

Supplementary Table 1: Study parameters and suggested mechanism (s) of the included oral administration of herb and their active constituents' studies.

Herb Name	Sample Type	Experimental Outcomes	Proposed Mechanism	References
<i>Angelica gigas</i> Nakai	Ethanolic extract (Dried whole plant)	↓dermatitis severity ↓serum IgE ↓serum IL-6 ↓serum & tissue TNF- α ↓serum histamine ↓MAPKs phosphorylation (ERK, JNK & p38)	Suppression of both Th1 & Th2 cytokines via inhibition of MAPK & NF- κ B signaling pathways	(102)
<i>Artemisia caruifolia</i> Buch. -Ham. ex Roxb.	Ethanolic extract (Dried whole plant)	↓dorsal skin thickness ↓skin lesions ↓ear thickness	Restoration in dorsal skin thickness and restrained edema in ear and skin	(144)
<i>Ribes fasciculatum</i> var. <i>chinense</i> MAX.	Ethanolic extract (Roots)	↓serum IgE	Analysis on signaling pathway was not performed	(54)
<i>Sanguisorba officinalis</i> L. (Rosaceae)	Ethanolic extract (Roots)	↓mast cell count ↓serum IgE ↓skin eosinophils ↓scratching frequency ↓epidermal thickness	Suppression of serum IgE level	(146)
<i>Poria cocos</i> F.A. Wolf	Ethanolic extract (Bark)	↓dermatitis severity ↓tissue IL-4 ↑tissue IL-10 (anti-inflammatory) ↓epidermal thickness	Suppression of one Th2 cytokine (IL-4) but enhancement of another Th2 cytokine (IL-10)	(6)

			Analysis on signaling pathway was not performed
<i>Salvia plebeia</i> R. Br. (Lamiaceae)	Ethanolic extract (Dried whole plant)	↓ mast cell count ↓ serum IgE ↓ skin eosinophils ↓ tissue TNF- α , IFN- γ , IL-4, IL-13, IL-31 & Th17 ↓ epidermal & dermal thickness ↓ serum histamine	Suppression of both Th1 & Th2 cytokines (20)
<i>Helianthus tuberosus</i> L.	Ethanolic extracts (Tubers)	↓ dermatitis severity ↓ mast cell count ↓ serum IgE, IL-6 ↓ tissue TNF- α ↓ serum histamine ↓ epidermal thickness ↓ ICAM-1 and VCAM-1 expression ↑ filaggrin expression	Suppression of both Th1 & Th2 cytokines and restoration of skin barrier (58)
<i>Tabebuia avellanedae</i> Lorentz ex Griseb.	Ethanolic extract (N/A)	↓ dermatitis severity ↓ serum IgE, IL-4 & IFN- γ ↓ tissue mRNA IL-4, IL-5 & IFN- γ No significant changes of IL-12 ↓ mRNA IL-4, IL-5, IFN- γ & IL-12 ↓ epidermal thickness ↓ serum histamine ↓ Syk/NF κ B pathway	Suppression of both Th1 & Th2 cytokines via inhibition of NF- κ B signaling pathway (108)
<i>Artemisia argyi</i> H. Lév. & Vaniot	Ethanolic extract (N/A)	↓ skin lesions ↓ serum IgE, IL-1 β , IL-4, IL-6 ↓ mRNA IL-4, IL-6, IFN- γ , IL-1 β , TNF- α & GM-CSF ↓ serum histamine ↓ tissue TGF- β 1 expression ↓ Lyn, Syk, PI3K/Akt & I κ B α phosphorylation ↓ MAPKs phosphorylation (ERK, JNK & p38)	Suppression of both Th1 & Th2 cytokines via inhibition of MAPKs signaling pathway (34)
<i>Persicaria tinctoria</i> (Aiton) Spach (Naju Jjok)	Distilled water extract	↓ dermatitis severity ↓ serum IgE ↓ mRNA TSLP, IL-4, IFN- γ ↓ mRNA IL-6, TNF- α , TARC	Suppression of both Th1 & Th2 cytokines (35)

	(Dried whole plant)	↓protein IL-4 & IL-6 ↓serum IL-4 ↓caspase-1 expression No significant changes in the scratching & serum histamine	Analysis on signaling pathway was not performed
<i>Angelica dahurica</i> (Hoffm.) Benth. & Hook.f. ex Franch. & Sav.	Distilled water extract (N/A)	↓mast cell count ↓serum IgE, IL-6, IL-10 & IL-12 ↓CD4+ (total T cells) ↓number of WBCs, ↓mRNA IL-4, IL-6 & TNF- α	Suppression of both Th1 & Th2 cytokines Analysis on signaling pathway was not performed (69)
<i>Ixeris dentata</i> (Thunb.) Nakai	Distilled water extract (N/A)	↓serum IgE ↓ MAPKs phosphorylation (ERK, JNK, p38) ↓I κ B α & NF κ B phosphorylation	Inhibition of MAPKs & NF- κ B signaling pathways (49)
<i>Panax ginseng</i> C.A. Mey.	Distilled water extract (N/A)	↓dermatitis severity ↓mast cell count ↓serum IgE ↓blood eosinophils ↓ceramidase (enzyme) ↓TSLP, IL-6 & TNF- α , TARC ↓epidermal thickness ↓MAPKs phosphorylation (ERK, JNK & p38) ↑filaggrin levels ↓TEWL ↑skin hydration	Suppression of both Th1 & Th2 cytokines via inhibition of MAPKs signaling pathway and restoration of skin barrier (109)
<i>Panax ginseng</i> Meyer	Water extract (Roots)	↓serum IgE, IL-6 ↓tissue TARC & MDC ↓MAPKs phosphorylation (ERK, JNK & p38) ↓I κ B α & NF κ B expression	Suppression of Th2 cytokines via inhibition of MAPKs & NF- κ B signaling pathways (60)
<i>Polygala tenuifolia</i> Willd.	Distilled water extract (Roots)	↓dermatitis severity ↓serum IgE ↓mRNA TNF- α & IL-4 ↓scratching frequency ↓serum histamine ↓epidermal thickness	Suppression of both Th1 & Th2 cytokines Analysis on signaling pathway was not performed (126)
<i>Liriope muscari</i> (Decne.) L.H. Bailey	Water extract (Roots)	↓mast cell count ↓serum IgE ↓epidermal thickness	Suppression of mast cell count & serum IgE level (72)

		↓ear thickness ↓lymph nodes weight	Analysis on signaling pathway was not performed
<i>Saussurea lappa</i> (Decne.) C.B. Clarke	Methanolic extract (Dried whole plant)	↓mRNA CCR1, IL2R β ↓mRNA PI3Kca, IL20R β	Suppression of chemokine (CCR1), interleukins (IL2R β , IL20R β) & enzyme (PI3Kca) (87)
<i>Saussurea lappa</i> (Decne.) C.B. Clarke	Methanolic extract (Dried whole plant)	↓dermatitis severity ↓mast cell count ↓serum IgE ↓plasma TARC ↓epidermal hyperplasia	Suppression of mast cell count, serum IgE & chemokine (TARC) (86) Analysis on signaling pathway was not performed
<i>Dendrobium officinale</i> Kimura & Migo	Ethyl acetate extract (Stems)	↓mast cell count ↓serum IgE ↓epidermal thickness ↓tissue IL-4 ↑tissue IFN- γ No significant changes of IL-6	Suppression of Th2 cytokines and elevation of Th1 cytokines (137) Analysis on signaling pathway was not performed
<i>Patrinia scabiosifolia</i> Link	DMSO extract (Dried whole plant)	↓dermatitis severity ↓serum IgE, AST & ALT ↓tissue IL-4, IL-5, IL-13 ↓eotaxin ↓epidermal atrophy, hypertrophy ↓hyperkeratosis ↑filaggrin expression ↓JNK1, JNK2 & NF- κ B phosphorylation	Suppression of Th2 cytokines via inhibition of NF- κ B signaling pathway and restoration of skin barrier (13)
Byakkokeishito • Gypsum (natural hydrous calcium sulfate)	Mixture (Water extracts)	↓serum IgE ↓ear swelling	Suppression of IgE- mediated triphasic skin reaction (90)

<ul style="list-style-type: none"> Rhizome of <i>Anemarrhena asphodeloides</i> Bunge Bark of the trunk of <i>Cinnamomum verum</i> J. Presl Seed of <i>Oryza sativa</i> L. Root and stolon of <i>Glycyrrhiza uralensis</i> Fisch. ex DC. 		Analysis on signaling pathway was not performed
Qingre-Qushi		
<ul style="list-style-type: none"> <i>Hedyotis diffusa</i> Willd. <i>Taraxacum</i> (no specific species was mentioned) <i>Xanthium sibiricum</i> Patrin ex Widder <i>Sophora flavescens</i> Aiton 	Mixture (Water extracts)	<p>↓dermatitis severity ↓serum IgE No significant changes in IFN-γ & TNF-α ↓mRNA IL-4 & IL-13 ↓tissue IL-33 & ST2 (its receptor) ↓scratching frequency ↓epidermal thickness</p> <p>Suppression of Th2 cytokines</p> <p>Analysis on signaling pathway was not performed (14)</p>
Yu-Ping-Feng-San		
<ul style="list-style-type: none"> <i>Astragalus mongholicus</i> Bunge <i>Atractylodes macrocephala</i> Koidz. <i>Saposhnikovia divaricata</i> (Turcz. Ex Ledeb.) Schischk. 	Mixture (Water extracts)	<p>↓ear swelling ↓serum IgE, IL-4 ↓, IL-5 ↓, IL-13 No significant changes in tissue IFN-γ</p> <p>Suppression of Th2 cytokines</p> <p>Analysis on signaling pathway was not performed (148)</p>
Yu-Ping-Feng-San		
<ul style="list-style-type: none"> <i>Astragalus mongholicus</i> Bunge <i>Atractylodes macrocephala</i> Koidz. 	Mixture (Water extracts)	<p>↓tissue IL-4, IL-5, IL-9, IL-13 ↓protein & mRNA TSLP & IL-33 ↓ear swelling</p> <p>Suppression of Th2 cytokines</p> <p>Analysis on signaling pathway was not performed (138)</p>

• <i>Saposhnikovia divaricata</i> (Turcz. ex Ledeb.) Schischk.	Pentaherbs		
• <i>Lonicera japonica</i> Thunb.			
• <i>Mentha canadensis</i> L.			Suppression both Th1 & Th2 cytokines
• <i>Paeonia suffruticosa</i> Andrews	Mixture (Water extracts)	↓ mast cell count ↓ serum IgE ↓ skin eosinophils ↓ serum IL-4 ↓, IL-5 ↓, IL-12 ↓ epidermal thickness	Analysis on signaling pathway was not performed (131)
• <i>Atractylodes lancea</i> (Thunb.) DC.			
• <i>Phellodendron amurense</i> Rupr.			
Hataedock		Restoration in lipid barrier formation and epidermal structures & suppression of epidermal inflammation	
• <i>Glycine max</i> (L.) Merr.	Mixture (Water extracts)	↓ dermatitis severity ↓ epidermal thickness ↑ levels of filaggrin, involucrin & loricrin ↓ papillary dermal edema	(64)
• <i>Artemisia caruifolia</i> Buch.-Ham. ex Roxb.			
• <i>Morus alba</i> L.			Analysis on signaling pathway was not performed
Hataedock		↓ dermatitis severity ↓ angiogenesis ↓ epithelial hyperplasia ↑ filaggrin ↑ liver X factor (LXR) ↓ protein kinase C (PKC) ↓ FcεRI, Substance P, Matrix metalloproteinases (MMP)-9 & 5-hydroxytryptamine (HT) ↓ tissue IL-4, IL-13, STAT-6 & CD40+ ↓ NFκB p65, p-IκB & iNOS	
• <i>Coptis japonica</i> (Thunb.) Makino,	Mixture (Water extracts)		Suppression of Th2 cytokines via inhibition of NF-κB signaling pathway and restoration of skin barrier (12)
• <i>Glycyrrhiza uralensis</i> Fisch. ex DC.			
Hataedock	Mixture	↓ dermatitis severity ↓ protein kinase C (PKC)	Suppression of Th2 cytokines and (11)

• <i>Coptis chinensis</i> Franch.	(Water extracts)	↑liver X factor (LXR) ↓MMP & Substance P ↓tissue IL-4 ↓mast cell degranulation ↓epidermal hyperplasia ↓tissue TNF- α , p-I κ B, iNOS & COX-2	restoration of skin barrier
• <i>Glycyrrhiza uralensis</i> Fisch. ex DC.			

Soshiho-tang

• <i>Bupleurum falcatum</i> Linne			
• <i>Pinellia ternate</i> Breitenbach			
• <i>Zingiber officinale</i> Roscoe			
• <i>Scutellaria baicalensis</i> Georgi	Mixture (Distilled water extracts)	↓serum IgE, ↓serum IL-4 ↓tissue TNF- α , IL-1 β & IL-6 ↓epidermal & dermal thickness ↓ICAM-1 & NF κ B expressions	Suppression of both Th1 & Th2 cytokines via inhibition of NF- κ B signaling pathway
• <i>Panax ginseng</i> C.A. Meyer			(79)
• <i>Glycyrrhiza uralensis</i> Fischer			
• <i>Zizyphus jujube</i> Miller var. <i>inermis</i> Rehder			

Gamisasangja-tang

• <i>Stemonae sessilifolia</i> (Miq.) Miq.			
• <i>Spirodela polyrhiza</i> (L.) Schleid.		↓dermatitis severity ↓hyperkeratosis & hemorrhage	Suppression of Th2 cytokines
• <i>Cnidium monnierii</i> (L.) Cusson	Mixture (Distilled water extracts)	↓mast cell count ↓plasma IgE ↓total leukocytes ↓tissue IL-31, IL-4, IL-5, IL-13 ↓plasma eotaxin & TARC	Analysis on signaling pathway was not performed
• <i>Sophora flavescens</i> Aiton			(106)
• <i>Angelica gigas</i> Nakai			
• <i>Clematis terniflora</i> var. <i>mandshurica</i> (Rupr.) Ohwi			

SSC201			
• <i>Stemonia japonica</i> (Blume) Miq.	Mixture (Distilled water extracts)	↓dermatitis severity ↓mast cell count ↓serum IgE ↓blood eosinophils ↓serum eotaxin & TARC ↓tissue IL-4, IL-5 & IL-13 No significant changes of IFN- γ ↓CD4+ & CCR3+ ↓scratching frequency ↓epidermal & dermal thickness	Suppression of Th2 cytokines
• <i>Spirodela polyrhiza</i> (L.) Schleid.			Analysis on signaling pathway was not performed
• <i>Cnidium monnieri</i> (L.) Cusson			(105)

CP001			
• <i>Houttuynia cordata</i> Thunb			Suppression of Th2 cytokines
• <i>Rehmannia glutinosa</i> (Gaertn.) DC.	Mixture (Ethanolic extracts)	↓mast cell count ↓serum IgE ↓mRNA IL-4 & IL-13	Analysis on signaling pathway was not performed
• <i>Betula platyphylla</i> var. <i>japonica</i>			(66)
• <i>Rubus coreanus</i> Miq.			

Huang-Lian-Jie-Du

• <i>Coptis chinensis</i> Franch.		↓dermatitis severity	
• <i>Scutellaria baicalensis</i> Georgi	Mixture (Ethanolic extracts)	↓mast cell count ↓serum IgE, IL-4, TNF- α & TSLP ↓epidermal thickness ↓serum histamine ↓MAPKs phosphorylation (p38, JNK and ERK1/2)	Suppression of both Th1 & Th2 cytokines via inhibition of MAPKs & NF- κ B signaling pathways
• <i>Phellodendron chinense</i> C.K. Schneid.			(15)
• <i>Gardenia jasminoides</i> J. Ellis			

Sanpaocao

• <i>Cardiospermum halicacabum</i> L.			Suppression of serum IgE level
• <i>Physalis angulata</i> L.	Mixture (Ethanolic extracts)	↓serum IgE ↓ear swelling & thickening	Analysis on signaling pathway was not performed
• <i>Ludwigia adscendens</i> (L.) H. Hara			(121)

BuShenYiQi			
<ul style="list-style-type: none"> • <i>Astragalus mongholicus</i> Bunge • <i>Epimedium sagittatum</i> (Siebold & Zucc.) Maxim • <i>Rehmannia glutinosa</i> (Gaertn.) DC. 	Mixture (N/A)	<p>↓dermatitis severity ↓mast cell count ↓serum IgE, IL-4 & IL-5 ↑serum IFN-γ ↓epidermal and dermal thickness ↓lymphocyte count ↓serum ACTH (hormone) & corticosterone</p>	<p>Suppression of Th2 cytokines and Elevation of Th1 cytokine (68)</p> <p>Analysis on signaling pathway was not performed</p>
Yupingfeng			
<ul style="list-style-type: none"> • <i>Astragalus mongholicus</i> Bunge • <i>Atractylodes macrocephala</i> Koidz. • <i>Saposhnikovia divaricata</i> (Turcz. ex Ledeb.) Schischk. 	Mixture (N/A)	<p>↓EASI (dermatitis severity) ↓epidermal thickness ↓TEWL ↓ protein AQP3</p>	<p>Acceleration of wound healing and restoration of skin barrier via down regulation of AQP3 (membrane transporter) (147)</p> <p>Analysis on signaling pathway was not performed</p>
PTQX			
<ul style="list-style-type: none"> • <i>Atractylodes macrocephala</i> Koidz. • <i>Pseudostellaria heterophylla</i> (Miq.) Pax • <i>Dioscorea oppositifolia</i> L. • <i>Coix lacryma-jobi</i> var. <i>maya</i> (Rom.Caill.) Stapf • <i>Imperata cylindrica</i> (L.) P. Beauv. • <i>Forsythia suspensa</i> (Thunb.) Vahl 	Mixture (N/A)	<p>↓dermatitis severity ↓ear thickness ↓mast cell count ↓serum IgE ↓epidermal thickness ↓scratching frequency ↓CD4+ proliferation</p>	<p>Suppression of mast cell count & serum IgE level (139)</p> <p>Analysis on signaling pathway was not performed</p>

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- *Dictamnus dasycarpus* Turcz.
 - Margarita, 0.3g (no specific species)
 - *Glycyrrhiza glabra* L.
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Taeumjowi-tang

• <i>Coix lacryma-jobi</i> var. <i>maya</i> yuen (Rom.Caill.) Stapf		↓dermatitis severity ↓mast cell count ↓serum IgE ↓tissue eosinophils	Suppression of both Th1 & Th2 cytokines via inhibition of NF-κB & MAPKs signaling pathways	(107)
• <i>Castanea crenata</i> Siebold & Zucc.	Mixture	↓tissue IL-4, TNF-α, IL-6 ↓mRNA IL-4, IL-6 & TNF-α		
• <i>Raphanus raphanistrum</i> subsp. <i>sativus</i> (L.) Domin	(N/A)	↓scratching frequency ↓ NF-κB & MAPKs phosphorylation (ERK, JNK & p38)		
• <i>Schisandra chinensis</i> (Turcz.) Baill.				
• <i>Platycodon grandiflorus</i> (Jacq.) A. DC.				
• <i>Acorus gramineus</i> Aiton				
• <i>Ephedra sinica</i> Stapf				
• <i>Liriope muscari</i> (Decne.) L.H. Bailey				

Jianpi Chushi

• <i>Poria cocos</i> F.A. Wolf		↓serum IL-4 ↑serum IL-2	Suppression of Th2 cytokine and elevation of Th1 cytokine	(133)
• <i>Dioscorea oppositifolia</i> L.	Mixture	↓CD4+ count ↓ear thickness & weight		
• <i>Dictamnus dasycarpus</i> Turcz.	(N/A)		Analysis on signaling pathway was not performed	

- *Zaocys dhuminade* (no information in Kewscience)
- *Atractylodes lancea* (Thunb.) DC.
- *Citrus aurantium* L.
- *Scutellaria baicalensis* Georgi
- *Sophora flavescens* Aiton
- *Paeonia lactiflora* Pall.
- *Glycyrrhiza glabra* L.

<i>Astragalus mongholicus</i> Bunge	Calycosin (isolated compound)	↓mRNA IL-33 & TSLP ↓tissue IL-33 & TSLP ↓NFκB expression ↑occludin & ZO-1 protein	Suppression of TSLP/IL-33 via inhibition of NF-κB signaling pathway	(129)
<i>Rheum officinale</i> Baill.	Physcion (isolated compound)	↓dermatitis severity ↓mast cell count ↓serum IgE ↓serum TSLP, IL-4, IL-6 & TNF-α ↓protein & mRNA TSLP, IL-4 & IL-6	Suppression of both Th1 & Th2 cytokines	(96)
<i>Rumex crispus</i> L.	Chrysophanol (isolated compound)	↓dermatitis severity ↓mast cell count ↓serum IgE ↓blood eosinophil ↓serum TSLP, IL-4, IL-6, IL-13 & TNF-α ↑serum IFN-γ ↓epidermal thickness ↓serum histamine ↓scratching duration	Suppression of Th2 cytokines and elevation of Th1 cytokines	(37)
<i>Saposhnikovia divaricata</i> (Turcz. ex Ledeb.) Schischk.	Cimifugin (isolated compound)	↓ear thickness ↓mRNA & protein TSLP, IL-4, IL-5, IL-9 & IL-13 & IL-33 No significant changes of IFN-γ ↑CLDND1, CLDN-1 & occludin proteins	Suppression of Th2 cytokines	(135)

<i>Fraxinus chinensis</i> subsp. <i>rhyphophylla</i> (Hance) A.E. Murray	Esculetin (isolated compound)	↓ mast cell count ↓ serum IgE ↓ tissue eosinophil ↓ TNF- α , IFN- γ , IL-4, IL-13, IL-31, IL-17A ↓ epidermal & dermal thickness ↓ serum histamine ↓ scratching frequency	Suppression of both Th1 & Th2 cytokines Analysis on signaling pathway was not performed	(50)
<i>Paeonia × suffruticosa</i> Andrews	Paeonol (isolated compound)	↓ dermatitis severity ↓ mast cell count ↓ serum IgE ↓ tissue IL-4 & IFN- γ ↓ serum IL-4 ↓ mRNA & protein IL-4, IL-13 ↓ scratching frequency ↓ serum histamine ↓ epidermal thickness ↓ MAPKs phosphorylation (p38 & ERK)	Suppression of both Th1 & Th2 cytokines via inhibition of MAPKs signaling pathway	(94)
<i>Panax ginseng</i> C.A. Mey.	Gintonin (isolated compound)	↓ dermatitis severity ↓ ear thickness ↓ mast cell count ↓ serum IgE, IL-4, IFN- γ ↓ skin eosinophil ↓ serum histamine ↓ serum autotaxin ↓ epidermal thickness	Suppression of both Th1 & Th2 cytokines Analysis on signaling pathway was not performed	(75)
<i>Persicaria tinctoria</i> (Aiton) Spach	Tryptanthrin (isolated compound)	↓ dermatitis severity ↓ serum IgE ↓ mRNA TSLP, IL-4, IFN- γ , IL-6, TNF- α & TARC ↓ protein IL-4 & IL-6 ↓ serum IL-4 ↓ scratching frequency ↓ epidermal thickness ↓ serum histamine	Suppression of both Th1 & Th2 cytokines Analysis on signaling pathway was not performed	(36)
<i>Nigella sativa</i> L.	Thymoquinone (isolated oil)	↓ ear clinical score (dermatitis severity) ↓ ear thickness & weight ↓ total leukocyte count ↓ serum IgE ↓ mRNA IL-4, IL-5 & IFN- γ	Suppression of both Th1 & Th2 cytokines	(5)

Analysis on
signalling pathway
was not performed

N/A: Part of the plant or type of extract was not mentioned

