

# Supplementary Table 1 PubMed search strategy

[Executed on 02 Jun 2021]

No	Terms	Hits	Facet
#1	"medicine, ayurvedic"[MeSH] OR "plants, medicinal"[MeSH] OR "pharmacognosy"[MeSH] OR "ethnopharmacology"[MeSH] OR "plant extracts"[MeSH] OR "phytotherapy"[MeSH] OR "Ayurveda" OR "Ayurvedic" OR "Herbal Medicine" OR "Phytopharmacology" OR "Phytomedicine" OR "Phytochemistry" OR "Natural chemistry" OR "Medicinal Plants Studies" OR "Marine Plants Research" OR "Ethnobotany" OR "AYUSH"	273,680	Intervention: Ayurveda
#2	"Immune System"[Mesh]	1,185,112	Outcome of interest: Immune system
#3	#1 AND #2	12,732	Intervention + Outcome
	Filters: English	11,333	English language

**Supplementary Table 2 Details of additional literature search**

No	Details of the Resource	Details of the literature search
1	Directory of Open Access Journals (DOAJ); <a href="https://doaj.org/">https://doaj.org/</a>	<p>Since DOAJ does not have an option for refined database searching, the directory was searched using broad search terminologies 'Ayurveda' OR 'Ayurvedic Medicines' on 4<sup>th</sup> June 2021. The journals which are already indexed in PubMed were excluded from the search. Also, since the database does not support exporting the search hits for offline search, the titles and abstracts of all the 368 retrieved articles were screened online, and the details of relevant articles were added manually to the existing list of screened articles.</p> <p>Since AYUSH Research Portal; Portal does not have an option for refined database search, the</p>
2	AYUSH Research Portal; <a href="https://ayushportal.nic.in/">https://ayushportal.nic.in/</a>	

portal which indexes research in Indian Systems of Medicine was searched for studies reporting research in 'Ayurveda', belonging to 'clinical research' of 'Grade A', which included all randomized clinical trials, on 11<sup>th</sup> June 2021. Also, since the database does not support exporting the search hits for offline search, the titles and abstracts of all the 136 retrieved articles were screened online, and the details of relevant articles were added manually to the existing list of screened articles.

Since DHARA does not have an option for refined database search, the DHARA directory that exclusively indexes Ayurvedic Research was searched for 'randomized clinical trials' on 5<sup>th</sup> June 2021. Also, since the

3 Digital Helpline for Ayurveda Research Articles (DHARA);  
<http://www.dharaonline.org/Forms/Home.aspx>

database does not support exporting the search hits for offline search, the titles and abstracts of all the 66 retrieved articles were screened online, and the details of relevant articles were added manually to the existing list of screened articles.

Since ABIM does not have an option for refined database search, the ABIM directory that indexes research in Indian Systems of Medicine was searched using broad search terminologies 'Immune' OR 'Immunomodulatory' OR 'Immune stimulating' OR 'Immune enhancing' on 8<sup>th</sup> June 2021. All 255 hits were exported in CSV format for offline screening, and the records were screened for eligibility using predefined criteria.

5 Targeted Journal Search: Ayu, Journal of  
Ayurveda and Integrative Medicine

6 Google Scholar

Two prominent journals, 'Ayu' and 'Journal of Ayurveda and Integrative Medicine' were selected for targeted journal search through PubMed on 2<sup>nd</sup> June 2021. A total of **181** relevant RCTs reported in these two journals were exported to the grid, deduplicated, and screened for eligibility. Since Google Scholar does not have an option for refined database search, the website was searched using broad search terms 'Ayurveda AND immunomodulatory' on 21<sup>st</sup> June 2021. Also, since the website does not support exporting search hits for offline search, the titles and abstracts of the first **200** hits were screened online, and the details of relevant articles were manually added to

the existing list of  
screened articles.

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**Supplementary Table 3 Detailed composition of composite interventions used in five of the included studies**

No	Name of the study	Name of the composite intervention	Composition: Ayurvedic name ( <i>Scientific Name</i> )
1	Suprabha <i>et al</i> , 2017	Rasayana Avaleha	Shatavari ( <i>Asparagus racemosus</i> ), Ashwagandha ( <i>Withania somnifera</i> ), Gokshura ( <i>Tribulus terrestris</i> ), Kharjura ( <i>Phoenix sylvestris</i> ), Jivanti ( <i>Leptadenia reticulata</i> ), Bala ( <i>Sida cordifolia</i> ), Mudgaparni ( <i>Phaseolus trilobus</i> ), Mashaparni ( <i>Teramnus labialis</i> ), Draksha ( <i>Vitis vinifera</i> ), Vamshalochana ( <i>Bambusa arundinaceae</i> )
2	Gupta <i>et al</i> , 2017	Cyavanaprasa (Dabur)	Pāṭalā ( <i>Stereospermum suaveolens</i> ), Agnimantha ( <i>Clerodendrum phlomidis</i> ), Gambhārī ( <i>Gmelina arborea</i> ), Bilva ( <i>Aegle marmelos</i> ), Syonāka ( <i>Oroxylum indicum</i> ), Gokṣura ( <i>Tribulus terrestris</i> ), Śālaparnī ( <i>Desmodium gangeticum</i> ), Prśniparnī ( <i>Uraria picta</i> ), Bṛhatī ( <i>Solanum indicum</i> ), Kaṇṭakārī ( <i>Solanum surattense</i> ), Pippalī ( <i>Piper longum</i> ), Karkaṭaśṛṅgī ( <i>Pistacia integerrima</i> ), Drākṣā ( <i>Vitis vinifera</i> ), Guḍūcī ( <i>Tinospora cordifolia</i> ), Harītakī ( <i>Terminalia chebula</i> ), Balā ( <i>Sida cordifolia</i> ), Tāmalakī ( <i>Phyllanthus niruri</i> ), Vasā ( <i>Adhatoda vasica</i> ), Jīvantī ( <i>Leptadenia reticulata</i> ), Shaṭī ( <i>Heydichum spicatum</i> ), Mustā ( <i>Cyperus rotundus</i> ), Puṣkara ( <i>Inula racemosa</i> ), Kākanāsikā ( <i>Martynia annua</i> ), Mudgaparnī ( <i>Phaseolus trilobus</i> ), Māṣaparnī ( <i>Teramnus labialis</i> ), Punarnavā ( <i>Boerhavia diffusa</i> ), Utpalā ( <i>Nymphaea stellata</i> ), Sūkṣmaila ( <i>Elettaria cardamomum</i> ), Tvak ( <i>Cinnamomum</i> )

			<p>zeylanicum), Candana Śveta (<i>Santalum album</i>), Vārāhī (<i>Dioscorea bulbifera</i>), Śatāvarī (<i>Asparagus racemosus</i>), Aśvagandhā (<i>Withania somnifera</i>), Vidārī (<i>Pueraria tuberosa</i>), Āmalakī (<i>Emblica officinalis</i>), Ghr̥ta (Clarified butter), Tila taila (<i>Sesamum indicum</i>), Śarkara (Crystal sugar), Madhu (Honey), Vamśa (<i>Bambusa bambos</i>), Tvakpatra (<i>Cinnamomum tamala</i>), Nāgakesara (<i>Mesua ferrea</i>), Abhraka Bhasma (Calcined mica), Mukṭā Piṣṭi (Anhydrous paste of pearl), Akarakarabha (<i>Anacyclus pyrethrum</i>), Lavaṅga (<i>Syzygium aromaticum</i>), Kuṅkuma (<i>Crocus sativus</i>)</p>
3	Ravindran et al, 2014	Varunadi Ghrita	<p>Varuna (<i>Crataeva nurvala</i>), Sairyaka (<i>Barleria prionitis</i>), Sairyaka (<i>Barleria cristata</i>), Sathawari (<i>Asparagus racemosus</i>), Dahana (<i>Plumbago rosea</i>), Morada (<i>Chonemorpha fragrans</i>), Bilwa (<i>Aegle marmelose</i>), Vishanika (<i>Vallaris solanacea</i>), Brihathy (<i>Solanum xanthocarpum</i>), Brihathy (<i>Solanum indicum</i>), Karanja (<i>Pongamia pinnata</i>), Karanja (<i>Holoptelia integrifolia</i>), Jaya (<i>Premna serratifolia</i>), Jaya (<i>Terminalia chebula</i>), Bahala pallava (<i>Moringa oleifera</i>), Darbha (<i>Desmostachya bipinnata</i>), Rujakara (<i>Semecarpus anacardium</i>), Hingu (<i>Ferula assa-foetida</i>)</p>
4	Somarathna et al, 2010	Ranahamsa Rasayana	<p>Talisapatra (<i>Abies spectabilis</i>), Gunja (<i>Abrus precatorius</i>), Lashuna (<i>Allium sativum</i>), Kumari (<i>Aloe vera</i>), Sthula ela (<i>Amomum subulatum</i>), Akarakarabha (<i>Anacyclus pyrethrum</i>), Brahmi (<i>Bacopa monnieri</i>), Kushmanda (<i>Benincasa hispida</i>), Shalmali (<i>Bombax ceiba</i>), Tala (<i>Borassus</i></p>

*flabellifer*), Vijaya (*Cannabis sativa*), Hemadhruma (*Cassia auriculata*), Twak (*Cinnamomum zeylanicum*), Narikela (*Cocos nucifera*), Pitamula (*Coptis teeta*), Dhanyaka (*Coriandrum sativum*), Kunkuma (*Crocus sativus*), Jiraka (*Cuminum cyminum*), Pathabheda (*Cyclea burmanni*), Suksmela (*Elettaria cardomomum*), Vidanga (*Embelia ribes*), Yashtimadhu (*Glycyrrhiza glabra*), Chopachini (*Gynura pseudochina*), Sariva (*Hemidesmus indicus*), Kshiravidari (*Ipomoea mauritiana*), Jatiphala (*Myristica fragrance*), Jatipatri (*Myristica fragrance*), Karavi (*Nigella sativa*), Nilotpala (*Nymphaea stellata*), Ahiphena (*Papaver somniferum*), Amalaki dried (*Phyllanthus emblica*), Amalaki fresh (*Phyllanthus emblica*), Kankola (*Piper cubeba*), Pippali (*Piper longum*), Chitraka (*Plumbago rosea*), Parpati (*Pogostemon heyneanus*), Ikshu (*Saccharum officinarum*), Shweta Candana (*Santalum album*), Kushtha (*Saussurea lappa*), Bhallataka (*Semecarpus anacardium*), Lavanga (*Syzygium aromaticum*), Vibhitaki (*Terminalia bellerica*), Haritaki (*Terminalia chebula*), Guduchi (*Tinospora cordifolia*), Yavani (*Trachyspermum ammi*), Gokhura (*Tribulus terrestris*), Draksha (*Vitis vinifera*), Sharkara (Sugar), Go-dugdha (Cows milk), Go-ghrita (Cows ghee), Madhu (Honey)

5	Gupta <i>et al</i> , 2010	Shilajatu Rasayana	Shilajatu ( <i>Asphaltum punjabinum</i> ), Amalaki ( <i>Phyllanthus emblica</i> ), Guduchi ( <i>Tinospora cordifolia</i> ), Mandukaparni ( <i>Bacopa monnieri</i> )
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**Supplementary Table 4 Detailed results of the risk of bias assessment of the included studies**

No	Study, year	Randomized Controlled Trial Design	D1: Randomizatio process	D5: Bias arising from period and carryover effects	D2: Deviations from intended interventions	D3: Missing outcome data	D4: Measurement of the outcome	D5: Selection of the reported result	Overall risk of bias as per RoB-2 tool#
1	Enesel <i>et al</i> , 2005	Parallel group	-	NA	-	-	+	?	-
2	Ishikawa <i>et al</i> , 2006	Parallel group	+	NA	+	+	+	?	?
3	Brush <i>et al</i> , 2006	Parallel group	?	NA	-	+	+	?	-
4	Schink <i>et al</i> , 2007	Parallel group	+	NA	+	+	+	?	?
5	Purandare <i>et al</i> , 2007	Parallel group	?	NA	?	+	+	?	?
6	Uebaba <i>et al</i> , 2008	Crossover	?	+	+	+	+	?	?
7	Bhat <i>et al</i> , 2010	Parallel group (I)	?	NA	+	+	+	?	?
		Crossover (II)	?	-	+	+	+	?	-
8	Işik <i>et al</i> , 2010	Parallel group	-	NA	?	+	+	?	-
9	Kianbakht <i>et al</i> , 2011	Parallel group	?	NA	+	+	+	?	?
10	Mondal <i>et al</i> , 2011	Crossover	?	+	+	+	+	?	?
11	Nantz <i>et al</i> , 2012	Parallel group	+	NA	+	+	+	?	?
12	Suprabha <i>et al</i> , 2017	Parallel group	?	NA	?	+	+	?	?
13	Gupta <i>et al</i> , 2017	Parallel group	?	NA	?	+	?	?	?
14	Rais <i>et al</i> , 2021	Parallel group	?	NA	+	+	-	?	-
15	Bhaskaran <i>et al</i> , 2019	Parallel group	?	NA	-	-	+	?	-
16	Kumar <i>et al</i> , 2014	Parallel group	-	NA	-	-	-	?	-
17	Ravindran <i>et al</i> , 2014	Parallel group	?	NA	+	+	+	?	?

18	Somarathna <i>et al</i> , 2010	Parallel group	?	NA	-	-	+	?	-
19	Gupta <i>et al</i> , 2010	Parallel group	?	NA	-	-	+	?	-

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**Note:** +: Low risk of bias; ? : Some concerns of bias; -: High risk of bias