatory effects.¹

Mechanism of Action

Three mechanisms have been proposed to explain the antiviral activity of lauric acid and monolaurin: (1) they cause disintegration of the virus envelope; (2) they can inhibit late maturation stage in the virus replicative cycle (3) they can prevent the binding of viral proteins to the host cell membrane.^{1,2,3,4,5,6}

As an immunomodulator, VCO has been shown to increase CD4 counts⁷ and to increase the ratio of IFN γ mRNA to IL-4 mRNA.⁸

Clinical Studies

There are ongoing clinical studies on the use of VCO as an oral supplement for COVID-19 in the Philippines as initiated by the Department of Science and Technology (DOST)

Recommended Dose

As a topical agent, coconut oil can be used ad libitum. As an oral supplement, no standard dose has been established.

Adverse Effects

Coconut oil and its derivatives have been shown to be safe in humans and animals.¹

Conclusion

More clinical trials are needed to establish its efficacy for COVID-19.

REFERENCES:

1. Dayrit, F. and M. Newport. The Potential of Coconut Oil and its Derivatives as Effective and Safe Antiviral Agents Against the Novel Coronavirus (nCoV-2019) <https://www.icp.org.ph/2020/01/the-potential-of-coconut-oil-and-its-derivatives-as-effective-and-safe-antiviral-agents-against-the-novel-coronavirus-ncov-2019/> 2020 Jan.
2. Piret, J., A. Desormeaux, MG Bergerson. Sodium Lauryl Sulfate, a microbicide effective against enveloped and non-enveloped virus. *Current Drug Targets*. 2002, 3:17-30.
3. Hierholzer, J., J. Kalara. In vitro effects of monolaurin compounds on enveloped RNA and DNA viruses. *Journal of Food Safety*. (4):1 - 12. 1981 October.
4. Bartolotta, S., C.C. Garcia, N. A. Candurra, and E. B. Damonte. Effects of fatty acids on arenavirus replication: Inhibition of virus production by lauric acid. *Arch Virol*. 146:777-790. 2001
5. Thormar. H. et al. Inactivation of enveloped viruses and killing of cells by fatty acids and monoglycerides. *Antimicrobial Agents and Chemotherapy* 31(1): 27-31. 1987 January.
6. Horning, B. et al. Lauric acid inhibits the maturation of vesicular stomatitis virus (VSV). *J General Virology* (75): 353-361. 1994
7. Widhiarta, DK. Virgin coconut oil for HIV positive people. *Cord* 34(1). 2016
8. Wallace FA, Miles EA, Evans C, Stock TE, et al. Dietary fatty acids Influence the production of Th1 but not Th2 type cytokines. *J Leukoc Biol*. 69(3): 449-57. 2001 Mar.