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<http://www.ijhmcr.com>**ORIGINAL ARTICLE****INTERNATIONAL JOURNAL  
OF HEALTH MEDICINE AND  
CURRENT RESEARCH****COMPOUNDS THAT WORK FOR CORONA VIRUS, COVID - 19, MERS SARS, HIV / AIDS  
(PYRIDINE/PYRIDINIUM, PHYTOL, SQUALENE, DIMETHYL, AVIGAN (FAVIPIRAVIR),  
CHLOROQUINE)**

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08<sup>th</sup> June, 2020.Accepted 10<sup>th</sup> August, 2020.Published online 30<sup>th</sup> Sept, 2020.**Key words:***Piperidine, Dimethyl, Squalene, Phytol, Chloroquin, COVID - 19, HIV / AIDS.***\*Correspondence to Author:****Arend L. Mapanawang**College of Health Sciences  
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**ABSTRACT**

Virus infection until now is still a problem in the world, this is caused by one of which is an antiviral. Various antiviral researches have been developed both synthetically, and herbal anti-virus supplements continue to be developed.

**Research purposes :** this is to find out the mapping of the use of antivirals in diseases caused by viruses such as Corona Family, SARS Cov, Mers Cov, COVID-19, HIV / AIDS, Hepatitis, Dengue, etc.

**Benefits of Research :** this is to get an idea of the development of antivirals both in synthesis and herbs that are being used both synthetic and herbal supplements globally.

**Research methods :** Reviewing articles and displaying the results of In vitro and In Vivo tests of compounds that act as antivirals.

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**Research result** : showed that the most piperidine compound was used as an antiviral in Cov - MERS Cov SARS. HIV / AIDS, Hepatitis, Dengue, Cancer, then the compound Dimethyl sulfoxide for herpes and viruses, antimicrobials, phytol compounds for immunostimulants, antimicrobials, squalene compounds for vaccine viruses, amino acids for HIV vaccines. Chloroquine compound is used for COVID - 19. In vitro Test Results Herbal supplements contained in the compound Golobe (*Zingiberaceae*), pyridine, phytol, squalene, and in the Red Sea Star against the compound Dipidone.

**Conclusion** compounds of Dipidone, Dimethyl, Squalene, Phytol, and chloroquine are a new hope in the treatment of diseases for viruses such as COVID - 19, MERS, HIV / AIDS, Hepatitis, Herpes, Dengue, etc.

## Introduction

Viral infections are still a problem in the world, especially the problem of drugs or antivirus. Viral disease has recently become a pandemic world problem because of COVID-19. Various COVID-19 countermeasures, which from January 2020 to early April 2020. Has claimed quite significant casualties with 2 million positive infections and has died above 50,000 patients. Various attempts to research the discovery of drugs, vaccines to fight the ferocity of SARS Cov 2 or COVID-19.<sup>(1,2,3)</sup>

The findings and use of antiviral drugs in various countries are also diverse in China using Qloroquinon and Tamiflu. In the USA, use Qloroquinon. In Spain using Anti HIV/AIDS. The research was conducted to

find the best formulations to ward off Corona. COVID-19 is the world pharmacy continues to develop antivirus from natural materials, herbal health supplement as developed STIKMAH Tobelo, Halmahera Indonesia, by developing the health supplement from the material Golobe (*Zingiberaceae*), Daun Pangi (Pangiar), the Red Seastar where the three herbs contain diperidone, phytol, dimethyl, squalene, as a supplement that has been used in-person HIV/AIDS with good results.<sup>(3,4,5)</sup> At Universitas Airlangga Surabaya develop Immunostimulator Supplement with ginger, turmeric, and Temulawak, as well as Supplement Nitrit Oxid (No) at Universitas Indonesia (UI) and Agricultural Institute Bogor (IPB), Develop red guava as antivirus Supplement<sup>(2,3,4,5,6)</sup>

Anuska C GK *et al.* In his research on the inhibition of piperidone against SARS Cov and MERS CoV gave good results because of the found functional inhibition, and this can be done further research for the effects of piperidone on COVID-19 which is currently a global pandemic of SARS Cov-2 A new hope is to find a variety of herbal ingredients to be used as anti-corona virus supplementation as well as HIV / AIDS and hepatitis.<sup>(3,4)</sup>

Takumi *et al.* examined the benefits of piperidone for HIV / AIDS, which in the compound Lamivudine contains piperidone. Where HIV / AIDS for 25 years is still a problem because it has not to cure HIV / AIDS in the world. James Chan *et al.* developed Dimethyl for anti-microbial, James Aquiler *et al.* developed dimethyl as an antiherpes. Rosmi Roy *et al.* developed the phytol

compound in developing immunostimulators for HIV / AIDS patients. Also, Mohamad Tank researched Phytol for antimicrobial disinfectants. Christofel B. Fox *et al.*, WHO, also developed squalene for the H1N1 vaccine and Antrax Virus.

### Research methods

Conducted this research for reviewing by making a mapping review of various articles that have been published from multiple studies in the world using research data for each section by attaching compounds that play a role for certain viruses, for example, piperidine compounds used for Corona Virus (SARS Cov and MERS Cov) Hepatitis, HIV /

### Discussion

Antivirus compounds have been more developed since the previous century. They were popping sharing viruses in the world. Coronavirus, HIV / AIDS, Hepatitis, H1N1, Anthrax and other types, made the company

AIDS carried out data collection at various sources. By using the data in the article being reviewed.

This research lasted for January 2020 Until April 2020, when the Pandemic COVID-19 epidemic broke out in 208 countries in the world.

In the research review of this article, it can give an idea that for handling severe cases of various infections. Virus mutants such as from Corona Virus to SARS Cov 2 (COVID - 19) can be carried out further research with the situations that hit each country and even claimed lives in almost every country that currently has 50,000 deaths.

researchers develop various antiviral compounds such as Piperidone, Dimethyl, Phytol, Squalene in inhibiting infections and replication of viruses, especially RNA, Corona, and HIV / HIV viruses. AIDS as the table below:

### Virus Inhibiting Compounds

**Table 1.** Pyridine for Viruses, HIV / AIDS, Hepatitis

No	Name	Agents	Disease	Journal
1	Takumi <i>et al</i>	Pyridine / Pyridinium	HIV / AIDS	Science Direct 2015 21 (16); 3226-329
2	Mancelo DF <i>et all</i>	b-23-pyridine	HIV / AIDS	Archives Of Virology, 2017; 162 (6); 1-11
3	Steven M <i>et al</i>	Pyridine oxide	HIV / AIDS	Antimicroba Agents Chemoter 2013; 47 (9) 2951-7
4	Tao Wang <i>et al</i>	Piperidine Amida current Assignee UK	HIV / AIDS Inhibitors	Ltd. Publication, US. 2016

5	Xiao - Zhong <i>et al</i>	3-methyl piperidine - 2-one	HIV / AIDS	JZuis Zolbi, 2016; 17: 163-170
6	Anuska CGK <i>et al</i>	Piperidine	MERS Cov- SARS Cov	Eurj Med Chem 2018; 150: 334-346
7	Ravik <i>et al</i>	Benzylidric Piperidone	Cancer	Cancer Cel 2013; 24 (6): 791-805 PCT 2020.
8	Hanberilona	Piperidone derivatives	Medical uses	PCT 2020.
9	Hasaac Osman <i>et al</i>	3,5-bis (Oliledone) -4- piperidone	Dengue	Acta porusin 13.2017: 7 (4): 427- 484)

Pyridine has been used as an antiviral for a long time, one of which is the pyridine compound, the antiviral drug Lamivudine for the treatment of HIV / AIDS, Hepatitis, MERS CoV, SARS CoV, HPV, Cancer, Dengue, etc. Pyridine inhibits the replication of Viruses such as the Transcriptase Enzyme in HIV / AIDS and inhibits the protein chain in MERS CoV and SARS CoV.

**Table 2.** Dimethyl Sulfoxide (DMSO)

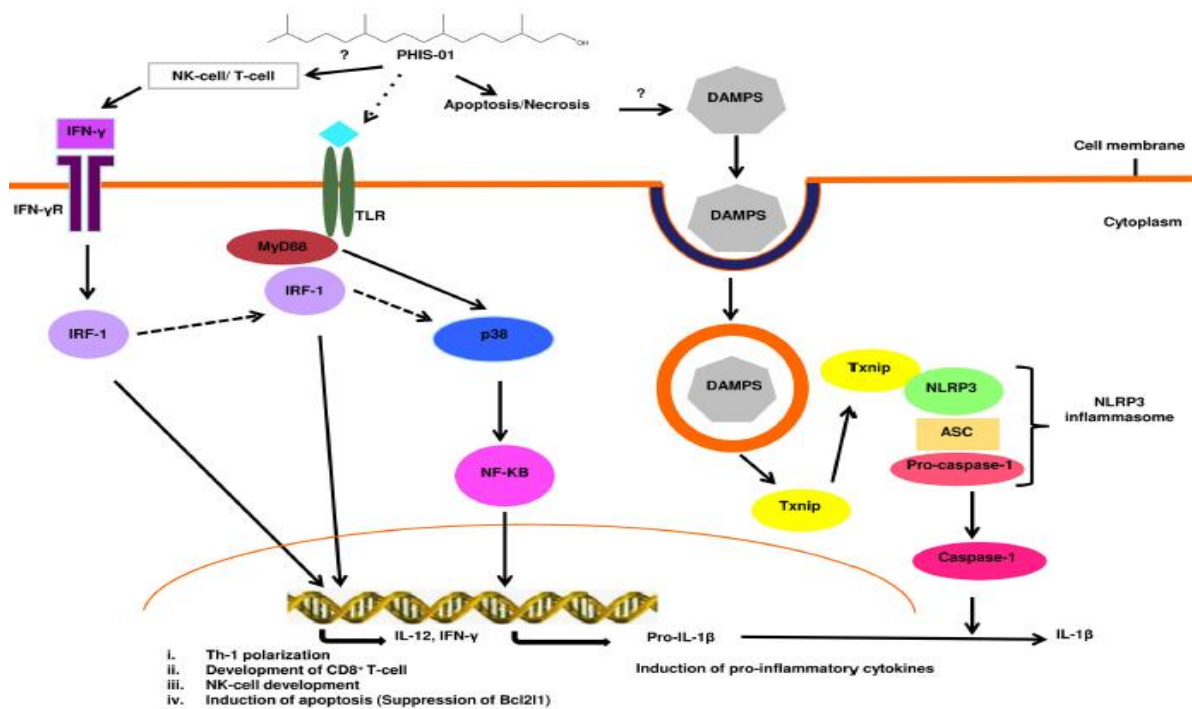
No	Name	Agents	Disease	Journal
1	James Chan <i>et al</i>	Dimethyl Sulfoxide (DMSO)	Antimicrobial	American Microbiology Society 1968: 16 (10) 1625-1626
2	JS Aquilar <i>et al</i>	Dimethyl Sulfoxide (DMSO)	Herpes Virus	BMC Infection, 2002: 9: 1421- 2334.
3	Field AK <i>et al</i>	Hydroxymethyl / Methyl guanine	Herpes Virus replication	Procnat Century Century SCI, 1983: 80 (13) 4139-43.

Dimethyl has been used in cases of viruses such as in herpesvirus replication, antimicrobial, inhibition of Herpes virus replication, not to become more severe infections.

**Table 3.** Phytol and Benefits of Virus Obstacles

No	Name	Agents	Disease	Journal
1	Roshni Roy <i>et al</i>	Phytol	Immunostimulato r	2012 Immunol 22 March
2	Mohammad Taghi <i>et al</i>	Phytol	Disinfectant / antimicrobial	Environ - health erg art management Journal 2015; 2 (1): 13-16

Phytol is a compound that is very instrumental in inhibiting the virus, as well as one of the immunostimulant compounds or immunomodulators. Phytol plays a role in increasing immunity, especially in cases that occur, such as in viral infections and other diseases.



**Figure 1. Possible Signal Pathways Activated by Phytol-Based Immunostimulants**

**Table 4. Squalene and its Benefits for Viruses**

No	Name	Agents	Disease	Journal
1	Christopher B. Fox <i>et al</i>	Squalene	Parenteral Vaccine, Anthrax, and H1N1	Molluculer, 2009 14 (9): 3286-3312
2	WHO	Squalene	Vaccine, Anthrax, and H1N1	2008
3	Wikipedia	Squalen	Vaccine Adjuvant	Access 2019

Squalene has been used as a vaccine adjuvant, Squalene is known only in salmon oil, but it turns out that squalene is also obtained from herbal ingredients such as the *Pangiar* Leaf which is the highest compound in Pangiar leaves, 21.25%.

**Table 5.** Amino acids play a role in viruses

No	Name	Agents	Disease	Journal
1	Bruce Welker	Amino acid	HIV Vaccine	Fexafeus 2010 detik.Com 2019
2	Asep Candoa	Amino acid	HIV Vaccine	Kompas Daily 11/09/2010 2019

Amino acids are compounds that play a role in viral infections, especially in the manufacture of virus vaccines

**Table 6.** Albumin For Role in Viruses

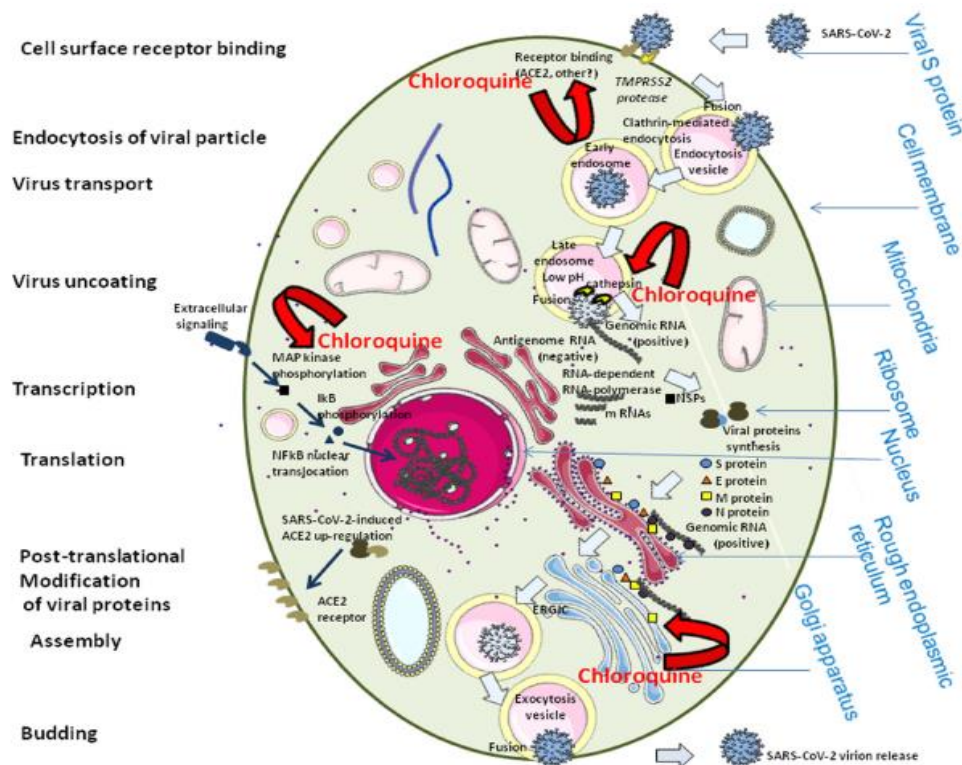
No	Name	Agents	Disease	Journal
1	Ristiana <i>et al</i>	Albumin	HIV	FK UNHAS 2008 Access 2019
2	Beuni vargas <i>et al</i>	S-pattways	HIV / AIDS	Antimicrobial Agent and Chemotherapy 2019; 63 (3): 1744-18
3	Naidi Yong han maybe Shen	Autophagy process	COVID-19 (SARS Cov - 2)	Int. Journal of Biology and Science 2020.

Albumin in some studies can be used in cases of virus infection, HIV, AIDS, autophagy, also in some researches used for COVID-19 (SARS CoV 2).

**Table 7.** Lamivudine and Qloroquinon

No	Name	Agents	Disease	Journal
1	Wikipedia	Lamivudine	HIV / AIDS, Hepatitis	2/10/2009
2	Christian A. Devauux <i>et al</i>	Choloroquinon	Corona Virus (COVID - 19)	International Journal of Antimicrobial Agent 2020. 31. March

Lamividune, in its use for the treatment of viruses such as HIV / AIDS and Hepatitis, has long been used. Lamivudine became the main line of HIV / AIDS treatment. Qloroquinon, which has been used for malaria patients, is currently being tested in COVID-19 cases in several countries such as China and the USA and several other countries. Although WHO has not recommended Qloroquinon, but in the USA, it is currently the primary drug in the management of COVID - 19. It is reported that there are patients who recover after being given Qloroquinon.



**Figure 2. Overview of Qloroquin for COVID Disease - 19**

**Table 8.** Favipiravir (Avigan), Carrimycin, and Renin Angiotensin Aldosterone System

No	Name	Agents	Disease	Journal
1	Glorya Sp	Favipiravir (Avigan)	Corona Virus (COVID - 19)	Kompas, March 19, 2020
2	Jin Ronghi	Carrimycin	Corona Virus (COVID - 19)	Beijing Sister News Trial, 2020. April 7
3	Muthiah	Renin-Angiotensin- Aldosterone System	Corona Virus (COVID - 19)	N Engl J Med, 2020, April 2

The use of antiviral for pandemic COVID - 19, various types and varies by country, some use Avigan in Japan, Carrimycin in China, and Renin-Angiotensin-Aldosterone in several European counters. All kinds of antivirus are in the Trial stage for COVID - 19 patients.

**Table 9.** Herbs for Corona Virus (COVID - 19, SARS, MERS)

No	Name	Agents	Disease	Journal
1	Pangi	Dymethylamino, Metylborane, Phytol, Squalene, Dimethyldodeciloxo,	Corona Virus (COVID - 19, MERS, SARS), HIV / AIDS,	IJHMCR, 2020; 5 (1): 1565-1571

	Pyridine	Hepatitis	
2 Golobe	Dehydroxy-6-methyl, Methyl Spiro, Dimethyl, Ethyl Esther, Amino Acid, Dietilpyridin	Corona Virus (COVID - 19, MERS, SARS), HIV / AIDS, Hepatitis	IJHMCR, 2020; 5 (1): 1565-1571
3 Red Sea Star	Butanoic Acid, 3- Methyl-, 2-Piperidone, 2-Hydroxy-3,5,5- trimethyl-cyclohex-2- enone 28,682, Hexadecanoic acid, 3- hydroxy-, methyl ester, Methyl 3- Hydroxyhexadecanoate	Corona Virus (COVID - 19, MERS, SARS), HIV / AIDS, Hepatitis	IJHMCR, 2020; 5 (1): 1565-1571

Herbal medicine is currently being developed to increase endurance, immunity, immunostimulants, inhibit viruses such as Herbs examined by Tobelo STIKMAH, such as Pangi Leaves which have the compound Dimethyl pyridine (Antivirus), Phytol (as immunostimulants), Squalene (as an adjuvant for vaccines, and vitamin E as an antioxidant in red starfish compounds containing 21% piperidone as an antiviral (IJHMCR , 2020; 5 (1): 1565-1571)

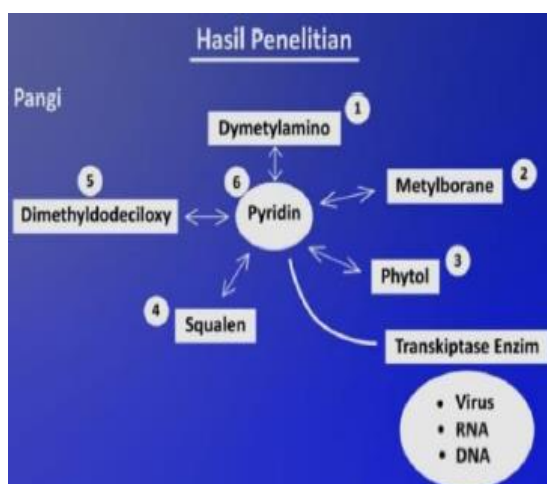


Figure 3. Pangi Research Results

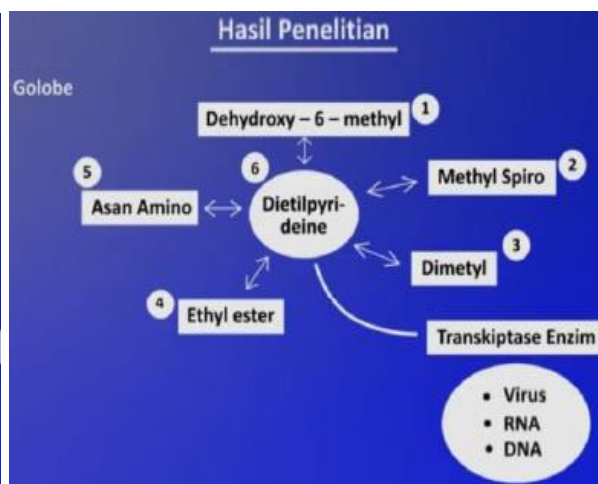


Figure 4. Golobe Research Results



## Conclusion

Research on the effectiveness of the virus to date continues both synthetically and herbal. Research for viral diseases such as HIV / AIDS, MERS Cov, SARS Cov, Dengue, etc. Various ingredients such as Piperidine, Dimethyl, Phytol, Squalene, are compounds that play a role in viral cases. Need further research for the development of antivirus, especially when the pandemic COVID-19 that hit in early 2020.

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