

---

## Supplement 1 Search strategies used for the Medline database

#1 functional constipation. ti, ab.

#2 irritable bowel syndrome. mh.

#3 irritable bowel syndromes or syndrome, irritable bowel or Colon, Irritable or Mucous Colitides).ti,ab.

#4 #2 or #3

#5 #1 not #4

#6 Rome. tw.

#7 #5 and #6

#8medicine, Chinese traditional. mh.

#9 (chin\$ adj6 herb\$). tw.

#10 ((china or Chinese) and (tradition\$ adj4 medicine\$)). tw.

#11 (TCM or CHM). tw.

#12 Oriental medicine\$. tw.

#13 (Chinese adj5 medicine\$). tw.

#14 or/8-13

#15 clinical trial. mh.

#16 randomized controlled trials. mh.

#17 randomized controlled trial. pt.

#18 clinical trial. pt.

#18 controlled clinical trial. pt.

#19 (clinic\$ adj2 trial). mp.

#20 (random\$ adj5 control\$ adj5 trial\$). mp.

#21 randomi\$. mp.

#22 (random\$ adj5 (assign\$ or allocat\$ or assort\$ or reciev\$)). mp.

#23 or/15-22

#24 #7 and #14 and #23

---

**Supplement 2 Tabel The Ingredients of the formula in treatment group**

| Study         | Intervention | CHM Formula and Ingredients of treatment group   |
|---------------|--------------|--|
| Bian 2014[13] | CHM          | Desertliving cistanche, astragalus mongholicus, radix paeoniae alba, polygonum multiflorum, semen arecae, semen raphani, seman platycladi  |
| Bin 2011[14]  | CHM          | Radix pseudostellariae, rhizoma atractylodis macrocephalae, astragalus mongholicus, radix paeoniae alba, radix scrophulariae, fructus aurantii immaturus, semen arecae, hemp seed    |
| Bu 2019[15]   | CHM          | Codonopsis pilosula, bitter apricot seed, platycodon grandiflorum, folium perillae, rhizoma atractylodis macrocephalae, fructus aurantii immaturus, Radix adenophorae potanini korsh |
| Cai 2020[16]  | CHM          | Herba Cistanche, Angelica sinensis, Alisma, Fructus aurantii, Fructus aurantii, Cohosh, Astragalus, Atractylodes rhizome, fructus cerevisiae   |
| Cao 2012[17]  | CHM          | Bianmitong capsule   |
| Chen 2011[18] | CHM          | Hemp seed pill   |
| Chen 2012[19] | CHM          | Astragalus mongholicus, fructus aurantii immaturus, rhizoma chuanxiong, radix  |

|                    |     |   |
|--------------------|-----|---|
|                    |     | angelicae dahuricae, flos Lonicerae   |
| Chen H 2014[20]    | CHM | Rhizoma polygonatum, desertliving cistanche, astragalus mongholicus, angelica sinensis, radix et rhizoma rhei, hemp seed, polygonum cuspidatum                    |
| Chen P 2014[21]    | CHM | Semen cuscutae, radix morindae officinalis, dried human placenta, radix bupleuri, rhizoma cyperi, radix rehmanniae preparata, radix achyranthis bidentatae, poria |
| Chen 2016[22]      | CHM | Radix rehmanniae, rhizoma dioscoreae, fructus corni, poria, ramulus cinnamomi, prepared common monkshood daughter root, astragalus                                |
| Chen 2018[23]      | CHM | Radix pseudostellariae, angelica sinensis, semen cassiae, semen persicae, desertliving cistanche, semen raphani, astragalus mongholicus, hemp seed                |
| Chen F.R. 2020[24] | CHM | Astragalus root, radix astragalus root, radix Paeoniae root, ripe ground, purple purple root, Radix Atractylodes rhizome, Radix Angelica root, fructus aurantii   |
| Chen L. 2020[25]   | CHM | Atractylodes, rehmannia radish, semen Raphani, cohosh, paeoniae alba  |
| Cheng 2010[26]     | CHM | Fructus cannabidis, radix et rhizoma rhei, radix paeoniae alba, semen armeniacae amarum,  |

|                |     |   |
|----------------|-----|---|
|                |     | fructus aurantii immaturus,cortex magnoliae officinalis   |
| Cheng 2012[27] | CHM | Fructus aurantii immaturus,rhizoma atractylodis macrocephalae, semen raphani,semen arecae   |
| Chi 2010[28]   | CHM | Linggu heji   |
| Deng 2018[29]  | CHM | Angelica sinensis,desertliving cistanche,prepared common monkshood daughter root, radix et rhizoma rhei,dried ginger, radix liquiritiae,Ginseng ,cortex cinnamomi                               |
| Dou 2014[30]   | CHM | Angelica sinensis,radix achyranthis bidentatae,desertliving cistanche, bitter apricot seed,fructus aurantii immaturus, astragalus mongholicus, rhizoma atractylodis macrocephalae,semen raphani |
| Fu 2012[31]    | CHM | Radix scrophulariae,radix ophiopogonis,radix rehmanniae, astragalus mongholicus,codonopsis pilosula,rhizoma atractylodis macrocephalae, angelica sinensis                                       |
| Gao 2013[32]   | CHM | Astragalus mongholicus,ramulus cinnamomi,radix paeoniae alba, dried ginger,Chinese date,radix liquiritiae,codonopsis pilosula, fructus aurantii immaturus                                       |

|              |     |  |
|--------------|-----|--|
| Gao 2015[33] | CHM | Radix aucklandiae, rhizoma cyperi, herba pogostemonis, astragalus mongholicus, semen arecae, semen raphani, angelica sinensis, mangnolia officinalis, fructus aurantii immaturus, rhizoma atractylodis, rhizoma atractylodis macrocephalae |
| Gu 2013[34]  | CHM | Hemp seed, bush-cherry seed, fructus aurantii immaturus, mangnolia officinalis, membrane of chicken gizzard, 炒 bitter apricot seed   |
| Gu 2020[35]  | CHM | White peony, atractylodes root, rehmannia root   |
| Guo 2018[36] | CHM | Codonopsis pilosula, radix liquiritiae, rhizoma atractylodis macrocephalae, poria, angelica sinensis, radix et rhizoma rhei, bitter apricot seed, pericarpium trichosanthis, fructus hordei germinates                                     |
| He 2015[37]  | CHM | Astragalus mongholicus, codonopsis pilosula, hemp seed, bush-cherry seed, semen persicae, rhizoma atractylodis macrocephalae, pericarpium citri reticulatae  |
| He 2019[38]  | CHM | Poria cocos, zea evil, Chinese yam, astragalus, Codonopsis codonopsis, cooked rehmannia root, peony skin, dogwood meat, white honey  |

|                |     |   |
|----------------|-----|---|
| Hu 2018[39]    | CHM | Xiaoer huashi oral liquid   |
| Huang 2016[40] | CHM | Semen persicae,bitter apricot seed,bush-cherry seed, angelica sinensis, radix et rhizoma rhei,seman platycladi, pericarpium citri reticulatae,hemp seed,radix rehmanniae, polygonum multiflorum |
| Hui 2018[41]   | CHM | Astragalus mongholicus,rhizoma atractylodis macrocephalae, desertliving cistanche,angelica sinensis ,radix achyranthis bidentatae, rhizoma alismatis,rhizoma cimicifugae                        |
| Jiang 2020[42] | CHM | Astragalus membranaceus, white, Immature bitter orange, magnolia bark, Fructus Trichosanthis, Polygonum cuspidatum, Angelica sinensis, almond   |
| Jiao 2018[43]  | CHM | Danggui luhui capsule   |
| Kong 2020[44]  | CHM | Herba cistanche, Achyranthes bidentata, Cinnamon, Epimedium, Atractylodes rhizome, Chinese yam, Fructus aurantii, fructus fructus Aurantii  |
| Lai 2012[45]   | CHM | Astragalus mongholicus,rhizoma atractylodis macrocephalae, desertliving cistanche, angelica sinensis, walnut meat, mangnolia officinalis  |

|              |     |   |
|--------------|-----|---|
| Li 2012[46]  | CHM | Astragalus mongholicus,radix liquiritiae,codonopsis pilosula, angelica sinensis ,pericarpium citri reticulatae, rhizoma cimicifugae   |
| Li 2015[47]  | CHM | Desertliving cistanche,rhizoma atractylodis macrocephalae, astragalus mongholicus,semen coicis, fructus lycii,bush-cherry seed  |
| Li 2016[48]  | CHM | Radix scrophulariae,rhizoma atractylodis macrocephalae, poria,radix liquiritiae,astragalus mongholicus,hemp seed, bitter apricot seed, fructus trichosanthis,fructus aurantii immaturus   |
| Li 2019[49]  | CHM | Radix Pseudostellariae root, Astragalus root, Atractylodes root, Radix Paeoniae Alba, radix Rehmanniae rehmanniae, e-jiao, Angelica root, peach kernel, hemp kernel, Radix Hophyniae preparata, Radix Aucklandiae Miltiorrhizae |
| Lin 2009[50] | CHM | Liuwei anxiao capsule   |
| Lin 2012[51] | CHM | Baizhu qiwu granule   |
| Liu 2013[52] | CHM | Radix bupleuri,radix paeoniae alba,fructus aurantii immaturus, mangnolia officinalis,rhizoma pinelliae, rhizoma atractylodis macrocephalae, fructus perillae  |

|                  |     |   |
|------------------|-----|---|
| Liu LF. 2017[53] | CHM | Radix bupleuri,radix paeoniae alba,codonopsis pilosula, poria, rhizoma atractylodis macrocephalae,fructus aurantii immaturus,mangnolia officinalis,radix liquiritiae                                |
| Liu YL. 2017[51] | CHM | Astragalus mongholicus,radix rehmanniae,fructus lycii, angelica sinensis,fructus aurantii immaturus, mangnolia officinalis, bush-cherry seed,bitter apricot seed,hemp seed,radix liquiritiae        |
| Liu 2018[55]     | CHM | Poria,rhizoma atractylodis macrocephalae, pericarpium citri reticulatae, fructus aurantii immaturus, semen raphani, fructus forsythiae, rhizoma phragmitis, pericarpium trichosanthis               |
| Lv 2012[56]      | CHM | Angelica sinensis,radix achyranthis bidentatae, desertliving cistanche, rhizoma alismatis,rhizoma cimicifugae,fructus aurantii immaturus, rhizoma atractylodis macrocephalae, mangnolia officinalis |
| Lv 2018[57]      | CHM | Radix et rhizoma rhei,rhizome of Chinese twinleaf, fructus aurantii immaturus, mangnolia officinalis, hemp seed, bitter apricot seed,radix liquiritiae  |
| Mu 2019[58]      | CHM | Baifu Tablet, dried ginger, roasted licorice,   |



|               |     |   |
|---------------|-----|---|
|               |     | roasted coho, Cistanche Deserticola, Fructus psoraleae, Cassia twigs, Arene, Herba epimedium  |
| Qian 2014[59] | CHM | Rhizoma atractylodis macrocephalae,radix scrophulariae, radix ophiopogonis,fructus aurantii immaturus,mangnolia officinalis, bitter apricot seed,hemp seed, pericarpium trichosanthis |
| Que 2018[60]  | CHM | Astragalus mongholicus,semen arecae, pericarpium trichosanthis, rhizoma polygonati odorati,rhizoma anemarrhenae, semen cassiae  |
| Ren 2014[61]  | CHM | Runchang pill   |
| Shao 2019[62] | CHM | Herba cistanche, Monkshood, Atractylodes, fructus aurantii, Angelica sinensis, radix platycodonis, bitter almond, asterism, cohosh, semen Raphani                                     |
| Su 2019[63]   | CHM | Herba cistanche, Achyranthes bidentata, Cinnamon, Epimedium, Atractylodes rhizome, Chinese yam, Fructus aurantii, fructus fructus Aurantii  |
| Sui 2012[64]  | CHM | Desertliving cistanche,radix achyranthis bidentatae, cortex cinnamomi, herba epimedii,rhizoma atractylodis macrocephalae, rhizoma dioscoreae  |

|               |     |   |
|---------------|-----|---|
| Sun 2011[65]  | CHM | Astragalus mongholicus,radix pseudostellariae, angelica sinensis, radix rehmanniae,radix paeoniae rubra ,rhizoma chuanxiong radix liquiritiae   |
| Tao 2018[66]  | CHM | Desertliving cistanche,angelica sinensis,radix achyranthis bidentatae, fructus aurantii immaturus,rhizoma cimicifugae,rhizoma alismatis   |
| Wang 2020[67] | CHM | Astragalus astragalus, meat from rong, Codonopsis, raw atractylodes rhizome, dried ginger, cinnamon, Radix Achyranthes bidentata, fiery sesame seed, Immature bitter orange, magnolia officinalis, Fructus Psoraleae fructus, Mirabilis Mirabilis, almond |
| Wang 2004[68] | CHM | Rhizoma atractylodis macrocephalae,Polygonum multiflorum, desertliving cistanche,angelica sinensis, radix paeoniae alba, astragalus mongholicus,fructus aurantii immaturus,fructus trichosanthis  |
| Wang 2011[69] | CHM | Codonopsis pilosula,radix scrophulariae, poria, rhizoma atractylodis macrocephalae, radix liquiritiae,fructus aurantii immaturus,semen raphani  |
| Wang 2013[70] | CHM | Maren capsules  |

|                 |     |   |
|-----------------|-----|---|
| Wang 2014[71]   | CHM | Semen arecae,fructus aurantii immaturus, mangnolia officinalis, haematitum, hemp seed   |
| Wang 2015[72]   | CHM | Tongle granule  |
| Wu 2008[73]     | CHM | Rhizoma atractylodis macrocephalae, astragalus mongholicus ,radix scrophulariae, radix ophiopogonis,radix rehmanniae  |
| Wu 2009[74]     | CHM | Ginseng, astragalus mongholicus, angelica sinensis, pericarpium citri reticulatae, rhizoma cimicifugae, rhizoma atractylodis macrocephalae, radix bupleuri, radix liquiritiae, mangnolia officinalis, hemp seed, semen persicae |
| Wu GL. 2013[75] | CHM | Codonopsis pilosula, astragalus mongholicus, rhizoma cimicifugae, radix bupleuri, rhizoma atractylodis macrocephalae, angelica sinensis, fructus trichosanthis, Radix paeoniae alba, semen cassiae, hemp seed                   |
| Wu JY. 2013[76] | CHM | Astragalus mongholicus ,codonopsis pilosula, rhizoma atractylodis macrocephalae ,angelica sinensis, rhizoma cimicifugae, fructus aurantii immaturus, hemp   |

|              |     |  |
|--------------|-----|--|
|              |     | seed, bitter apricot seed  |
| Xin 2008[77] | CHM | Radix scrophulariae,radix rehmanniae,radix ophiopogonis, radix et rhizoma rhei,radix liquiritiae, codonopsis pilosula, angelica sinensis, desertliving cistanche                       |
| Xin 2014[78] | CHM | Radix adenophorae potanini korsh,radix glehniae, rhizoma atractylodis macrocephalae,radix paeoniae alba, Polygonum multiflorum,fructus mori, desertliving cistanche, angelica sinensis |
| Xu 2013[79]  | CHM | Prepared common monkshood daughter root,radix liquiritiae, dried ginger,mangnolia officinalis,ramulus cinnamomi  |
| Xu 2016[80]  | CHM | Rhizoma atractylodis,rhizoma atractylodis macrocephalae, rhizoma pinelliae,poria,semen raphani,fructus aurantii immaturus,fructus perillae, mangnolia officinalis                      |
| Xu 2018[81]  | CHM | Angelica sinensis,fructus evodiae ,ramulus cinnamomi, ginseng ,radix paeoniae alba,rhizoma chuanxiong, donkey-hide glue,radix ophiopogonis, rhizoma pinelliae                          |
| Xu 2019[82]  | CHM | Atractylodes atractylodes, Radix pseudostellariae, pine seed kernel, cypress seed kernel, melon beertail, polygonum  |

|               |     |  |
|---------------|-----|--|
|               |     | multiflorum, radix Angelicae sinensis  |
| Yan 2020[83]  | CHM | Radix Astragalus, Radix sophorae, Cohosh, Atractylodes, hawthorn, Chinese yam, Ground elm, licorice, dried tangerine peel, sand kernel   |
| Yan 2013[84]  | CHM | Maren capsules   |
| Yan 2016[85]  | CHM | Radix rehmanniae,radix scrophulariae,radix ophiopogonis, bitter apricot seed,angelica sinensis, semen persicae, desertliving cistanche, hemp seed, fructus aurantii immaturus,semen arecae,aloes   |
| Yang 2008[86] | CHM | Desertliving cistanche,Polygonum multiflorum, donkey-hide glue, fructus aurantii immaturus, angelica sinensis,radix achyranthis bidentatae,bitter apricot seed, pericarpium trichosanthis          |
| Yang 2012[87] | CHM | Poria,codonopsis pilosula,rhizoma atractylodis macrocephalae, radix liquiritiae  |
| Yang 2015[88] | CHM | Jiaolong capsule   |
| Yao 2016[89]  | CHM | Radix rehmanniae,angelica sinensis, radixscrophulariae, radix ophiopogonis,hemp seed,semen persicae,fructus aurantii immaturus, radix et rhizoma rhei,desertliving cistanche,fructus trichosanthis |

|               |     |  |
|---------------|-----|--|
| Ye 2020[90]   | CHM | Atractylodes atractylodes rhizome, Fructus Aurantii Immaturus, Angelica angelica, Radix Paeoniae alba, processed liquorice root, Radix Aconitum, almond, sesame seed, Semen Armeniae Acacia  |
| Ye 2016[91]   | CHM | Angelica sinensis, rhizoma cimicifugae, semen persicae, radix liquiritiae, radix rehmanniae, radix rehmanniae preparata, semen arecae, astragalus mongholicus  |
| Yuan 2016[92] | CHM | Rhizoma atractylodis macrocephalae, astragalus mongholicus, codonopsis pilosula, rhizoma cimicifugae, angelica sinensis, radix bupleuri, fructus aurantii immaturus, radix rehmanniae, fructus mori, hemp seed, semen raphani, radix liquiritiae |
| Zeng 2017[93] | CHM | Radix rehmanniae, angelica sinensis, rhizoma atractylodis macrocephalae, bitter apricot seed, pericarpium trichosanthis, hemp seed, bush-cherry seed, semen persicae, desertliving cistanche, semen arecae, fructus aurantii immaturus           |
| Zhan 2016[94] | CHM | Fructus aurantii immaturus, rhizoma atractylodis macrocephalae, astragalus mongholicus, mangnolia officinalis, semen   |

|                     |     |   |
|---------------------|-----|---|
|                     |     | raphani,semen arecae,angelica sinensis,<br>pericarpium trichosanthis  |
| Zhang 2020[95]      | CHM | Atractylodes acanthopanax, fructus<br>acanthopanax, sesame seed, almond, betel<br>nut, liquorice  |
| Zhang B. 2014[96]   | CHM | Yiwenyang huayu method  |
| Zhang Y. 2014[97]   | CHM | Astragalus mongholicus,codonopsis<br>pilosula,radix rehmanniae,radix<br>ophiopogonis,radix scrophulariae, angelica<br>sinensis,desertliving cistanche,fructus<br>corni,rhizoma atractylodis<br>macrocephalae,hemp seed, fructus hordei<br>germinates(burnt) |
| Zhang RZ. 2014[98]  | CHM | Radix ophiopogonis,radix<br>scrophulariae,radix rehmanniae, rhizoma<br>atractylodis macrocephalae, bitter apricot<br>seed,fructus aurantii immaturus, mangnolia<br>officinalis,pericarpium trichosanthis  |
| Zhang HL. 2018[99]  | CHM | Herba pogostemonis,hemp seed,radix<br>aucklandiae, fructus aurantii<br>immaturus,mangnolia officinalis, radix<br>rehmanniae, radix scrophulariae  |
| Zhang YH. 2018[100] | CHM | Fructus aurantii immaturus,mangnolia<br>officinalis, rhizoma pinelliae, rhizoma<br>atractylodis,semen arecae, macrocephalae,  |

|                    |     |  |
|--------------------|-----|--|
|                    |     | radix aucklandiae, bitter apricot seed<br>platycodon grandiflorum, semen raphani   |
| Zhang 2019[101]    | CHM | Pericarpium trichosanthis,radix<br>aucklandiae,radix paeoniae alba, angelica<br>sinensis,fructus aurantii immaturus,radix<br>bupleuri,radix liquiritiae  |
| Zhao 2009[102]     | CHM | Jiaolong capsule   |
| Zhao 2014[103]     | CHM | Radix aucklandiae,radix linderae,fructus<br>aurantii immaturus, radix et rhizoma rhei,<br>lignum aquilariae resinatum produced,<br>semen arecae, hemp seed,bush-cherry seed                      |
| Zhao TX. 2015[104] | CHM | Codonopsis pilosula,rhizoma atractylodis<br>macrocephalae, fructus aurantii immaturus,<br>Desertliving cistanche, fructus hordei<br>germinates   |
| Zhao JF. 2015[105] | CHM | Codonopsis pilosula, radix liquiritiae,fructus<br>crataegi, medicated leaven, semen raphani,<br>rhizoma membrane of chicken gizzard,<br>pericarpium citri reticulata                             |
| Zhao ZY. 2018[106] | CHM | Radix bupleuri,bush-cherry seed,rhizoma<br>atractylodis macrocephalae, poria,rhizoma<br>pinelliae,codonopsis pilosula,pericarpium<br>citri reticulatae, radix liquiritiae<br>ginger,Chinese date |
| Zhao 2019[107]     | CHM | Atractylodes atractylodes, Radix Astragali,  |



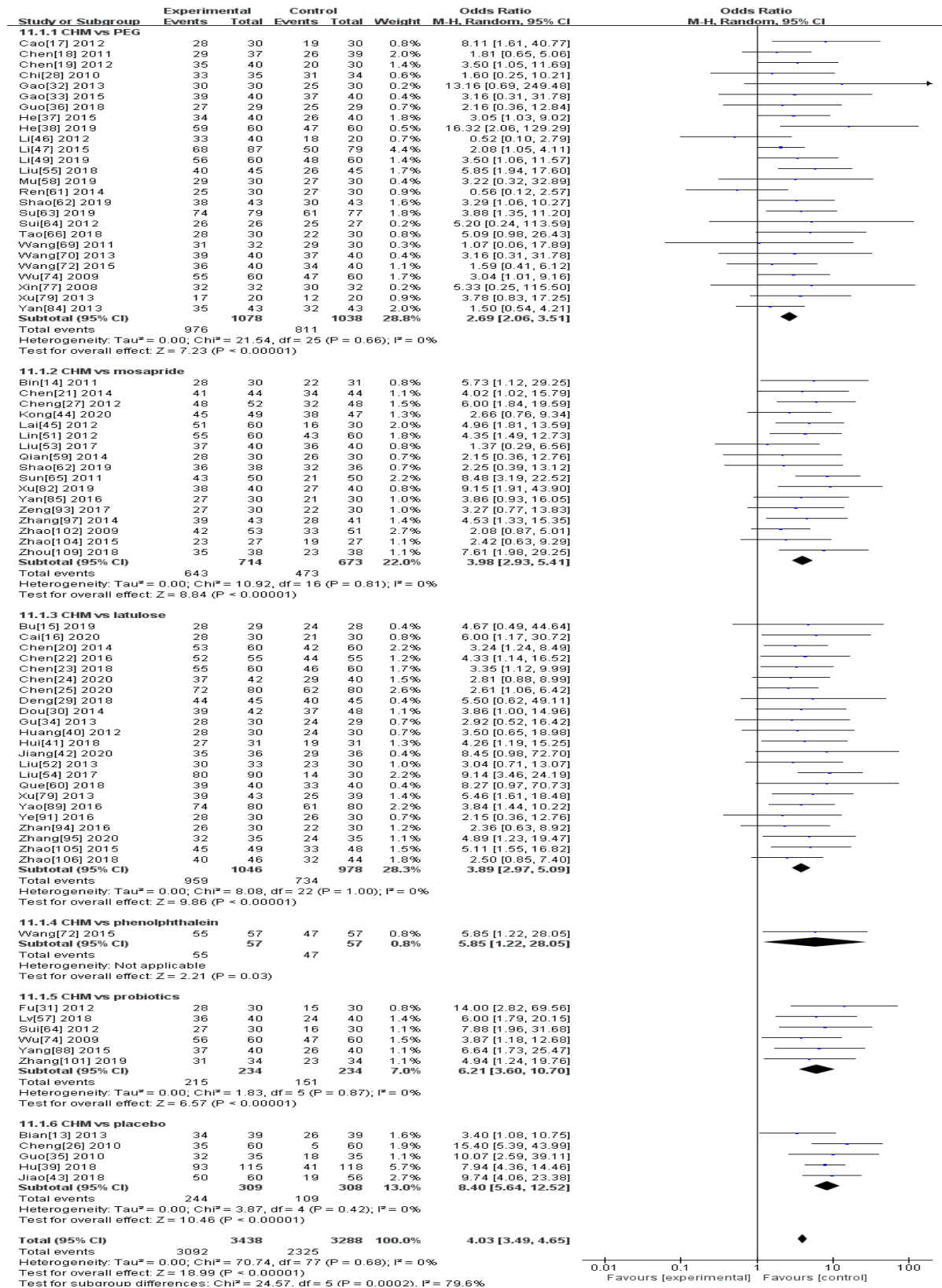
|                   |     |  |
|-------------------|-----|--|
|                   |     | Radix Astragali, Rhizoma atractylodis,<br>Chinese yam, Ophiopogonis, Radix Ginseng,<br>radix Paeoniae alba, Trichosanthes<br>trichosanthis, fire sesame seed                                 |
| Zhong 2018[108]   | CHM | Semen raphani,fructus aurantii<br>immaturus,medicated leaven,hemp<br>seed,poria,mangnolia officinalis,fructus<br>amomi ,rhizoma dioscoreae,radix<br>aucklandiae                              |
| Zhou F. 2018[109] | CHM | Astragalus mongholicus,radix<br>rehmanniae,rhizoma atractylodis<br>macrocephalae,angelica sinensis,radix<br>ophiopogonis,Polygonum<br>multiflorum,fructus trichosanthis,radix<br>liquiritiae |

---

PS: CHM: Chinese herbal medicine.



## Supplement 4 The figure of forest plot for Global Symptom



---

Figure: Forest plot of randomized controlled trials in patients with functional constipation comparing CHM with PEG/ mosapride/ latulose/ phenolphthalein/ probiotics/ placebo. Odds Ratio (95% CIs) for Global Symptom are shown.

## Supplement 5 The figure of forest plot for Bristol Stool Scale

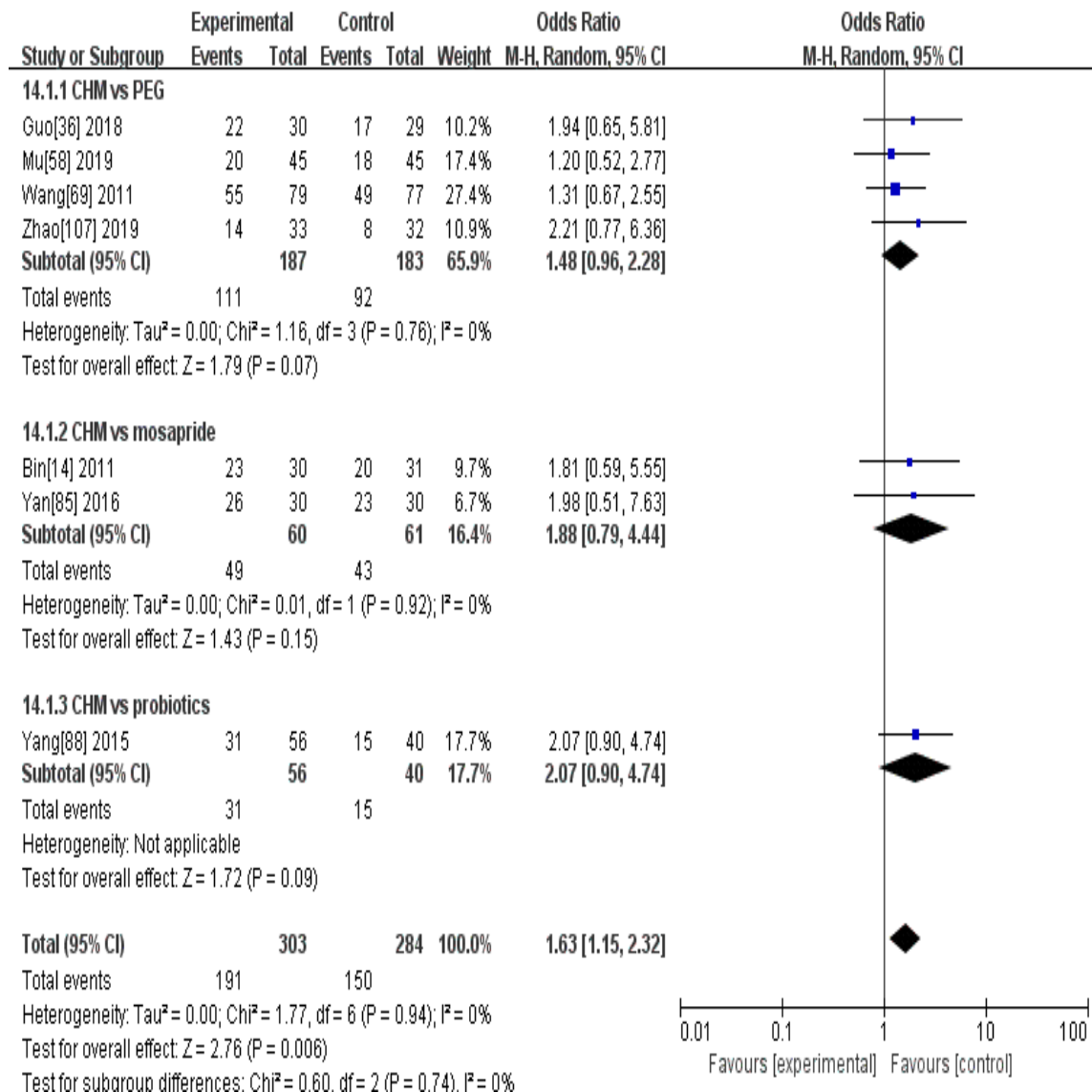


Figure: Forest plot of randomized controlled trials in patients with functional constipation comparing CHM with PEG/ mosapride/ latulose/ phenolphthalein/ probiotics/ placebo. Odds Ratio (95% CIs) for Bristol Stool Scale are shown.