

Supplementary Table S1. Representative prescriptions for allergic rhinitis analyzed in this study.

Prescription	Kun	Shin	Choa	Sa
Socheongryong-tang ¹³	Ephedra intermedia	Zingiber officinale Roscoe	Schisandra chinensis Baillon	Glycyrrhiza glabra
	Cinnamomum cassia	Asiasarum sieboldii	Paeonia lactiflora Pallas	
			Pinellia ternata	
Okbyungpoong-san ¹⁴	Astragalus membranaceus	Atractylodes macrocephala Koidzumi	Saposhnikovia divaricata	
Bojungikgi-tang ¹³	Astragalus membranaceus	Panax ginseng	Angelica gigas Nakai	Glycyrrhiza glabra
		Glycyrrhiza glabra	Citrus unshiu Markovich	
		Atractylodes macrocephala Koidzumi	Cimicifuga dahurica Maximowicz	
			Bupleurum falcatum	
Mahwangbujaseshin-tang ¹⁴	Ephedra intermedia	Asiasarum sieboldii		
	Aconitum carmichaelii			
Hyongeyonggyo-tang	Schizonepeta tenuifolia Briquet			
	Bupleurum falcatum Linné			
	Ligusticum chuanxiong			
	Angelica gigas Nakai			
	Rehmannia glutinosa Liboschitz ex Steudel			
	Paeonia lactiflora Pallas			
	Angelica dahurica			
	Saposhnikovia divaricate			
	Mentha arvensis Linné var. piperascens Malinvaud ex Holmes			
	Gardenia jasminoides Ellis			
	Scutellaria baicalensis Georgi			
	Platycodon grandiflorum A. De Candolle			
	Forsythia suspensa Vahl			
	Glycyrrhiza glabra			
Samsocum ¹³	Perilla frutescens Britton	Angelica decursiva	Panax ginseng	Glycyrrhiza glabra
	Pueraria lobata	Pinellia ternata	Poria cocos	
		Platycodon grandiflorum A. De Candolle	Aucklandia Decne.	lappa
		Citrus unshiu Markovich		
		Citrus aurantium		
Galgeun-tang ¹⁵	Pueraria lobata	Ephedra intermedia	Cinnamomum cassia	Glycyrrhiza glabra

			Paeonia lactiflora Pallas	Zingiber officinale Roscoe
				Zizyphus jujuba Miller
Yeotaectonggi-tang ¹⁶	Astragalus membranaceus	Atractylodes lancea DC. Ostericum koreanum Aralia continentalis Saposhnikovia divaricata Cimicifuga dahurica Maximowicz Pueraria lobata Glycyrrhiza glabra Ephedra intermedia Rubia akane Nakai Angelica dahurica Zingiber officinale Roscoe Zizyphus jujuba Miller Allium fistulosum Linné		
Younggamgangmisinhayin- tang ¹⁷	Poria cocos	Zingiber officinale Roscoe Asiasarum sieboldii	Schisandra chinensis Baillon Prunus armeniaca L. var. ansu Maxim.	Glycyrrhiza glabra Pinellia ternata
Insampaedok-san	Angelica decursiva Aralia continentalis Bupleurum falcatum Citrus aurantium L. Cnidium officinale Makino Forsythia viridissima Lindl. Glycyrrhiza uralensis Fisch. Lonicera japonica Thunb. Mentha arvensis L. Ostericum koreanum Kitag. Panax ginseng C. A. Mey. Platycodon grandiflorus A. DC. Poria cocos Wolf Saposhnikovia divaricata Schischk. Schizonepeta tenuifolia Briq. Zingiber officinale Roscoe			
Yukmijihwang-tang ¹³	Rehmannia glutinosa Liboschitz ex Steudel	Cornus officinalis Siebold et Zuccarini Dioscorea batatas Decaisne	Alisma orientale (Sam.) Juz. Paeonia suffruticosa Andrews Poria cocos	
Maekmundong-tang ¹³	Ophiopogon japonicus Ker- Gawler	Panax ginseng Glycyrrhiza glabra Oryza sativa Linné Zizyphus jujuba Miller	Pinellia ternata	Glycyrrhiza glabra

Supplementary Table S2. Calculation process of disease specificity

Herb	Frequency in TCMID	TF	Ln(IDF)	TF x LN(IDF) x 100
<i>Ephedra intermedia</i>	1753	0.057143	3.287307	18.78461266
<i>Pueraria lobata</i>	1240	0.042857	3.633524	15.57224761
<i>Poria cocos</i>	3739	0.057143	2.529818	14.45610072
<i>Pinellia ternata</i>	4086	0.057143	2.441069	13.94896757
<i>Glycyrrhiza glabra</i>	11659	0.1	1.392557	13.92557407
<i>Asiasarum sieboldii</i>	2044	0.042857	3.133727	13.43025921
<i>Cinnamomum cassia</i> Presl	633	0.028571	4.305921	12.30263051
<i>Bupleurum falcatum</i>	2712	0.042857	2.850949	12.21835479
<i>Platycodon grandiflorum</i>	2775	0.042857	2.827985	12.11993603
<i>Astragalus membranaceus</i>	2980	0.042857	2.756713	11.81448223
<i>Angelica decursiva</i>	1015	0.028571	3.833747	10.95356345
<i>Aralia continentalis</i>	1137	0.028571	3.720243	10.62926459
<i>Panax ginseng</i>	7553	0.057143	1.826691	10.43823421
<i>Saposhnikovia divaricata</i>	4181	0.042857	2.418085	10.36322301
<i>Schisandra chinensis</i> Baillon	1821	0.028571	3.24925	9.283571487
<i>Atractylodes macrocephala</i> Koidzumi	5469	0.042857	2.14954	9.212314444
<i>Cimicifuga dahurica</i> Maximowicz	2066	0.028571	3.123021	8.92291843
<i>Ostericum koreanum</i>	2204	0.028571	3.058362	8.738176943
<i>Angelica dahurica</i>	2325	0.028571	3.004916	8.585473663
<i>Zingiber officinale</i> Roscoe	2847	0.028571	2.80237	8.006771466
<i>Citrus aurantium</i>	2858	0.028571	2.798514	7.995753548
<i>Paeonia lactiflora</i> Pallas	3228	0.028571	2.676773	7.64792306
<i>Citrus unshiu</i> Markovich	3829	0.028571	2.506032	7.160091854
<i>Ligusticum chuanxiong</i>	4140	0.028571	2.42794	6.936971524
<i>Angelica gigas</i> Nakai	8262	0.028571	1.736969	4.962768949

Supplementary Table S3. Compound-target interactions of overlapped genes between targets of AR-specific herbs and AR-related genes

Herb	Compound	Gene	Herb	Compound	Gene
<i>Ephedra intermedia</i>	apigenin	CAT	<i>Asiasarum sieboldii</i>	pentadecanoic acid	TBXA2R
	styrene	CAT		hexadecanoic acid	TBXA2R
	ethanol	CAT		camphor	NPY
	apigenin	PTGS2	<i>Cinnamomum cassia</i>	styrene	CAT
	styrene	PTGS2		styrene	PTGS2
	dodecanoic acid	PTGS2		cinnamaldehyde	PTGS2
	lauric acid	PTGS2	<i>Bupleurum falcatum</i>	camphor	NPY
	hexadecanoic acid	PTGS2		coumarin	NPY
	ethanol	PTGS2		quercetin	CAT
	hexanoic acid	HRH1		lauric acid	PTGS2
	pentadecanoic acid	HRH1		palmitic acid	PTGS2
	dodecanoic acid	HRH1		quercetin	PTGS2
	lauric acid	HRH1		lauric acid	HRH1
	hexadecanoic acid	HRH1		palmitic acid	HRH1
	hexanoic acid	TBXA2R		lauric acid	TBXA2R
	pentadecanoic acid	TBXA2R		palmitic acid	TBXA2R
	dodecanoic acid	TBXA2R	<i>Astragalus membranaceus</i>	quercetin	CAT
	lauric acid	TBXA2R		quercetin	PTGS2
	hexadecanoic acid	TBXA2R	<i>Angelica decursiva</i>	adenine	PTGS2
	phenethylamine	VIP		coumarin	NPY
	ethanol	VIP		camphor	NPY
	camphor	NPY	<i>Panax ginseng</i>	palmitic acid	PTGS2
	ethanol	NPY		hexadecanoic acid	PTGS2
	apigenin	CFTR		adenine	PTGS2
	octanol	CFTR		adenosine	IL13
	1-octanol	CFTR		pentadecanoic acid	HRH1
	ethanol	CFTR		palmitic acid	HRH1
				hexadecanoic acid	HRH1
<i>Pueraria lobata</i>	genistein	PTGS2		protopine	HRH1
	genistein	CFTR			
<i>Poria cocos</i>	adenine	PTGS2		pentadecanoic acid	TBXA2R
<i>Pinellia ternata</i>	glycine	CAT		palmitic acid	TBXA2R
	gamma-aminobutyric acid	NPY		hexadecanoic acid	TBXA2R
<i>Asiasarum sieboldii</i>	hexadecanoic acid	PTGS2		adenosine	VIP
	sesamol	PTGS2		adenosine	NPY
	pentadecanoic acid	HRH1		adenosine	CFTR
	hexadecanoic acid	HRH1	<i>Saposhnikovia divaricata</i>	octanol	CFTR