

AGASTACHE TUMMY SYRUP

HUO XIANG ZHENG QI GAO

ORIGINS: Song Dynasty (12th century) *Tai Ping Hui Min He Ji Ju Fang*.

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) is a sweetened syrup form of the famous 12th century formula, Agastache Powder to Rectify the Qi (*Huo Xiang Zheng Qi San*). The source text was published as part of a public health project in the middle of the Song Dynasty. The book produced by this project and where *Huo Xiang Zheng Qi San* was first published is *Tai Ping Hui Min He Ji Ju Fang* (Formulary of the Pharmacy Service for Benefitting the People in the Taiping Era). It was the first book ever published in any culture on patent medicines.¹

GENERAL SIGNS/SYMPTOMS

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) is used today as a first-choice antiemetic. The external wind-dampness addressed by this formula or external wind-cold combining with internal wind-dampness will generally present at least with nausea. Other accompanying signs and symptoms often include vomiting and diarrhea, and may include abdominal distension, clammy skin, heavy sensation in the limbs, lethargy, dizziness, or distending headache. **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) can also be used for morning sickness.

ACTIONS

1. Transforms dampness
2. Rectifies rebellious stomach qi
3. Harmonizes the middle burner
4. Expels cold
5. Resolves the exterior

INGREDIENTS

PINYIN	LATIN	ENGLISH	PERCENT OF FORMULA
<i>Huo Xiang</i> (chief)	Agastaches Herba	Agastache/ Giant Chinese Hyssop/ Patchouli	14%
<i>Sheng Jiang</i> (assistant and envoy)	Zingiberis Radix	Ginger, fresh	10%
<i>Fu Ling</i> (assistant)	Poria	Poria / Hoelen/ Tuckahoe	8%
<i>Da Fu Pi</i> (assistant)	Arecae Pericarpium	Betel Nut Peel	8%
<i>Bai Zhu</i> (assistant)	Atractylodis Macrocephalae Rhizoma	White Atractylodes Rhizome	8%
<i>Jie Geng</i> (assistant)	Platycodi Radix	Platycodon/ Balloon Flower Root	8%
<i>Jiang Chao Hou Po</i> (deputy)	Magnoliae Officinalis Cortex (ginger-fried)	Magnolia Bark, ginger-fried	8%
<i>Chen Pi</i> (deputy)	Citri Reticulatae Pericarpium	Tangerine Peel	8%
<i>Zhi Ban Xia</i> (assistant)	Pinelliae Rhizoma Preparatum	Pinellia, ginger-cured	8%
<i>Zi Su Ye</i> (deputy)	Perillae Folium	Perilla Leaf	6%
<i>Bai Zhi</i> (deputy)	Angelicae Dahuricae Radix	Angelica, Purple	6%
<i>Hong Zao/ Da Zao</i> (envoy)	Jujubae Fructus	Jujube Date, red	4%
<i>Zhi Gan Cao</i> (envoy)	Glycyrrhizae Radix Preparata	Chinese Licorice Root, honey-fried	4%

GENERAL INDICATIONS / MODERN APPLICATIONS

- Abdominal distension
- Abdominal pain
- Allergic reactions, general, damp-type
- Appetite, lack of
- Chest, heaviness or stifling sensation in
- Cold, aversion to
- Cough from rebellious qi
- Dermatitis, atopic, damp-type
- Dermatosis
- Diarrhea
- Dizziness
- Ears, pressure in
- Headache, distending
- Fever, low-grade
- Gastroenteritis
- Malaria, symptoms of
- Morning sickness
- Motion sickness
- Nausea
- Postviral Fatigue Syndrome
- Skin, clammy
- Smell, loss of/ Anosmia
- Stomach "flu"
- Sudden Turmoil Disorder
- Summer Heat, acute
- Sweating, abnormal
- Taste, lack of/ Ageusia
- Vomiting

FORMULA DISCUSSION

This is a thousand-year-old formula. As is the case with most formulas that have been in more or less constant use for many centuries, the applications for **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) have greatly expanded since its origin. The *pinyin* translates as "Agastache Syrup to Rectify the Qi." In general, this formula is used to treat external invasions of a yin nature, that is, cold and damp, which have obstructed the qi mechanism. It is the nature of cold to

FORMULA ACTIONS

- **Transforms dampness**
- **Rectifies rebellious stomach qi**
- **Harmonizes the middle burner**
- **Expels cold**
- **Resolves the exterior**

TONGUE

Usually greasy or turbid.

PULSE

Typically, soggy or slippery. May be wiry if qi is struggling to manage the dampness or superficial and wiry if the stomach qi is rebelling.

CONTRAINDICATIONS

Not appropriate to take for wind-heat invasion or internal fire. Do not use in the absence of dampness.

DOSAGE

A typical adult dose will be ½-1tsp (2.5ml -5ml) 3 times a day for chronic mild-moderate cases. Acute cases will need to be more frequent, up to every 2 hours. For severe vomiting, where the individual simply “can’t keep anything down,” the best approach may be to dissolve tiny doses (<1ml) under the tongue every 20-30 minutes until they are able to swallow a full dose without regurgitation.

contract inward, and the nature of dampness to sink. When dampness is contracted externally, it generally sinks into the middle burner. It is here where the primary obstruction to the qi mechanism occurs, affecting both the stomach and the spleen/pancreas. When the qi mechanism of the stomach is obstructed, it can no longer properly descend. When it rebels, there can be nausea, vomiting, belching, or a stifling sensation in the chest. When the qi of the spleen/pancreas is obstructed, it can no longer draw things up and hold them in place; diarrhea results. In an acute case of damp-cold invasion obstructing the spleen/pancreas, there will be urgent diarrhea. When both the stomach and spleen/pancreas are affected, sudden turmoil disorder can develop.

Originally, this formula was designed to treat one of two patterns. In the first pattern, a wind-cold invasion combines with internal dampness. One experiences chills and fever, heaviness in the limbs, a heavy head with headache, fullness in the chest, along with various middle burner symptoms like vomiting, diarrhea, and abdominal gurgling.

In the second pattern, the dampness has an external origin. Besides the well-known six types of pathogenic qi (wind, cold, summer-heat, dampness, fire, and dryness), there was thought to be *shān lān zhàng qi* (“mountain vapors and miasmatic qi”). Miasmatic qi was thought to cause malarial disorders, worms, parasites, and even epidemics. It is a subcategory of climatic evil qi. Unlike the standard six pathogenic qi, which are all normal in their season (except for fire), and do not cause disease when one is properly dressed and exhibits strong *zheng qi* (upright qi), miasmatic qi can be more insidious. Later schools of thought contrasted the six pathogenic qi with miasmatic qi by pointing out that the six pathogenic qi are contracted through the skin, while miasmatic qi enters the body through the nose and mouth. *Shān lān zhàng qi* has also been associated with entitetic invasion, due in part to the association between entities and worms or parasites. In modern times, what we need to understand about the second pattern addressed by **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) is that many external pathogens have their own intrinsic damp-cold nature, which differs from patterns that develop when our body is merely responding to an external pathogen by generating dampness or when climatic cold or summer heat cause the fluids to stagnate, thereby generating dampness. When the pathogen itself is damp or damp-cold, it will tend to affect the middle and lower burners more acutely than the upper. Or, if it happens to affect the lungs, it is more likely to cause pneumonia-like conditions because the sinking quality of dampness directs the pathogen to the lower and deeper sections of the lungs. Rather than causing an upper respiratory infection, there is a greater chance that a cold-damp pathogen settles into the lower respiratory tract. SARS-CoV-2 is an example of a damp-cold pathogen.ⁱⁱ

The strategy that allows **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) to address both of these patterns lies in its aromatic nature. Like “astringency”, the “aromatic” property assigned to some substances is not exactly a characteristic of “taste” nor one of “temperature.” It is a special category and the opposite of astringency. Only an aromatic substance has the ability to penetrate through turbidity. (By contrast, astringency draws things more tightly together.) Turbidity tends to affect the middle burner in one kind of pattern; and cognitive function, sensory orifices or the *shen* in another. It is by breaking up turbidity that **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) is able to rectify the qi.

Sudden Turmoil Disorder

In the list of General Indications/Modern Applications above, the term “Sudden Turmoil Disorder” is mentioned. Since this is not a term used in modern medicine, a brief description is in order. Zhang Zhong-Jing was the first to fully describe the condition and to give it a name. It is believed by many that Zhang found basis for the same disorder in Chapter 71 of the *Su Wen*, wherein Qi Bo describes an exteriorly-contracted condition in which people will present with an urgent condition including vomiting, borborygmus, and dysentery. Qi Bo attributes this pattern to climatic factors being out of season, in which the constrained phase (in this case the Earth phase) is rebelling against its controlling phase (Wood). What this means is that the qi-regulating factor of the Wood phase is not strong enough to manage the obstruction in the Earth phase. In other words, damp stagnation causes qi rebellion to develop. Externally-contracted dampness stagnating in the Earth is the cause. The resolution is to regulate the qi of the middle burner and move out the dampness. In Chapter 7 of the *Shang Han Lun*, Zhang launches a discussion on sudden turmoil (*huo lan*) disease, a term Zhang himself seems to have coined for the disorder. He differentiates between disease caused by cold damage and disease that came on as *huo lan* strike. He does, however, point out that *huo lan* can transform, after a few days, into various presentations of cold damage, and he does suggest formulas for each of these variations. Commentators are quick to point the reader to various *taiyin*-stage formulas for the treatment of acute onset vomiting and diarrhea. By the Song Dynasty, they had given more thought to miasmatic qi and mountain vapors and the problem of turbidity in the middle burner obstructing the qi mechanism. Their answer, which remains the standard in Chinese herbal medicine, is to dredge the turbidity, transform the dampness, and regulate the qi to restore the qi mechanism. **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) has remained the principal formula for this for over a thousand years.

COVID-19

Huo Xiang Zheng Qi variations have been among the most thoroughly utilized (and therefore thoroughly studied) formulas in the treatment of COVID-19. The two main reasons in Chinese medicine that allow an external pathogen to become chronic are 1) tissue damage from fire toxin, and 2) dampness/turbidity. Beginning in the Song Dynasty it was thought that, if disease from an external pathogen transformed into a chronic issue, that must mean that something is preventing resolution—a factor that has the ability to hold the pathogen in place. They decided that dampness (or turbidity) was the cause

of chronic or lingering illness. COVID-19 has a major dampness component to it, and in both traditional and modern assessments, COVID has an inflammatory agency that causes tissue damage. **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) is warming, and therefore not necessarily the formula of choice for those presentations of COVID that are marked by high fever or severe inflammation. But in the cases where acute COVID presents with turbidity or damp-predominance, such as with the gastrointestinal symptoms or heavy sensations in the limbs, **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) is one of the principal herbal formulas prescribed. In chronic cases (Long COVID), turbidity is likely to be the prevailing pathogenic factor. When it is, **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) is one of a handful of formulas officially recommended for treatment by Chinese public health organizations.ⁱⁱⁱ

SYNERGY OF INGREDIENTS

Six of the ingredients in **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) are described as “aromatic.” Appropriately, the chief, agastache/patchouli (*hu xiang*), is one of them. The other five are purple angelica (*bai zhi*), perilla leaf (*zi su ye*), tangerine peel (*chen pi*), ginger-fried magnolia bark (*jiang chao hou po*) and white atractylodes (*bai zhu*). The purple angelica (*bai zhi*), perilla leaf (*zi su ye*), tangerine peel (*chen pi*) and ginger-fried magnolia bark (*jiang chao hou po*) all serve as deputies, while the white atractylodes (*bai zhu*) is one of the assistants. Agastache (*huo xiang*) enters the middle and upper burners to penetrate turbidity, transform dampness and rectify the qi. It simultaneously releases the exterior and resolves damp turbidity in the middle burner. It is argued that agastache (*huo xiang*) is the strongest substance in the *materia medica* to stop vomiting.

Perilla leaf (*zi su ye*) serves as a deputy. Its main function is to help the chief disperse cold from the exterior, but its aromatic property harmonizes the middle burner and revives the spleen. Like the chief, it can transform turbidity. Tangerine peel (*chen pi*) is a qi-regulating substance that dries dampness, resolves phlegm, and disperses clumped qi. Ginger-fried magnolia bark (*jiang chao hou po*) regulates qi and directs it downward in all three burners while also drying dampness. Along with tangerine peel (*chen pi*) it strongly addresses fullness and distension in the upper and middle burners. Purple angelica (*bai zhi*), the other aromatic deputy, is the main substance in the formula to help clear dampness from the head and sinuses and to treat headache. It releases the exterior and dries dampness. The fourth aromatic substance in **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) is the assis-

tant, white angelica rhizome (*bai zhu*). It is a principal substance for the tonification of the spleen and stomach qi. Besides its direct tonification action, it revives the spleen by rescuing it from damp encumbrment. All of these aromatic substances penetrate turbidity and help restore the qi mechanism.

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) utilizes three different methods to liberate the qi mechanism from dampness. It transforms damp, dries damp, and drains damp. Dampness is created in the spleen/pancreas, but it can collect in the lungs^{iv} and the lower burner. Substances that “drain dampness” do so by guiding it out through the urine; many simultaneously strengthen the spleen/pancreas. Poria (*fu ling*) is the substance in the formula that drains dampness, while also strengthening the spleen/pancreas.

“Drying dampness” is accomplished in two ways. Ginger-cured pinellia (*zhi ban xia*), tangerine peel (*chen pi*), and betel nut (*da fu pi*) dry dampness by being warm and acrid and moving fluids. Tangerine peel (*chen pi*) also happens to be bitter. Bitterness has the property of drying (as well as draining.) The other substances in **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) that dry dampness with their bitter taste are purple angelica (*bai zhi*), white atractylodes (*bai zhu*), and ginger-fried magnolia bark (*jiang chao hou po*).

“Transforming dampness” is the third mechanism in this formula that deals with dampness. All of the substances discussed above that have an “aromatic” quality, have some action on “transforming” dampness, but the main two that accomplish this are the chief, agastache (*huo xiang*), and betel nut (*da fu pi*). Betel nut (*da fu pi*) transforms dampness by unblocking, regulating, and dispersing. A major etiology of dampness is that turbidity forms when fluids cannot properly move or be transported. Betel nut (*da fu pi*), along with tangerine peel (*chen pi*) and ginger-fried magnolia bark (*jiang chao hou po*), strongly regulate qi in the middle burner, removing obstructions and rectifying the qi mechanism.

Platycodon root (*jie geng*) is an assistant herb. It combines with tangerine peel (*chen pi*) and ginger-fried magnolia bark (*jiang chao hou po*) to strongly free the diaphragm. It helps lift some of the action of the formula into the upper burner and resolves dampness in the lungs that has congealed into phlegm. Fresh ginger (*sheng jiang*) serves as assistant by harmonizing the middle burner and releasing the exterior, and as envoy by harmonizing the actions of the other herbs. Both red jujube date (*hong zao/da zao*) and prepared licorice root (*zhi gan cao*) also

serve as envoys, harmonizing the ingredients with their sweetness.

MODERN RESEARCH

COVID-19—As we are all well-aware, COVID-19 can manifest in a number of different patterns. In February of 2023, the National Health Commission of the People’s Republic of China and the National Administration of Traditional Chinese Medicine convened a group of experts to revise the relevant content of the Diagnosis and Treatment Protocol for COVID-19 Patients and developed the Diagnosis and Treatment Protocols.^v Their official recommendation for a formula to treat a mild case of COVID-19 with the pattern of “dampness and heat accumulation in the lungs” was *Huo Xiang Zheng Qi Wan*. The same formula was recommended in critically ill COVID-19 patients to control diarrhea, and in mild to moderate cases with diarrhea and/or vomiting.

One study from 2020 found that “the compounds in *Huo Xiang Zheng Qi Gao* can combine with angiotensin converting enzyme II (ACE2) binding to PTGS2, HSP-90AB1, AR, CAMSAP2 and other targets to regulate multiple signaling pathways, thus exerting a preventive or therapeutic effect on COVID-19.”^{vi}

Gastrointestinal Issues—There are a vast number of studies, easily found online, that show the efficacy in using *Huo Xiang Zheng Qi San/Gao* to treat the range of gastrointestinal disorders for which the formula has been famous for hundreds of years. One unique study was published in 2022 and examined its influence on the microbiome of the gut. The results revealed that “HXZQ exhibited mild and positive impacts on the bacterial diversity and the composition of the gut microbiome in a healthy state. As for an unhealthy state of the gut microbiome (with low bacterial diversity and deficient compositions), HXZQ significantly restored the bacterial diversity and recovered the abundance of Bacteroidetes.”^{vii}

Allergies—Because external invasions can cause damp-type immune responses, **Agastache Tummy Syrup** (*Huo Xiang Zheng Qi Gao*) can be used to treat certain (damp) presentations of allergic reactions. One study published in 2021 using a murine model found that “HXZQ-Oral Liquid not only inhibited degranulation of mast cells (IC50, 123 µg/mL), but also inhibited the generation and secretion of IL-4 (IC50, 171.4 µg/mL), TNF-α (IC50, 88.4 µg/mL), LTC4 (IC50, 52.9 µg/mL) and PGD2 (IC50, 195.8 µg/mL). Moreover, HXZQ-OL suppressed the expression of IL-4 and TNF-α mRNA, as well as the phosphorylation of Fyn, Lyn and multiple downstream signaling proteins including MAPK and PI3K/NF-κB pathways. In addition, HXZQ-OL (527.5 mg/kg) attenuated the IgE-mediated PCA with

55% suppression of Evans blue exudation in mice.” They showed that HXZQ oral liquid attenuated the activation of mast cell and passive cutaneous anaphylaxis and concluded that HXZQ might be used as an alternative treatment for allergic diseases.^{viii}

Other Indications—A paper published in 2022 summarized recent research on treatments for motion sickness. *Huo Xiang Zheng Qi* Formula was cited as an important strategy from the Chinese formulary for the treatment of morning sickness.^{ix}

There is even some indication that *Huo Xiang Zheng Qi Formula* might be an effective strategy for treating eosinophilic esophagitis,^x though this strategy has not yet been sufficiently tested.

Huo Xiang Zheng Qi Formula has been found useful in the treatment and prevention of heatstroke (summer heat) in several studies. One such study, published in 2014, found that HXZQ significantly decreased the levels of endotoxin and increase the level of heat-shock proteins in 84 patients.^{xi} A similar study found that taking HXZQ before training, especially outdoor training in hot weather, could significantly reduce the incidence of heatstroke.^{xii}

FORMULA COMPARISONS

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) and Reed & Seed Formula (*San Ren Wei Jing Tang*)

The difference between these two formulas can be simplified to the treatment of cold turbidity vs warm turbidity. *Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*)* is warming and suitable for damp-cold stagnation or damp stagnation, while *Reed & Seed Formula (*San Ren Wei Jing Tang*)* is cooling and appropriate for warm-dampness. Both formulas remove damp obstruction from the lung and middle burner, but *Reed & Seed Formula* may be more appropriate to unblock constipated bowels. While *Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*)* excels at resolving diarrhea from dampness (although, not damp-heat-type diarrhea, if the heat signs are strong.)

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) and Poria Five Formula (*Wu Ling San*)

Both formulas remove damp obstruction from the body and promote urination, but *Poria Five Formula (*Wu Ling San*)* is much stronger to unblock urination and drain out excess dampness through the bladder. *Poria Five Formula (*Wu Ling San*)* addresses dampness that has stagnated due to an invasion of cold in the *taiyang* stage. There will often be swellings and/or edema. The damp stagnation that *Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*)* was designed for, if viewed through a Six Stages lens, has penetrated more deeply and is lodged in *taiyin*. Although there can be vomiting and diarrhea in both patterns, in the *taiyin* pattern these symptoms will be more prominent.

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) and Citrus & Pinellia Formula (*Er Chen Tang*)

Both formulas free the diaphragm and treat vomiting and cough. *Citrus & Pinellia Formula (*Er Chen Tang*)* is much stronger at resolving phlegm from a lingering respiratory infection, but it is not indicated for diarrhea. Both formulas free the qi mechanism in the middle burner, but the obstruction in the *Citrus & Pinellia Formula (*Er Chen Tang*)* pattern will be more phlegm, whereas in the *Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*)* pattern it will be more damp or turbid dampness. Chest constriction with cough will be more common in the pattern treated by *Citrus & Pinellia Formula (*Er Chen Tang*)*.

Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*) and Resolve the Middle Formula (*Jia Wei Ping Wei Fang*)

Both formulas move out damp stagnation in the middle burner. *Agastache Tummy Syrup (*Huo Xiang Zheng Qi Gao*)* is better suited to treat dampness from an external origin or from contaminated food. It will be superior if there is a mild fever in the presentation. *Resolve the Middle Formula (*Jia Wei Ping Wei Fang*)* will be more appropriate when the nausea, vomiting, diarrhea or constipation is from dietary habits. *Resolve the Middle Formula (*Jia Wei Ping Wei Fang*)* is stronger for regulating the qi of the middle burner and has substances that can move out food stagnation, hence it will be better for bloating.

USEFUL COMBINATIONS

For Postviral Fatigue Syndrome	Combine with Minor Bupleurum Formula
For acute otitis media, ear pain and/or pressure	Combine with Children's Ear Formula
For Long COVID, damp-predominant	Combine with Reed and Seed Formula
For food allergies/sensitivities	Combine with Ling Zhi Lung Formula
For dermatosis	Combine with Rejuvenation Formula

ENDNOTES

ⁱ Library of Congress, <https://www.loc.gov/item/2021666438/>

ⁱⁱ Though SARS-CoV-2 certainly possesses a damp nature, it is more severe than what is being described here. “Toxic-damp” may be a more accurate description, where the toxic nature can easily lead to structural damage of epithelial and endothelial tissue. When toxin causes tissue damage and alters the nature of fluids, we generally refer to it as “fire toxin”. The term “fire toxin” would seem to contradict our designation of “damp-cold”. But the second pattern we have described, “miasmatic qi and mountain vapors”, is often associated with toxin, as well as pestilent qi (*li qi*) or epidemic qi (*yi qi*).

ⁱⁱⁱ Zhang ZJ (editor), “Diagnosis and treatment protocol for COVID-19 patients (tentative) tenth version.” Officially released by National Health Commission of the People’s Republic of China and the National Administration of Traditional Chinese Medicine, February 2023.

^{iv} When dampness is created in the middle burner and “stored” in the lungs, it is because the descending qi of the stomach is obstructed. The qi cannot descend the dampness, and so it ascends into the lungs via *taiyin*.

^v Zhang ZJ (editor), op. cit.

^{vi} Deng YJ, “Study on active compounds from Huoxiang Zhengqi Oral Liquid for prevention of coronavirus disease 2019 (COVID-19) based on network pharmacology and molecular docking.” *Chinese Traditional and Herbal Drugs*; (24)1113-1122, 2020.

^{vii} Goa M, Duan XH, Chen CZ, and Yin Q, et al., “Modulator effects of Huoxiang Zhengqi oral liquid on gut microbiome homeostasis based on healthy adults and antibiotic-induced gut microbial dysbiosis mice model.” *Frontiers in Pharmacology*; (13), 2022.

^{viii} Sun JB, Huang SX, Qin Y, Zhang P, Li ZW, and Zhang L, “Anti-allergic actions of a Chinese patent medicine, huoxiang-zhengqi oral liquid, in RBL-2H3 cells and in mice.” *Pharmaceutical Biology*; 59(1), 670-680, 2021.

^{ix} Liang KX, Liu Y, Yang WZ, Geng RJ, “Research progress in the treatment of motion sickness.” *International Journal of Biology and Life Sciences*; 1(1), 2022.

^x Soffer G, Kaman K, Li XM, “The successful management of eosinophilic esophagitis using traditional Chinese medicine: a case report.” *The Yale Journal of Biology and Medicine*; (93) 5, 2020.

^{xi} Wang T, Ding L, Jia Y, Jin H, Shi R, Zhu L, et al. “Simultaneous determination of six volatile components in Longhu Rendan pills using gas chromatography coupled with triple quadrupole mass spectrometry.” *Analytical Methods*; 6 (11), 3713–3719, 2014.

^{xii} Li D, Zeng L, Jiang Y, Shuai ., Yin T, Liu L, et al. “Comparison of effect of taking Huoxiang Zhengqi Liquid, spraying cool water and their combination to prevent heat stroke”. *Journal of Preventative Medicine Chinese People’s Liberation Army*; 34 (05), 732–737, 2016.

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