

RESEARCH ARTICLE

Analysis and Impact of Formulated Herbal Medicine Against COVID-19 and Other Viral Infections

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ABSTRACT: Herbal drugs play significant role in the India and many parts of the world to cure many diseases and health complications. These drugs are used to treat viral, bacterial and many other microbial diseases viz. COVID-19, dengue, malaria, cancer and diabetes. Still herbal drug is not achieved prominent place in the health system. This study highlights the significant role of herbal medicine Chronheal-7 to cure COVID-19, dengue, malaria and other microbial infections. Chronheal-7, poly herbal medicine prepared from six different herbs, *G. glabra*, *P. niruri*, *S. xanthocarpum*, *B. diffusa*, *E. alba* and *W. somnifera*. Chronheal-7 effect against SARS-CoV-2 is endorsed by *In Vivo* and *In Vitro* studies. Ayurvedic polyherbal formulation "Chronheal-7" has shown great potential against viral infections COVID-19 including dengue and chikungunya. The results obtained by *In Vitro* and *In Vivo* antiviral studies showed 'Chronheal-7' potential against SARS-CoV-2 virus. COVID-19, dengue and chikungunya infected patients cured by 'Chronheal-7' medicine. SARS-CoV-2 virus infected VeroE6 cell line assay showed anti-viral potential of 'Chronheal-7' (49.45% inhibition) after 30 h of incubation and cytotoxicity test showed non-toxicity for human cells. *In Vitro* and *In Vivo* studies showed 'Chronheal-7' medicine is effective against COVID-19 along with other viral infections viz. dengue, chikungunya. Chronheal-7 has great potential for management of COVID-19 and microbial ailments. It can be used as one of the immune-modular herbal drug in different viral infections. The authors claim that the Chronheal-7 is antiviral and antimicrobial herbal medicine. This study confirms the antiviral effects of Chronheal-7 on the key human pathogen SARS-CoV-2 and may be used as special drug to cure many viral, bacterial and fungal infections.

Keywords: Herbal drug; Chronheal-7; COVID-19; *In Vivo*; antiviral.

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1. INTRODUCTION

Coronaviridae is the large family of viruses. Viruses from this family usually target to the respiratory system which led to the common cold and sometimes cause severe sickness [1]. Middle East respiratory syndrome coronavirus (MERS-CoV) and severe acute respiratory syndrome

coronavirus (SARS-CoV) are spread to human beings from animals [2]. In 2003, SARS-CoV was spread in few countries (in Asia in the month of February 2003) of the world. The disease was rapidly spread and rose in worldwide epidemic. SARS-CoV was allied with 8098 patients and 774 deceases [3]. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), causes the Coronavirus disease 2019 (COVID-19). Symptoms are cold, respiratory distress and acute pneumonia that led to multiple organ failure and ultimately death.[4] Recently in 2019 and 2020, there was outbreak of SARS-CoV-2 and the mortality rate was 27% [5, 6]. SARS-CoV-2 is infectious disease and spread via direct contact with the infected individual's breathing and fluids of the body. Transmission check could be possible through contact tracing during the SARS-CoV-2 outbreak. The

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consequential infectious potential of COVID-19 stances exceptional task for community health representatives to efficiently find patients to resolve the ongoing pandemic situation. Globally about 257 million COVID-19 cases and 5.17 million deaths reported by the World Health Organization (WHO) [7]. Presently, there are no specific therapeutic agents to treat this disease, due to its unique properties.

Earlier, herbal remedy has shown its potential in controlling transmissible diseases [8-10]. Scientific proofs from the experiments of plant based drugs for the management of COVID-19 has revealed striking effects [11-15]. The results led to the conclusion that natural drug has potential to control the SARS-CoV-2 [16-19]. Research article reports herbal drug combined with allopathic medicines might recover signs and excellence of human's life in COVID-19 situation [20, 21]. The pandemic has highlighted the gap in current health care system and emphasized need to look for potent remedies available in ancient health care system alike Ayurveda. By keeping this in mind, 'Chronheal 7' the polyherbal medicine is invented to cope up the situation of COVID-19 positive and suspected patients during pandemic. Initially it was made from plant parts powder liquid extract. In due course of time, tablet is formed by drying extract to again powder form and made in tablet form for convenience to take. The impact of herbal drug Chronheal-7 is assessed from the beginning of their trials, including the analytical analysis (LC-MS) and *In Vivo* and *In Vitro* studies. Chronheal-7 may be a drug of importance as it cures many ailments.

2. EXPERIMENTAL DETAILS

2.1. Materials

Acetonitrile, HPLC grade water, ethanol and ammonium acetate. All other chemicals of analytical grade were procured locally, in India. *Glycyrrhiza glabra*, *Phyllanthus niruri*, *Solanum xanthocarpum*, *Boerhavia diffusa*, *Eclipta alba* and *Withania somnifera* dried plants.

2.2. Methods

2.1.1. Chronheal-7 drug preparation

Chronheal-7, poly herbal medicine contains different important herbs as *G. glabra*, *P. niruri*, *S. xanthocarpum*, *B. diffusa*, *E. alba* and *W. somnifera*. Formula of Chronheal-7 containing six herbs used in equal quantity. The material was procured from Plantarkm kuhoo harbal Pharma. The drug was licensed by Food and Drug Administration Department, Government of India, New Delhi. All herbs consisting Chronheal-7 where subjected to quality control analysis and after due approval process ingredients where issued for production of liquid extract by boil water procedure usually illustrated as "kadha making" in Ayurveda. Then this liquid extract dried and blended to find

powder to make 250 mg tablet. This tablet was given as medicine to infected patients. The dose of tablet for infected person was 250 mg, 3 tablet 3 times in a day. The above 250 mg tablet was supplied to Regional Center for Biotechnology, Faridabad, Haryana, India to test anti-viral activity in BSL-3 lab.

2.2.2. Cytotoxicity test assay

The assay is done in a 96 well plate in 3 wells for each sample. 1×10^4 VeroE6 cells were plated per well and incubated at 37°C overnight for the monolayer formation. Next day cells were incubated with the test substance (TS) at the indicated concentration. The control cells were incubated with 1.4% ethanol. After 30 h later cells were stained with Hoechst 33342 and Sytox orange dye. Images were taken at 10X, 16 images per well, which covers 90% of well area using Image Xpress Micro confocal (Molecular Devices). Hoechst 33342 nucleic acid stain is a popular cell-permanent nuclear counterstain that emits blue fluorescence when bound to dsDNA. It stains all the live and dead cells. Sytox orange dye stains nucleic acid in cells with compromised membranes. This stain is an indicator of cell death. First, the software will count total number of cells in Hoechst image. In the Sytox image, it will count among Hoechst positive cells, how many cells are positive for Sytox.

2.2.3. Anti-viral screening test (IFA method)

The assay is done in a 96 well plate format in 3 wells for each sample. 1×10^4 VeroE6 cells were plated per well and incubated at 37°C overnight for the monolayer formation. Next day cells were incubated with the test substance (TS) at the concentration to be tested. Cells without TS were the control. The cells were infected with SARS-COV-2 at a MOI of 0.1, 30 h later, cells were fixed in 4% paraformaldehyde. Next, cells were permeabilized with Tween-20 (0.3%) and stained with primary and secondary antibodies. Primary antibody SARS-CoV-2 Nucleocapsid mouse monoclonal antibody (Catalogue Number 40143-MM05) and Secondary antibody anti-mouse alexa fluor 568 were used. For stained Nucleus, Hoechst 33342 stain was used. Images were captured and analyzed using Image Xpress Micro confocal (Molecular Devices). SARS-COV-2 Nucleocapsid (Alexa fluor - 568) and Hoechst nuclei stain images were captured at 10X, 16 images per well, which covers 85% of well area. In Meta Xpress software, using Multi wavelength cell scoring molecule, Nucleocapsid positive cells as well as total nuclei were counted and compared with control.

2.2.4. Liquid chromatography- Mass spectroscopy analysis

Samples (Chronheal-7) analyzed by Liquid chromatography-Mass spectrometer (LC/MS). The nano-LC separation was performed by C18, inertsil, (1.7 μ m particle size) with an internal diameter of 5 μ m and length of 250 mm. The solvent system used was 0.5 mM ammonium acetate in water and

acetonitrile. Samples were initially pre-concentrated and desalted online at a flow rate of 1 ml/min using a Symmetry C18 trapping column. The mass spectrometer was operated in ESI mode. For LC/MS, full scan (m/z 100-1000) LC/MS data were collected using the “expression” mode of acquisition which acquires alternating 1 s scans of normal and elevated collision energy. Data were collected at a constant collision energy setting of 3 V during low-energy MS mode scans.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Chronheal-7 natural drug to cure COVID-19, dengue and chikungunya

Numerous medicines that have been permitted for other viral diseases are presently use in treating COVID-19 patients. Hydroxychloroquine and chloroquine were repurposed for the treatment of the SARS-CoV-2. The efficiency of herbal compounds most commonly used in Ayurvedic formulations with possible anti-SARS-CoV-2 properties are also used to treat COVID-19 cases. In present study, the developed Chronheal-7 herbal drug showed its potential against SARS-CoV-2 *In Vivo* and *In Vitro* study. Thousands of COVID-19 positive patients and pregnant women also cured by using this drug. *G. glabra*, *P. niruri*, *S. xanthocarpum*, *B. diffusa*, *E. alba* and *W. somnifera* reported as medicinally important herbs in Ayurveda. During COVID-19 outbreak since March 2020 till January 2023, Chronheal-7 given to COVID-19 positive cases and their after cases of viral flu, dengue, chikungunya and other viral infections. More than 2000 COVID-19 positive cases along with other viral infected cases treated with this drug in due course of time.

G. glabra is promising anti influenza properties in

targeting neuraminidase of H1N1 influenza and computational study shows anti-viral power against H1N1. This speed up recovery from viral hepatitis, HIV, herpes virus, and many viruses. Increases activity of natural killer cells, WBC to fight tumor and viruses. *P. niruri* plant extract shows anti-viral effects on herpes simplex viruses and many other viruses' *In vitro* study. *S. xanthocarpum* herb extract showed anti HIV, antioxidant and anticancer activity. It also help to get relief from cough, reducing fever, cold and bronchial asthma. *B. diffusa* *In vitro* study prove that this herb at 100 mg/ml concentration shows immune-stimulatory effects increasing natural killer cells, lymphocytes, macrophages and hence build immunity. It is reported that this herb inhibits growth of viruses like HIV, Hbv, Herpes, *Japanese encephalitis*, influenza virus, vascular stomatitis virus and Type A influenza virus. It does not allow virus to bind to receptors in the cell hence become strong anti-viral active herb. Comparatively it gives promised anti-viral effects alike other antiviral agent ribavirin, 6 azauridine, pyrazofurin, mycophenoic acid and this herb tested on SARS-CoV2 positive patients and found to be most efficient in controlling viral replication in patients. *E. alba* shows *In Vitro* anti-viral activity against Charles influenza viral respiratory infection, Viral hepatitis Hbv, Hcv, HSV1, HSV2, respiratory illness, fever, cough, bronchial asthma and Rhinitis. *W. Somnifera* eliminate toxins in the body rapidly by acting on excretory system and make kidney, liver, brain and heart healthy. This herb is also possess antiviral phytochemical compounds.

3.1.2. *In Vitro* cytotoxicity test of Chronheal-7 shows non-toxicity to the VeroE6 cells

At Regional Center for Biotechnology, Govt. of India, under the auspices of UNESCO, Faridabad, Haryana, India, cytotoxicity test was conducted on VeroE6 cells. Cytotoxicity test revealed non-cytotoxic nature to the drug concentration level which used to prepare Chronheal-7 medicine.

Table 1. Anti-viral assay results obtained after 30 h incubation of SARS-CoV-2 infected VeroE6 cell with Remdesivir and Chronheal-7 drug.

S. No.	Compound	Concentration	Cell viability	Inhibition (%)
			30 h	30 h
1.	Remdesivir	10 μ M	99.23	99.5
2.	Chronheal-7	4 μ l added from 39 mg/ml solution into 200 μ l reaction mixture.	0.37	NA
		4 μ l added from 39 mg/ml, 10 times diluted solution into 200 μ l reaction mixture.	141.2	49.45
		4 μ l added from 39 mg/ml, 20 times diluted solution into 200 μ l reaction mixture.	139	NA

The change in cytotoxic effect of plant extracts on different cell lines might be contingent on the flavonoid, phenolic, fatty acid and amino acid composition in the plant extracts. Statistical analyses was done to see the effects of Chronheal-7 on cell lines was noteworthy compared with the control cell lines containing no drug and the normal cell line, VeroE6 with the drug. Cytotoxicity reports clearly indicates that Chronheal-7 is not toxic and harmful to normal human healthy cells. It can be given to anyone, there will not be any adverse and side effects to the individuals

3.1.3. Anti-viral potential of herbal drug Chronheal-7

Allopathic drugs and vaccines are successful in managing known viral diseases however, diseases like COVID-19 is quite tough to treat by modern therapies. At the same time, attempts to produce anti-viral medicine certainly led to many issues and severe side effects. In present work, Chronheal-7 herbal drug is developed and successfully used to kill SARS-

CoV-2 and proved *In Vivo* and *In Vitro*. Chronheal-7 herbal drug kills 50% of the SARS-CoV-2 virus in a single dose within 24 h (Table 1).

As per the antiviral assay data, the drug may take only 5 to 6 doses to kill almost all the viruses present in the human body. As viral load reduces in 2 to 3 days, anyone who would be taking this drug will show RT-PCR test negative and CT score at the normal range. The infected person will not spread the disease. Sign and symptoms will also be vanished within week. As cytotoxic test is negative, there won't be any adverse effect on the human body cells. *In Vitro* antiviral activity of Chronheal-7 is shown in Figure 1(a) and (b). Anti-viral potential of Chronheal-7 herbal drug against SARS-CoV-2 can be seen in image very clearly. Anti-viral activity can be observed significantly more than mentioned in the image. It is more likely similar to uninfected cells after 24 h, after single dose only. In Chronheal-7 treated patients, healthy lungs observed post COVID-19.

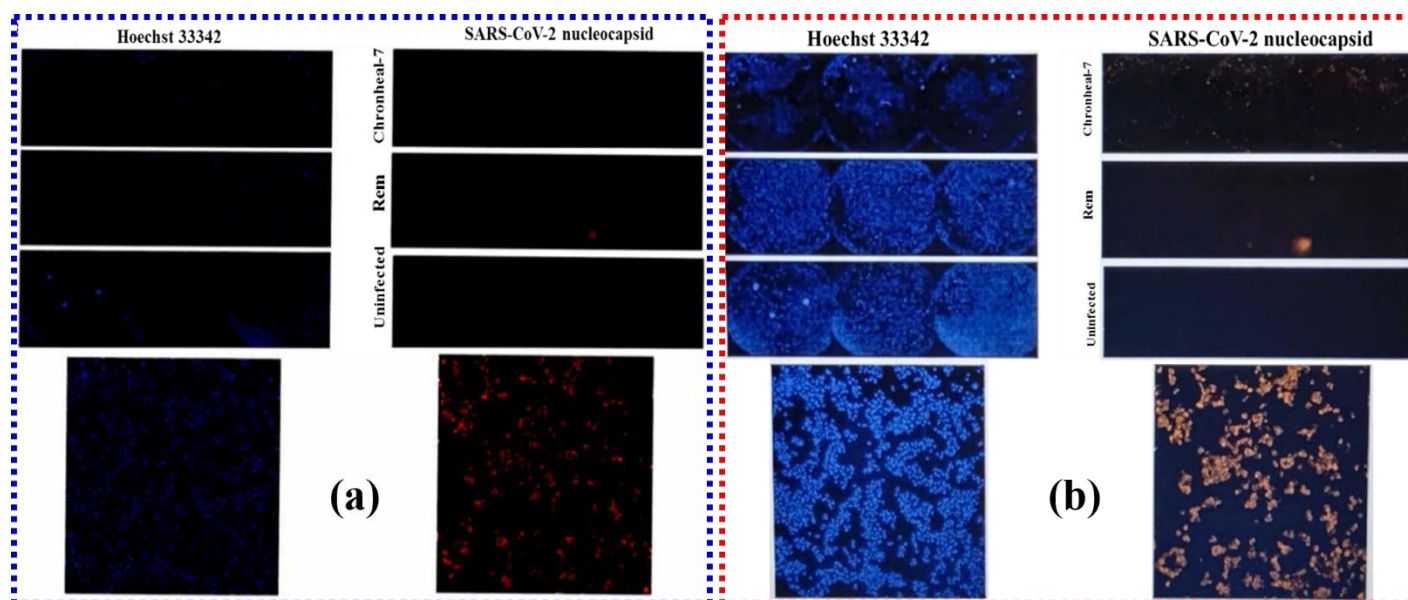


Fig. 1. Dose response of Chronheal-7 and remdesivir on SARS-CoV-2 infected VeroE6 cells. (a) Normal image taken by Micro Confocal Imager (b) Enlarged image to see the impact of drugs on infected cells.

3.1.4. Metabolomic analysis indicates Chronheal-7 strongly affect SARS-CoV-2

First, we have interpreted the most important mass fragments by proposing the Chronheal-7 (Figure 2 (a), (b) and (c)). This information will be of attention for upcoming mass spectrometric analysis where Chronheal-7 and individual herb metabolites can be correlated for in-depth studies. Further in the metabolomics analysis, we focused on the individual metabolites role present in the herbal drug. Punarnavine and indose is reported and known to be present in the herbs used to develop Chronheal-7. These metabolites play important role in immunosuppressive mechanism in

cytokine storm condition and subsides “cytokine storm”. Even successfully used in pulmonary tuberculosis treatment and internal and external anti-inflammatory mechanism. Larabinofuranoside is take part in diuretics and anti-urethritis and punarnavoside is antibacterial anti-hepatotoxic.

Out of 27 metabolites found in LC-MS, lirodendrin and Boerhavin-acid showed potential in anti-asthamatic, boeravinone as anti-stress, anti-oxidant, anti-diabetes and arosolic acid are significantly showed anti-viral activity against SARS-CoV-2. Sitasterol, steric acid, arachidic acid, hentriacontane B-ecysome, triacontanol glycoside and coffeoyltartaric acid usually play role in liver, kidney, heart

tonic, blood purification, cough, fever, expectoration, kidney disease and immune-modulator role. Role of the metabolites present in Chronheal-7 may be explained by the deterrent effect of herbal drug on SARS-CoV-2. In the metabolomics analysis, we further investigated the Chronheal-7 effect on the general body parts and their functions. About 27 primary metabolites which are reported to be involved in various bodily functions are identified and evaluated in relation to COVID-19 and list of those metabolites are listed in Table 2.

3.2. Discussion

In vitro and *In vivo* study of Chronheal 7 drug to treat COVID-19 and other viral infections gives hope for future universal therapeutic option to treat different types of viral infections. Past decades popularity of synthetic drug is decreased and use of traditional medicine for different diseases has increased [22]. This is because of adverse effects of synthetic drugs and development of antibiotic resistance [23-25]. Traditional medicines many times not supported by pre-clinical studies however, the present study filled up that gap. The obtained results indicates that Chronheal-7 medicine is better option for management of COVID-19 and in other viral, bacterial and microbial infections. The study demonstrates Chronheal-7 inhibits 49.45% SARS-CoV-

2 virus in single dose within 30 h.

With this drug dose, viral load can be significantly reduce in 5-6 dosages only within human body. The virus inhibition rate by Chronheal-7 may check spread of SARS-CoV-2 infection in humans. Being immune-modular medicine, sign and symptoms of infected person can be reduced within 3 to 7 days which convert symptomatic person to asymptomatic person without any side effects. Cytotoxicity test in report clearly indicates that this molecule is not toxic and harmful to normal human healthy cells. It can be given to anyone, it has no adverse effects at all.

Medicine given to different locations in India indicates that it gives unique and same results at diverse places too. More than 2000 COVID-19 positive patients cured with Chronheal-7. More than 200+ dengue and other viral infection cases treated with Chronheal-7. All patients cured with time span of 3 to 7 days post infection period. The herbal drug Chronheal-7 prescribed in pregnancy condition and observed to be safe and effective without having any side effects. Age groups from 2 to 80 years have been treated against SARS-CoV-2 infection with this medicine, successfully. Since Jan 2020 to till date May 2023, Chronheal-7 is prescribed to various patients with different types of infections and cured absolutely.

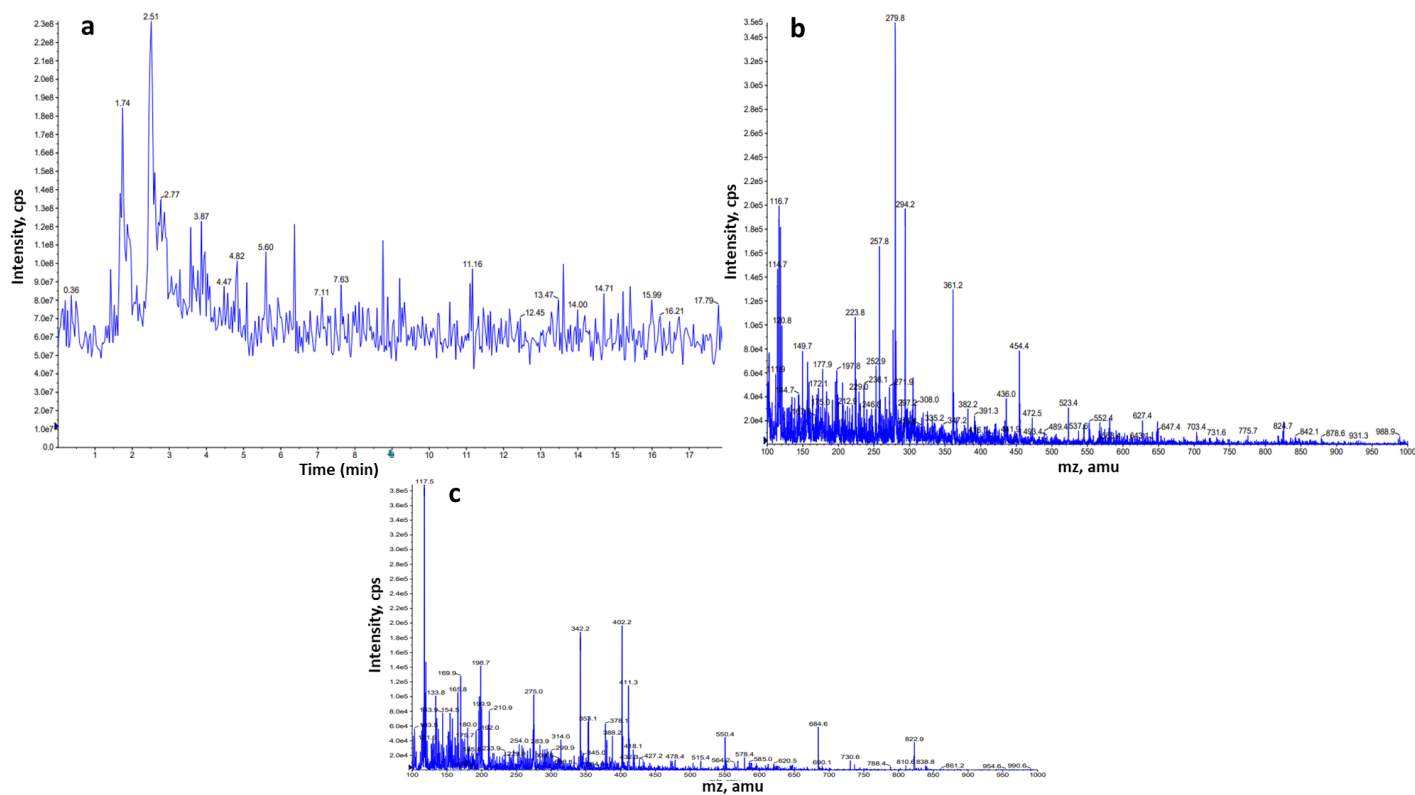


Fig. 2. (a) LC-MS chromatogram of Chronheal-7, (b) LC-MS spectra of Chronheal-7 in positive mode (c) LC-MS spectra of Chronheal-7 in negative mode.

Table 2. List of identified and reported metabolites in *G. glabra*, *P. niruri*, *S. xanthocarpum*, *B. diffusa*, *E. alba* and *W. somnifera*.

Active component	Uses
Punarnavine Indose of 40mg/kg	<ul style="list-style-type: none"> • Immuno – suppressive in cytokine storm condition • Subsides “cytokine storm” • In successful treatment in pulmonary Tuberculosis • Anti-inflammatory reducing swelling (internal external)
Larabinofuranoside	<ul style="list-style-type: none"> • Diuretics, anti – urethritis
Punarnavoside	<ul style="list-style-type: none"> • Antibacterial anti hepatotoxic
Lirodendrin	<ul style="list-style-type: none"> • NA
Boerhavin - acid	<ul style="list-style-type: none"> • Anti – Asthmatic
Boeravinone	<ul style="list-style-type: none"> • Anti stress, Anti – oxidant, Anti diabetes
Arosolic acid	<ul style="list-style-type: none"> • Very high and viral activity against SARS COV2
Sitasterol	<ul style="list-style-type: none"> • Liver kidney, heart tonic
Steraric acid Arachidic acid	<ul style="list-style-type: none"> • Blood purification • Cough, fever expectoration
Hentriacontane	<ul style="list-style-type: none"> • Kidney disease • Immune-modular
B – Ecysome	
Triacontanol	
Glycoside	
Caffeoyltartaric acid	
Weddelolactone	<ul style="list-style-type: none"> • Analgesic – relieving pain, fever swelling
Along with columestans	<ul style="list-style-type: none"> • Anti hepato toxic, anti bacterial • Trypsin inhibitor
Ecliptic	<ul style="list-style-type: none"> • Antioxidant
Polypeptide	<ul style="list-style-type: none"> • Anti – myotoxic
Thiophene derivatives	<ul style="list-style-type: none"> • Anti haemorrhagic • Prevent destruction of RBCs
Stigmasterol	<ul style="list-style-type: none"> • Acts as steroidal, lowers viral load
Heptacosanole	<ul style="list-style-type: none"> • Anti-epileptic
hentriacontanol	

Triterpenes	<ul style="list-style-type: none">• Anti-hepatotoxic
Dimethyl weldelolactone	<ul style="list-style-type: none">• Anti-viral ranikhet disease• Anti-bacterial, anti haemorrhagic
B – amyrin	<ul style="list-style-type: none">• Anti-viral showing great results on hepatitis B.C.
Hepatocosanol	<ul style="list-style-type: none">• Prevent viral replication
Eclalbosaponins	<ul style="list-style-type: none">• Anti-proliferative, Anti-giardial
Dasyscyphin	<ul style="list-style-type: none">• Anti-viral, anti-cancer
Eclalbatin	<ul style="list-style-type: none">• Anti-oxidant
Ecliptalbine, Verazine	<ul style="list-style-type: none">• Lipid lowering
Solasodine	<ul style="list-style-type: none">• Anti-asthamatic, significant improvement in all parameter in respiratory system illness
Quercitrin	<ul style="list-style-type: none">• Throat infection
Carpesterol	<ul style="list-style-type: none">• Reduction of LDL bad cholesterol, prevention of colon, brest, prostate cancer , anti-oxidant
Chlorogenic acid	<ul style="list-style-type: none">• Lower triglyceride, fat, blood sugar level
Caffeic acid	<ul style="list-style-type: none">• Reduce swelling cancer, diabetes, radioprolective
Oleanolic acid	<ul style="list-style-type: none">• Viral diseases protective
Apigenin glycosides	<ul style="list-style-type: none">• Strong anti-oxidant, anti-inflammatory, anti-viral, anti-bacterial
Solasurine	<ul style="list-style-type: none">• Anti-bacterial
Scopoletin	<ul style="list-style-type: none">• Used for bronchial illness and anti-asthmatic
Stigmaterol	<ul style="list-style-type: none">• Reduce risk of cardiovascular diseases
Isopelletierine	<ul style="list-style-type: none">• Anti-inflammatory• Cytokine and anaphalytic reaction stoppage
Anaferine	
Withaholide	<ul style="list-style-type: none">• Acts strong like steroid in emergency to save life, as in cytokine strom and anaphyitic reaction
Withaferin A	<ul style="list-style-type: none">• Acts more powerful than steroid <i>viz.</i> hydrocortisone
B sitosterol	<ul style="list-style-type: none">• Reduces swelling in body
Ergostane	
Chlorogenic acid	<ul style="list-style-type: none">• Anti-bacterial

Scopoletin	<ul style="list-style-type: none">• Anti-tumour
Somniferinine	<ul style="list-style-type: none">• Immune modular, anti-oxidant, increases T and B lymphocytes to counter act infection and increases immunity of cells
Phyllanthin	<ul style="list-style-type: none">• Anti-viral (research done already in Taiwan, Kolkata, Vellore, Bangalore)
Hypophyllanthin	<ul style="list-style-type: none">• Anti-HIV• Anti-harpes simplex
Hirphyllin	
Phyllnirurin	<ul style="list-style-type: none">• Inhibits viral replication
Hiranthin	<ul style="list-style-type: none">• Prevent viral growth and lowers viral load in infection
Lintetralin	<ul style="list-style-type: none">• Hepatitis B, C, viral infection recovery
Estrodiol	<ul style="list-style-type: none">• Hepatoprotective
Quercetin	<ul style="list-style-type: none">• Anti-inflammatory• Nephroprotective
Phyllantherol	<ul style="list-style-type: none">• Anti-carcidogenic• Anti-viral on hbs antigen• Lower viral replication
Corilagin	<ul style="list-style-type: none">• Radio-protective, anti-viral
Phyltetralin	<ul style="list-style-type: none">• Anti-inflammatory
Nirtetralin	<ul style="list-style-type: none">• Anti-inflammatory• Anti-viral• Reverse multidrug resistance
Hinokinin	<ul style="list-style-type: none">• Anti-viral
Rutin	<ul style="list-style-type: none">• Radio-protective• Antioxidant
Quercetin – 3 – O - glucoside	<ul style="list-style-type: none">• Antioxidant
Geraniin	<ul style="list-style-type: none">• Anti-viral• Radio-protective• Hepato-protective
Amariin	<ul style="list-style-type: none">• Anti-oxidant• Radio-protective• Hepato-protective
Repandusinic acid A	<ul style="list-style-type: none">• Anti-oxidant• Radio-protective

Corilagin	<ul style="list-style-type: none">• Antioxidant• Radio-protective• Anti-viral
Phyllanthusiin A, B, C, D	<ul style="list-style-type: none">• Anti-oxidant• Radio-protective
Norsecurinine	<ul style="list-style-type: none">• Anti-fungul
Linalool, phytol	<ul style="list-style-type: none">• Anti-microbial• Anti-cancer
E, E – 2, 4 - Octadienamide	<ul style="list-style-type: none">• Anti-plasmodial
E, Z – 2, 4 - Octadienamide	<ul style="list-style-type: none">• Anti-plasmodial
Phyllathin	<ul style="list-style-type: none">• Hepato-protective• Anti-cancer, Anti-tumour• Anti-leukemia• Ant-ibacterial• Anti-amnestic• Anti-aging• Anti-oxidant• Anti-inflammatory• Anti-poptotic
Hypophyllanthin	<ul style="list-style-type: none">• Anti-tumour, Anti-cancer• Anti-viral• Anti-inflammatory
Ninranthin	<ul style="list-style-type: none">• Anti-tumour• Anti-viral• Anti-inflammatory
Phyltetralin	<ul style="list-style-type: none">• Anti-inflammatory
Niettralin	<ul style="list-style-type: none">• Anti-inflammatory• Anti-viral• Reverse multidrug resistance
Hinokinin	<ul style="list-style-type: none">• Anti-viral
Rutin	<ul style="list-style-type: none">• Radio-protective• Anti-oxidant
Quercetin – 3 - O - glucoside	<ul style="list-style-type: none">• Anti-oxidant
Geraniin	<ul style="list-style-type: none">• Anti-viral• Radio-protective• Hepato-protective

Amariin	<ul style="list-style-type: none"> • Anti-oxidant • Radio-protective • Hepato-protective
Repandusinic acid A	<ul style="list-style-type: none"> • Antioxidant • Radio-protective
Corilagin	<ul style="list-style-type: none"> • Antioxidant • Radio-protective • Anti-viral
Phyllanthusiin A, B, C, D	<ul style="list-style-type: none"> • Anti-oxidant • Radio-protective
Norsecurinine	<ul style="list-style-type: none"> • Anti-fungal
Linalool, phytol	<ul style="list-style-type: none"> • Anti-microbial • Anti-cancer
E,E – 2, 4 - Octadienamide	<ul style="list-style-type: none"> • Anti-plasmodia

Those took Chronheal-7 medicine for prevention of SARS-CoV-2 infection, they successfully build immunity and not hooked by any types of infection in pandemic condition. In some cases, post COVID-19 complications symptoms like breathing difficulty and weakness gone permanently within 15 days to 1 month with course of Chronheal-7. It proved to be effective to manage post COVID-19 complications.

4. CONCLUSION

This study confirms the antiviral effects of Chronheal-7 on the key human pathogen SARS-CoV-2, which has power to evade to most drugs in current use. Chronheal-7 medicine was found to be effective and safe to treat COVID-19 infection *In Vitro* and *In Vivo* study. With increasing incidence of side effects of modern drugs, it is important to search for safe and effective medicine for viral infection and their management. Chronheal-7 significantly reduces the viral load reduction within 3 to 7 days, observed in *In Vitro* and *In Vivo* studies which reduces severity of viral infection in all COVID-19 cases. Chronheal-7 is effective against dengue and chikungunya also. Our interpretations of a diversity of metabolite, as well as the identification and role of different ingredients present in Chronheal-7, show that the mode of action might exploit against many different pathogens, making Chronheal-7 a promising herbal drug to combat the growing problem of new strains of virus and other pathogenic microorganisms worldwide.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interests.

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