



Document prepared by Nerve Center of TFORD, Venture Center, Pune  
**Task Force on Repurposing of Drugs (TFORD) for COVID19**  
 S&T Core Group on COVID19 constituted by PSA to Gol

## Medicinal Herb Briefs: *Glycyrrhiza glabra*

**Ref:** TFORD/MHB/002

**Date:** 26 May 2020

**About this document:** This document summarizes information available on medicinal herb candidates for COVID19. One Medicinal Herb Brief document covers one candidate at a time.

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### 1. Summary Information on *Glycyrrhiza glabra*

Information About the Herb for Reported Indication(s)	
Common Name	Liquorice, Gancao, Glycyrrhiza, sweet root, Yasti-madhu
Botanical Name (Family)	<i>Glycyrrhiza glabra</i> (Fabaceae)
Type of Plant/Source of Herbal Ingredients	Perineal Herb Source - Roots <a href="https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf">https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf</a>
TKDL Information	71 mentions for the Herb on TKDL
Indian Pharmacopeia Information	Herbal Drug Monograph available in Indian Pharmacopeia 2018
Reported Pharmacological Effects	Anti-inflammatory, Expectorant, Anti-viral, Immunomodulator, Anti-ulcer, Hepatoprotective, Anti-oxidant, Anti-carcinogenic, Corticosteroid <a href="https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf">https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf</a>
Reported Therapeutic Target(s)	Targets reported for Bioactive (for details please see Bioactive Section)
Reported Mode of Action	<ul style="list-style-type: none"> <li>• Anti-inflammatory activity: By reducing nitric oxide and prostaglandin E2 production <a href="https://www.ncbi.nlm.nih.gov/pubmed/18075885">https://www.ncbi.nlm.nih.gov/pubmed/18075885</a></li> <li>• Antiviral activity: Attributed to Glycyrrhizin which indirectly stimulates endogenous viral defense mechanisms</li> <li>• Immunomodulator activity: Stimulation of IFN-gamma production by T cells <a href="https://www.ncbi.nlm.nih.gov/pubmed/9055991">https://www.ncbi.nlm.nih.gov/pubmed/9055991</a></li> </ul>
Herb is reported to be beneficial for which conditions?	<ul style="list-style-type: none"> <li>• Treatment of Sore throat (demulcent), Cough, Bronchial Catarrh (expectorant), Allergic reactions, Arthritis, Rheumatis, Tuberculosis, Adrenocorticoid insufficiency</li> <li>• Prophylaxis and Treatment of Gastric Ulcers, Duodenal Ulcers, Dyspepsia</li> <li>• Prevention of Liver Toxicity</li> </ul>

	<a href="#">World Health Organization. 1999. 'Radix Glycyrrhizae.' WHO Monographs on Selected Medicinal Plants, Vol. 1.</a>
Is the herb or its extract form used for clinical purposes?	Yes- Both
Prescribed Dose	5-15 g per day of cut or powdered root, or dry extracts equivalent to 200-600 mg of glycyrrhizin. <a href="http://cms.herbalgram.org/expandedE/Licoriceroot.html#Administration(American Botanical Council Database)">http://cms.herbalgram.org/expandedE/Licoriceroot.html#Administration(American Botanical Council Database)</a>
Route of Administration	Oral
Safety Profile (dose range in which it has been tested to be safe in humans)	Clinical studies show that short-term use (not more than 4 weeks) is safe. However, chronic use can cause hypokalaemia, hypertension and, more rarely, cardiac rhythm disorders. <a href="https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf">https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf</a>
Adverse events/Side effects reported at the current prescribed dose	No adverse reactions have been associated with the herb when used within the recommended dosage and treatment period. Prolonged use (6 weeks) of excessive doses (50g/day) can lead to pseudoaldosteronism, which includes potassium depletion, sodium retention, oedema, hypertension, and weight gain. In rare cases, myoglobinuria and myopathy can occur <a href="#">World Health Organization. 1999. 'Radix Glycyrrhizae.' WHO Monographs on Selected Medicinal Plants, Vol. 1.</a>
Reported Drug-Herb interactions	Because it increases potassium loss, Radix Glycyrrhizae (root) should not be administered for prolonged use with thiazide and loop diuretics or cardiac glycosides. Because it reduces sodium and water excretion, the effectiveness of drugs used in the treatment of hypertension may be reduced. Radix Glycyrrhizae should not be administered in conjunction with spironolactone or amiloride <a href="#">World Health Organization. 1999. 'Radix Glycyrrhizae.' WHO Monographs on Selected Medicinal Plants, Vol. 1.</a>
Link to Datasheet	<a href="https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf">https://www.ema.europa.eu/en/documents/herbal-report/final-assessment-report-glycyrrhiza-glabra-l/glycyrrhiza-inflata-bat/glycyrrhiza-uralensis-fisch-radix_en.pdf</a>
Regions where Herb is found	Local Distribution: Himachal Pradesh, Jammu and Kashmir, Punjab <a href="https://www.biodiversityofindia.org/index.php?title=Glycyrrhiza_glabra#tab=Habitat and Geographical Spread">https://www.biodiversityofindia.org/index.php?title=Glycyrrhiza_glabra#tab=Habitat and Geographical Spread</a>
Is the Herb or Extract being sold in India?	Yes. Available as dried roots, crude powder and extract
Indian Manufacturer(s)	Alkaloids Corporation <a href="https://www.pharmacompass.com/manufacturers-suppliers-exporters/licorice-root">https://www.pharmacompass.com/manufacturers-suppliers-exporters/licorice-root</a>
International Manufacturer(s)	AIPS Pharmaceutical (Japan), Ransom Naturals Ltd (UK), Finzelberg (Germany) <a href="https://www.pharmacompass.com/manufacturers-suppliers-exporters/licorice-root">https://www.pharmacompass.com/manufacturers-suppliers-exporters/licorice-root</a>
Cost of the Herb and Extract products in India	Licorice roots- Rs. 140-240/Kg, Licorice extract powder- Rs. 950/Kg, Licorice extract- Rs. 450/50ml
<b>Information About the Major Bioactive for Reported Indication(s)</b> <b>NOTE – THIS INFORMATION IS ONLY FOR THE MAJOR BIOACTIVE IN THE HERB</b>	
What is the Major Bioactive in the Herb?	Glycyrrhizic acid and its salts mainly Diammonium glycyrrhizinate
Is the Major Bioactive, in isolated form	Yes

used for clinical purposes?	
Drug Bank ID	DB13751 <a href="https://www.drugbank.ca/drugs/DB13751">https://www.drugbank.ca/drugs/DB13751</a>
Reported Pharmacological effects	Anti-inflammatory, Anti-viral, Immunomodulatory <a href="https://www.drugbank.ca/drugs/DB13751">https://www.drugbank.ca/drugs/DB13751</a>
Reported Therapeutic Target(s)	Corticosteroid 11-beta-dehydrogenase isozyme 1, Tumor necrosis factor, Caspase-3, Nuclear factor NF-kappa-B (Protein Group), Lipoprotein lipase <a href="https://www.drugbank.ca/drugs/DB13751">https://www.drugbank.ca/drugs/DB13751</a>
Reported Mode of Action	<ul style="list-style-type: none"> <li>• Anti-inflammatory activity: Generated via suppression of TNF alpha and Caspase 3. It also inhibits the translocation of NFkB into the nuclei and conjugates free radicals. Some studies have shown a Glycyrrhizic-driven inhibition of CD4+ T cell proliferation via JNK, ERK and PI3K/AKT pathways.</li> <li>• Antiviral activity: Inhibition of viral replication <a href="https://www.drugbank.ca/drugs/DB13751">https://www.drugbank.ca/drugs/DB13751</a></li> </ul>
Bioactive is reported to be beneficial for which conditions?	Chronic hepatitis in China and Japan (for over 20 years) <a href="https://onlinelibrary.wiley.com/doi/pdf/10.1046/j.1365-2036.1998.00309.x">https://onlinelibrary.wiley.com/doi/pdf/10.1046/j.1365-2036.1998.00309.x</a> <a href="https://www.sciencedirect.com/topics/neuroscience/glycyrrhizic-acid">https://www.sciencedirect.com/topics/neuroscience/glycyrrhizic-acid</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4052927/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4052927/</a>
Prescribed Dose	50mg to 100mg <a href="https://patents.google.com/patent/CN102188404A/en">https://patents.google.com/patent/CN102188404A/en</a>
Route of Administration	Oral
Safety Profile (dose range in which it has been tested to be safe in humans)	Data not available
Adverse events/Side effects reported at the current prescribed dose	<ul style="list-style-type: none"> <li>• In large amounts, glycyrrhizin salt can cause high blood pressure, water retention, &amp; low potassium levels, which could lead to heart problems.</li> <li>• Combined administration of glycyrrhizin salt with diuretics (water pills), corticosteroids, or other medicines that decrease the body's potassium levels. <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6836258/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6836258/</a></li> </ul>
Reported Drug-Bioactive interactions	94 drug-drug interactions reported Inhibits CYP2C19 and CYP3A4 <a href="https://www.drugbank.ca/drugs/DB13751">https://www.drugbank.ca/drugs/DB13751</a>
Link to Datasheet for Bioactive	Data not available
Is the Bioactive being sold in India?	No
Indian Manufacturer(s)	No
International Manufacturer(s)	CTTQ Pharma, Jiangsu Zhengda Pharmaceutical, Sino Biopharmaceutical, Alchem International <a href="https://www.cttq.com/en/product/12203.htm">https://www.cttq.com/en/product/12203.htm</a> <a href="http://www.jstsyy.com/product.asp">http://www.jstsyy.com/product.asp</a> <a href="https://www.marketscreener.com/SINO-BIOPHARMACEUTICAL-LI-6170858/news/Sino-Biopharmaceutical-VOLUNTARY-ANNOUNCEMENT-COMPLETION-OF-REGISTRATION-FOR-THE-CLINICAL-RESEAR-30063776/">https://www.marketscreener.com/SINO-BIOPHARMACEUTICAL-LI-6170858/news/Sino-Biopharmaceutical-VOLUNTARY-ANNOUNCEMENT-COMPLETION-OF-REGISTRATION-FOR-THE-CLINICAL-RESEAR-30063776/</a> <a href="http://www.alcheminternational.com/product/glycyrrhizinate-ammonium-mag/">http://www.alcheminternational.com/product/glycyrrhizinate-ammonium-mag/</a>
Cost of the Bioactive in India	Data not available

**Information About the Candidate for COVID-19**

Repurposing Claim	Prophylaxis & Treatment; New Indication (COVID-19) + New Dose (not confirmed)
Rationale for Repurposing for COVID19/MoA? –	<p><i>G. glabra</i>:</p> <ul style="list-style-type: none"> <li>Reported to be one of the Traditional Chinese Medicines suggested for use in COVID-19 pneumonia patients. <a href="https://www.sciencedirect.com/science/article/pii/S1043661820307556?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S1043661820307556?via%3Dihub</a></li> <li>A review article by Ayurvedic research groups suggest <i>G. glabra</i> could be considered for evaluation as a prophylactic therapy for COVID-19 <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7177084/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7177084/</a></li> </ul> <p>Glycyrrhizic acid:</p> <ul style="list-style-type: none"> <li>Anti-viral activity reported for SARS-CoV (inhibits viral replication, adsorption, penetration) in a pre-clinical studies (in-vitro) <a href="https://www.ncbi.nlm.nih.gov/pubmed/12814717">https://www.ncbi.nlm.nih.gov/pubmed/12814717</a> <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7128415/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7128415/</a></li> </ul> <p>According to a news article, Chinese National Medical Products Administration has approved the use of Lianhua-Qingwen capsule for the treatment of COVID-19. The capsule is a formulation of 11 herbs of which <i>G. glabra</i> is one of them. <a href="https://news.cgtn.com/news/2020-04-16/Beijing-approves-TCM-drugs-for-COVID-19-PJWgGfRAQg/index.html">https://news.cgtn.com/news/2020-04-16/Beijing-approves-TCM-drugs-for-COVID-19-PJWgGfRAQg/index.html</a> <a href="https://news.cgtn.com/news/2020-05-05/Expert-Lianhua-Qingwen-capsule-proven-effective-for-COVID-19-QeXiCOF18A/index.html">https://news.cgtn.com/news/2020-05-05/Expert-Lianhua-Qingwen-capsule-proven-effective-for-COVID-19-QeXiCOF18A/index.html</a></p>
Proposed use as Primary or Adjuvant?	Primary
Pre-Clinical Data available for COVID-19	Data not available
Status of Clinical Trials	2 ongoing trials (1for Herb and 1 for Bioactive). Trial with Herb is in India
Trial Details	See details below

Trial ID/Link	Type of Trial	Form used	No. of patients	Drug Combination/ Dose/ Stage of Disease	Primary and Secondary Measures	Has data from the trial been published?
<a href="#">ChiCTR2000029768 (Therapy)</a>	Randomized, open, controlled trial	Bioactive	30	<p>Diammonium glycyrrhizinate enteric-coated capsules with vitamin C tablets</p> <p>Dose: Oral, 150mg, Tid</p> <p>Stage: Data not available</p>	<ul style="list-style-type: none"> <li>Time to improvement of Virus infection symptoms</li> <li>Length of hospitalization /Healed and discharged</li> <li>Time to conversion of 2019-nCoV RNA result from RI sample</li> <li>Rate of preventing mild to moderate patients from shifting to severe</li> <li>Patients</li> </ul>	No

					<ul style="list-style-type: none"> <li>• Time to Clinical recovery</li> <li>• 7. Changes in lung inflammation absorption</li> </ul>	
<a href="#">CTRI/2020/05/025093</a> (Prophylaxis)	Open label, Randomized, Controlled, Prospective, interventional, Community-based clinical study	Herb (extract)	1200	YASHTIMADHU TABLET  Dose: 250 mg X 2 tablets bd for one month  Stage: Data not available	<p>Primary: Comparative assessment of occurrence of COVID-19 infection in healthy volunteers in community having at least 1 confirmed case already identified with control arm of Standard Prophylactic Care</p> <p>Secondary: 1. Comparative assessment of severity of Covid-19 infection in subjects taking YASHTIMADHU TABLET and those not taking it in following situations: a) Assessment of subjects not requiring hospitalization b) Severity of symptoms of hospitalized patients in wards c) Patients requiring ICU admission / Ventilator support 2. Global assessment of overall change as per the investigator (Efficacy assessment)</p>	No

Key Data from Clinical Trials	Data not available
IP Status	<p>Status/ Molecule <i>Glycyrrhiza glabra</i></p> <p>Approved and Active applications <a href="#">225350</a> Title: Anti-cough, anti-tussive and throat soothing synergistic herbal formulation Assignee: Council Of Scientific And Industrial Research (National Botanical</p>

	<p>Pending applications</p> <p><a href="#">201811048303</a>  Title: Ramban cough aushadi  Inventor: Maya Sharma  Filing date: 20/12/2018  Status: Published: 15/02/2019</p> <p><a href="#">201811017566</a>  Title: A formulation for increasing blood platelet counts  Inventor: HarparshantVir Singh  Filing date: 10/05/2018  Status: Published: 01/06/2018</p> <p><a href="#">201621042902</a>  Title: Herbal anti-asthmatic composition and process of preparation thereof  Inventor: Mohammad, MahafoozurrahmanDeen  Filing date:16/12/2016  Status: Published: 27/09/2019</p> <p><a href="#">201621006257</a>  Title: Herbal composition for the treatment of herpes  Inventor: Mehra, Apurve  Filing date:23/12/2016  Status: Published: 20/10/2017</p> <p><a href="#">201641001114</a>  Title: Novel dietary supplementary immune system stimulator formulation and method of preparation thereof  Inventor: Abdulsubahan Abdul Rahman  Filing date: 12/01/2016  Status: Published: 14/07/2017</p> <p><a href="#">1475/CHE/2015</a>  Title: A composition comprising of <i>Glycyrrhiza Glabra</i> extract, and <i>Vitex Negundo</i> extract and uses thereof  Assignee: ITC Life Sciences and Technology Centre  Filing date: 23/03/2015  Status: Published: 30/09/2016</p> <p><a href="#">3464/MUM/2014</a>  Title: A novel synergistic herbal composition for enhancing immunity level in-vivo and in-vitro: its process thereof  Inventor: Sadhana J. Rajput, Reshma A. Jain  Filing Date:03/11/2017  Status: Published: 06/05/2016</p> <p><a href="#">808/MUM/2013</a>  Title: Herbal composition for the treatment of herpes  Assignee: Mehra, Apurve  Filing date:15/03/2013  Status: Published 30/01/2015</p> <p><a href="#">3038/DEL/2012</a>  Title: Herbal cough candy and process for the preparation of the same  Assignee: Amity University  Filing date:28/09/2012  Status: Published 25/04/2014</p> <p><a href="#">1151/DEL/2012</a>  Title: Immune booster herbal composition-internal use medicine  Assignee: Dhruva Kumar Sadh  Filing date:13/04/2012  Status: Published 18/05/2012</p> <p><a href="#">908/DEL/2012</a>  Title: Asthma care herbal composition - internal use medicine  Assignee: Dhruva Kumar Sadh</p>
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	<p>Filing Date: 27/03/2012  Status: Publication 04/05/2012  <a href="#">3286/CHE/2011</a>  Title: A process for preparation of synergistic herbal preparation of extracts of <i>PicrorhizaKurroa</i> and <i>Glycyrrhiza Glabra</i> having medicinal values  Inventor: Anil Kumar M  Filing date: 23/09/2011  Status: Published: 14/06/2013  <a href="#">2716/DEL/2011</a>  Title: A novel ayurvedic formulation for the treatment of cough and other associated symptoms  assignee: akums drugs &amp; pharmaceuticals limited  Filing date:20/09/2011  Status: Published: 22/03/2013  <a href="#">1335/DEL/2011</a>  Title: Ayurvedic/ herbal dry syrup formulation for treatment of respiratory allergies  Assignee: BACFO Pharmaceuticals (India) Ltd  Filing date: 06/05/2011  Status: Published 9/11/2012  <a href="#">2946/MUM/2009</a>  Title: A process for the preparation of herbal extracts of some Indian medicinal plants species of traditional ayurveda, use thereof for anti-mycobacterial activity  Assignee: CSRD, People's Group  Filing date: 21/12/2009  Status: Published: 10/02/2012  <a href="#">2930/MUM/2009</a>  Title: Herbal formulation for respiratory tract problems, cough curiosa and asthma in unique dosage form  Assignee: Vasu Healthcare Pvt. Ltd.  Filing date: 18/12/2009  Status: Published: 30/08/2013  <a href="#">1632/MUM/2009</a>  Title: Herbal tablet, powder and paste for combustion to treat respiratory tract infections and disorders along blood energiser work by way of its vapour inhalation  Inventor: Bharat Manharlal Parikh  Filing date: 17/07/2009  Status: Published: 14/10/2011  <a href="#">1858/DEL/2006</a>  Title: A herbal formulation effective against cough and process for preparation thereof  Assignee: The Director, Central Council For Research In Unani Medicine (CCRUM)  Filing date: 18/08/2006  Status: Published: 04/04/2008  <a href="#">1313/DEL/2006</a>  Title: A preparation for the treatment of running and stuffy nose, productive or non-productive cough with or without fever and to a process for the preparation thereof  Assignee: Central Council For Research Of Ayurveda And Siddha  Filing date: 31/05/2006  Status: Published:07/12/2007  <a href="#">2939/DELNP/2004</a>  Title: A herbal soft drink  Assignee:Council Of Scientific And Industrial Research (National Botanical Research Institute, Lucknow)  Filing Date: 29/09/2004  Status: Published 27/04/2007  <a href="#">2929/MUM/2009</a>  Title: A hepatoprotective herbal composition  Assignee:RatnamShiv Prakash And Pundarikakshudu, Kilambi  Filing Date: 18/12/2009  Status: Published 26/11/2010  <a href="#">3347/DEL/2015</a>  Title: A novel antacid herbal oral powder formulation  Inventor:Narinderpal Singh Aulakh</p>
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	<p>Expired or Lapsed application or status not known</p> <p><a href="#">220700</a>  Title: A bio-enhancer and bioavailability facilitator composition  Assignee: Council Of Scientific And Industrial Research (Central Institute Of Medicinal And Aromatic Plants, Lucknow)  Filing Date: 31/08/2000  Grant date: 25/07/2008  Status: Patent Has Ceased on 02/09/2013</p> <p><a href="#">3338/KOLNP/2006</a>  Title: Herbal composition  Assignee: Lavender Hill Projects Pty Ltd  Filing Date: 13/11/2006  Status: Application Appears To Have Been Abandoned</p> <p><a href="#">2419/DEL/2004</a>  Title: A pharmaceutical composition useful for the treatment of asthma  Assignee: Council Of Scientific &amp; Industrial Research (Institute of Genomics and Integrative Biology, New Delhi)  Filing Date: 02/12/2004  Status: Application Appears To Have Been Abandoned</p> <p><a href="#">236432 (No link on WIPO site)</a>  Title: A process for isolating and purifying Glycyrrhizic Acid (<i>Glycyrrhiza Glabra</i>) roots effective against leishmaniasis and composition containing the same  Assignee: Bose Institute  Filing Date: 23/08/2005  Status: Patent Has Ceased On 24/08/2015</p> <p><a href="#">1622/DELNP/2010</a>  Title: Adhering troches with topically active ingredients for treatment of throat, esophagus, and stomach  Assignee: Orahealth Corporation  Filing Date: 09/03/2010  Legal Status: Application Appears To Have Been Abandoned</p> <p><a href="#">633/MUM/2010</a></p>
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	<p>Title: Herbal composition for oral administration  Assignee: J.B. Chemicals And Pharmaceuticals Ltd.  Filing Date: 10/03/2010  Status: Application Has Been Abandoned  <a href="#">2554/DEL/2011</a></p> <p>Title: Herbal energy drink in different flavours  Assignee:Amity University  Filing Date: 06/09/2011  Status: Application Appears to Have Been Abandoned  <a href="#">3784/CHE/2011</a></p> <p>Title: An immune booster  Assignee:ArvindVarchaswi  Filing Date: 04/11/2011  Status: Application Appears To Have Been Abandoned  <a href="#">136/KOL/2013</a></p> <p>Title: Synergistic herbal composition for the treatment of cough and the process of preparing thereof  Assignee:Pawan Kumar Pareek  Filing Date: 06/02/2013  Status: Application Appears To Have Been Abandoned  <a href="#">217095</a></p> <p>Title: A synergistic composition useful for management of asthma  Assignee: Dabur Pharma Limited And Dabur Research Foundation  Filing Date: 04/06/2001  Status: Patent Has Ceased On 04/06/2010  <a href="#">2522/DEL/2008</a></p> <p>Title: A novel nutraceutical formulation for vitality and virility  Assignee: Amity University  Filing Date: 06/11/2008  Status: Application Has Been Abandoned  <a href="#">1149/DEL/2012</a></p> <p>Title: Liver corrective herbal composition internal use medicine  Inventor: Dhruva Kumar Sadh  Filing Date: 13/04/2012  Status: Application Appears To Have Been Abandoned</p>
Other Key References	<ul style="list-style-type: none"> <li>• <a href="https://pubchem.ncbi.nlm.nih.gov/compound/Diammonium-glycyrrhizinate">https://pubchem.ncbi.nlm.nih.gov/compound/Diammonium-glycyrrhizinate</a></li> <li>• <a href="https://www.nature.com/articles/news030609-16">https://www.nature.com/articles/news030609-16</a></li> <li>• <a href="https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(03)13615-X/fulltext">https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(03)13615-X/fulltext</a></li> </ul>

## 2. Background information

### **About TFORD-COVID19**

*The Principal Scientific Advisor to the GoI, Dr K VijayRaghavan, has constituted a S&T Core Group on COVID19. Under the aegis of the S&T Core Group on COVID19, a Task Force has been constituted focused on Repurposing of Drugs for COVID19 (in short “TFORD-COVID19”). The Task Force is being coordinated by Dr V Premnath, Head, NCL Innovations at CSIR-NCL and Director, Venture Center and Dr Anurag Agarwal, Director, CSIR-IGIB. The Nerve Center for the Coordination is located be at Venture Center, Pune (located in the campus of CSIR-NCL).*

### **Credits**

*Editors: Dr. Priya Nagaraj & Dr Smita Kale; Contributors: Dr. Priya Nagaraj, Dr. Vidula Walimbe, Dr. Smita Kale, Dr. Kirtee Wani, Dr. Tejas Shah, Dr. Swati Joshi, Dr. Manisha Premnath, Dr. Premnath V; Information also contributed by Dr Gopakumar Nair, GNAS and GnanLex.*

### **About Advisory Group**

*The Nerve Center at TFORD-COVID19 has constituted an inter-disciplinary Advisory Group. This Advisory Group reviews the information compiled by the Nerve Center, provides suggestions on data, information sources, organization of data etc. while also providing inputs to refine the analysis and create a structured information base to support decision-making. The Advisory Group also provides expert input and opinions on certain selected points where experience-based inputs are needed. The members of the Advisory Group for each Discussion Paper are listed at <https://nclinnovations.org/covid19/teams/>.*

### **Disclaimer**

*This Medicinal Herbal Brief is a compilation of information available openly with no opinions or judgments or recommendations. This document is meant to compile high-quality information that can form the basis for informed discussion and decision-making. It is not meant to reflect the Government’s position or that of any specific organization or individual. This information should also not be interpreted as guidance for clinical case management.*