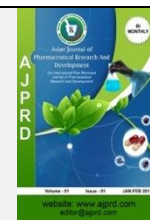


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Review Article

## Rasayana Drugs Promise Better Anti-Covid-19 Medications

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## ABSTRACT

COVID-19 virus is a worldwide tragedy. The western research endeavors are trying to find out an effective medication against this virus. The rasayana drugs promise rewarding medications. Their phytochemicals were studied with scientific rationality against COVID-19 virus.

**Keywords:** COVID-19, Phytochemical, Rasayana drug, Viral entry blocker.

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## INTRODUCTION

COVID-19 pandemic is global tragedy. An extraordinary research endeavors around the world is searching anti-COVID-19 drugs. The western attempts are focused on monoclonal antibodies for vaccine development and repurposing drugs. Rasayana drugs<sup>1-4</sup> of Indian ayurvedic heritage have antiviral phytochemicals to combat this virus. The key protein targets of SARS-COVID-2<sup>5-7</sup> are surface glycoprotein (6VSB) responsible for viral attachment and entry and RNA dependent RNA polymerase, responsible for viral replication. Rasayana phytochemicals have superior binding efficacy than standard drugs Remdesvir, Lopinavir and Ritonivir. The revival of rasayana formulations<sup>1-4</sup> is indispensable in management of COVID-19 virus.

## THEORETICAL METHODOLOGY

Rasayana drugs are composed of rasayana herbs<sup>8</sup>, used in the traditional therapy<sup>9</sup>. They are amalgam of ayurvedicophoric phytochemicals, thereby homostatis of biological humors is maintained eg. Triphalarasayana, Chyawanprashrasayana, Shilajit rasayana, Amritaprasham, Ashwaganda rasayana, Brahma rasayana and Narasimha rasayana. The selection of anti-COVID-19

ayurvedicophoric herbs<sup>10</sup> was based on their anti-inflammatory, bronchodilatory, anti-oxidative and immune boosting activities. They are *Tinospora cordifolia*, *Withaniasomnifera*, *Ocimumsantum*, *Embolia officinalis*.

The notable anti-COVID-19 phytochemicals of these rasayana herbs are – Methyl eugenol, Oleanolic acid, Ursolic acid<sup>11</sup>, Withanone<sup>12</sup>, Withanolides<sup>13</sup>, Tinocordiside<sup>14</sup>. Possibly they restore pulmonary health by improving endothelial dysfunction and reducing oxidative stress.

Metyleneugenol is allyl ether of eugenol (methyl ester of eugenol). The Oleanolic and Ursolic acids are pentacyclic triterpenoids. Withanone is secondary metabolite of steroidal oxidation and it is steroidal lactone. Withanolides are steroidal macrolides, having 6-membered  $\alpha$ ,  $\beta$  unsaturated lactone and epoxy function between C5 and C6. Tinocordiside is a cadinane sesquiterpene. Chemically steroidal and terpenoidal structures are virologically important.

The phytochemicals of Tulsi<sup>11</sup> and Neem targeted surface spike glycoprotein<sup>14-15</sup> and very recently studied through molecular docking to calculate binding affinities and inhibitory concentrations.

Methyleugenol, Oleanolic acid, and Urosolic acids were found to be good antivirals and their reported data<sup>14-15</sup> is given in table one:

**Table: 1** Binding efficacy of selected phytochemical against surface spike glycoprotein (6VSB) of COVID-19<sup>14-15</sup>.

| Phytochemical  | Binding affinity (Kcal/mol) | IC <sub>50</sub> (μM) |
|----------------|-----------------------------|-----------------------|
| Methyl eugenol | -8.29                       | 1.74                  |
| Oleanolic acid | -8.27                       | 2.04                  |
| Urosolic acid  | -8.17                       | 1.59                  |

All of them have close proximity in their values.

## DISCUSSION AND RESULT

Rasayana medications are poly herbal and alloyed with variety of phytochemicals. We thoroughly reviewed rasayana herbs and their phytochemicals, to discover, what is so unique in rasayana therapy. We tried to insight rasayana with new rationality. The majority of such medications have common denominators of nootropic herbs and cocktail of biological activities, therefore they have holistic mode of action. The holism<sup>16</sup> may be responsible for low levels of toxicity.

The prime objectives of rasayana medications are to promote anabolism and decline catabolism by different well-established biochemical mechanisms. They make sure that chemoprotectiveness / chemopreventiveness ensure normal healthy longevity free from biotoxic pathology.

Our study found that tridosha concept keeps the orderly homeostasis of body humors and cleans biotoxins by eliminating pathogenic derbis. The antioxidative phytochemicals antagonize viral oxidative stress. COVID-19 pandemic has downgraded psychological acumen of patients due to dysregulation of body functions. Rasayana medication has psychophysiological mechanism for re-establishing energy levels and performance effectiveness supported by health promoting behaviors as well as life style modifications<sup>16</sup>.

Tridosha and psychophysiological concepts endorsed the co-ordination of body, mind and soul. We suggest a novel interdisciplinary encompassment of rasayana with orthobiosis<sup>17</sup> and autophagic herbs<sup>18</sup> for the prospective health concepts.

We found that bioactive six phytochemicals under study have dominance of oxygen functions which act as hydrogen bond donor or acceptor (HBD+HBA) for blocking viral entry through spike glycoprotein by disrupting viral interactions<sup>15,19,20</sup> with host cells. The lack of rotational bonds markedly reduced conformational flexibility, further

ring fusions impart rigidity. Supposedly it helps better fit with viral receptor.

## CONCLUSION

Rasayana drugs are divinely blessed by the mother nature. They decode pathogenicity by natural-therapeutics with physiological compatibility. Remarkably they have low profiled toxicology mishaps and pharmacologically better anti-COVID-19 medications.

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## REFERENCES

1. Vayalil, PK, Kuttan, G. Kuttan, R. Rasayanas: evidence for the concept of prevention of diseases. *Am J China Med.* 2002;30:155-171.
2. Rekha, PS, Kuttan, G. Kuttan, R. Effect of herbal preparation, *Brahma Rasayana.in.*
3. Inducting Rasayana Therapy in our Daily Routine by Dr.Krishna R.S (<http://www.boloji.com/ayurvededa/av047.htm>).
4. Pub med database on Rasayana-query.
5. Stower H. Virological assessment of SARS-COV-2 *Nature med.* 2020 26(4):485.
6. Potential to combat COVID-19 pathogenicity <http://www.researchsquare.com/article-17806/UL>.
7. ACE-2 receptor <https://www.medrxiv.com>.
8. Thamizhselam et.al, medical plants in rasayana drugs, their active ingredients and reported activities –an overview Jan 30, 2020, DOI-1023880/jonam/16000227.
9. Venugopalan SN et.al, 2017, understanding the concepts Rasayana in Ayurveda biology *J. of natural and Ayurvedic medicine* 1(2): 112.
10. Reconsidering Traditional medicinal plants to combat COVID-19. <http://permitsaij.org/index.php>.
11. Cohen M.M. (2014). *Tulsiocimum sanctum- A herb for all reasons*, *J of Ayurveda and integrative medicine* 5(4):251.
12. Dagenous et.al 2000 Scientific basis for the therapeutic use of *Withaniasomifera* (ashwagandha). *A review alternative medicine* 5(4):334-346.
13. Withanolides DOI:102/203/rs-1780/6/Ui.
14. Khanuja S.P.S. (2004). *Tinosporacordifera* Review *Indian Journal of Traditional knowledge* 3(3) 257-270.
15. Varshney et.al 2020 Entry disrupting interaction between virus S protein receptor binding domain and host ACE2 receptor *BMC virology* Doc: 10.21203/rs.3rs/17806/UL
16. Anita c et.al Ayurveda's holistic life style approach for the management of corona virus disease. *Int. J. res.PharmSci* 2020, 11, 16-8.
17. Orthobiosis online library [wiley.com](http://wiley.com). 1746,1561. 1968tbo 4257X.
18. Natural products in the promotion of health span and longevity. *Doc* 10.31/700/25727656000/23.
19. Ying T.et.al- Potent binding of 2019 novel corona virus spike protein by a SARS corona virus specific human monoclonal antibody-emerging microbes/infections 9(1):382-385 2020.
20. Shetty et.al COVID-19/SARS-COV-2 therapy .<http://www> – on Friday May 22,2020 IP 132154 87.156.