

Section 2

解表清里剂

— Exterior-Releasing and Interior-Clearing Formulas

Gě Gēn Huáng Qín Huáng Lián Tāng

(Kudzu, Coptis, and Scutellaria Decoction)

葛根黄芩黄连汤

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Pinyin Name: *Ge Gen Huang Qin Huang Lian Tang***Literal Name:** Kudzu, Coptis, and Scutellaria Decoction**Alternate Names:** *Ge Gen Qin Lian Tang*, *Ke Ken Huang Chin Huang Lien Tang*, Pueraria, Scute, and Coptis Decoction; Pueraria, Scutellaria and Coptis Decoction; Pueraria Coptis and Scute Combination**Original Source:** *Shang Han Lun* (Discussion of Cold-Induced Disorders) by Zhang Zhong-Jing in the Eastern Han Dynasty**COMPOSITION**

<i>Ge Gen</i> (Radix Puerariae Lobatae)	24g [15g]
<i>Huang Qin</i> (Radix Scutellariae)	9g
<i>Huang Lian</i> (Rhizoma Coptidis)	9g
<i>Zhi Gan Cao</i> (Radix et Rhizoma Glycyrrhizae Praeparata cum Melle)	6g

DOSAGE / PREPARATION / ADMINISTRATION

The source text states to cook *Ge Gen* (Radix Puerariae Lobatae) first in 8 cups [1,600 mL] of water until the liquid is reduced to 6 cups [1,200 mL]. Add the other ingredients and cook until the liquid is reduced to 2 cups [400 mL]. Take the warm, strained decoction in two equally-divided doses daily. Today, the decoction can be prepared using the dose of *Ge Gen* (Radix Puerariae Lobatae) suggested in brackets.

CHINESE THERAPEUTIC ACTIONS

1. Releases the exterior
2. Clears interior heat

CLINICAL MANIFESTATIONS

Wind-cold at the exterior with heat invading the interior: feverish sensation in the body, foul-smelling diarrhea, burning sensations of the anus after defecation, irritable and feverish sensation in the chest and epigastrium, a dry mouth, thirst, dyspnea with perspiration, a yellow tongue coating, and a rapid pulse.

CLINICAL APPLICATIONS

Diarrhea, dysentery, salmonella infection, amoebic dysentery, bacterial dysentery, gastritis, acute gastroenteritis, acute enteritis, ulcerative colitis, fever, influenza, common cold, measles, poliomyelitis, erysipelas, stomatitis, toothache, trachoma, conjunctivitis, inflammation of the lacrimal gland, and hangovers.

EXPLANATION

Ge Gen Huang Qin Huang Lian Tang (Kudzu, Coptis, and Scutellaria Decoction) was originally presented in *Shang Han Lun* (Discussion of Cold-Induced Disorders) for treating unresolved exterior wind-cold with heat invading the interior. This condition occurs when the exterior condition is incorrectly treated with downward draining herbs, leading to continued presence of exterior heat (minor condition) and its transformation into interior heat (major condition). Feverish sensations in the body indicate the presence of exterior heat. The interior heat may affect the Intestines and cause foul-smelling heat diarrhea. Interior heat may rise to attack the upper body and cause irritable and feverish sensations in the chest, a dry mouth, and thirst. The heat may damage the Lung to

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Diagnosis	Signs and Symptoms	Treatment	Herbs
Unresolved exterior wind-cold with heat invading the interior	<ul style="list-style-type: none"> • Feverish sensations in the body: presence of unresolved exterior wind-cold • Dyspnea: heat damaging the Lung • Irritability, a dry mouth, and thirst: interior heat consuming body fluids • Foul-smelling diarrhea with burning sensations: damp-heat in the Intestines • Yellow tongue coating and a rapid pulse: heat condition 	<ul style="list-style-type: none"> • Releases the exterior • Clears interior heat 	<ul style="list-style-type: none"> • <i>Ge Gen</i> (Radix Puerariae Lobatae) dispels the exterior factors and lifts Spleen qi to relieve diarrhea. • <i>Huang Qin</i> (Radix Scutellariae) and <i>Huang Lian</i> (Rhizoma Coptidis) clear heat and dry dampness to relieve diarrhea. • <i>Zhi Gan Cao</i> (Radix et Rhizoma Glycyrrhizae Praeparata cum Melle) harmonizes the herbs and calms the middle <i>jiao</i>.

cause dyspnea, and force body fluids out to the exterior, resulting in perspiration. A yellow tongue coating and a rapid pulse indicate a heat condition.

To properly treat this condition, exterior-releasing herbs must be used to treat the unresolved exterior condition, while interior heat-clearing herbs are used to sedate the interior. This formula contains *Ge Gen* (Radix Puerariae Lobatae) as the chief herb to dispel exterior factors, promote the production of body fluids to relieve the dry mouth and thirst, and direct Spleen qi upward to relieve diarrhea. *Huang Qin* (Radix Scutellariae) and *Huang Lian* (Rhizoma Coptidis) clear heat and dry dampness to relieve diarrhea. *Zhi Gan Cao* (Radix et Rhizoma Glycyrrhizae Praeparata cum Melle) harmonizes the herbs and calms the middle *jiao* to help relieve acute discomforts, such as burning sensations of the anus.

MODIFICATIONS

- When there is excess heat, add *Jin Yin Hua* (Flos Lonicerae Japonicae).
- With food stagnation, add *Mai Ya* (Fructus Hordei Germinatus), *Lai Fu Zi* (Semen Raphani), and *Shan Zha* (Fructus Crataegi).
- With vomiting, add *Ban Xia* (Rhizoma Pinelliae) and *Zhu Ru* (Caulis Bambusae in Taenia).
- With abdominal pain and cramps, add *Mu Xiang* (Radix Aucklandiae) and *Bai Shao* (Radix Paeoniae Alba).
- With abdominal pain and diarrhea, add *Bai Shao* (Radix Paeoniae Alba) and *Zhi Shi* (Fructus Aurantii Immaturus).
- For acute bacterial dysentery, add *Bai Tou Weng* (Radix Pulsatillae), *Mu Xiang* (Radix Aucklandiae), and *Qing Pi* (Pericarpium Citri Reticulatae Viride).
- If there is severe rectal tenesmus, add *Mu Xiang* (Radix Aucklandiae) and *Bing Lang* (Semen Arecae).

CAUTIONS / CONTRAINDICATIONS

Ge Gen Huang Qin Huang Lian Tang is contraindicated in diarrhea caused by cold and deficiency with deep, slow or weak pulse.

PHARMACOLOGICAL EFFECTS

1. **Antibacterial:** It has been demonstrated that decoction of *Ge Gen Huang Qin Huang Lian Tang* has an inhibitory effect *in vitro* against various microorganisms, especially *Staphylococcus aureus*, *Diplococcus pneumoniae*, and *Bacillus dysenteriae*.¹
2. **Antipyretic:** In rabbits with artificially-induced fever, administration of *Ge Gen Huang Qin Huang Lian Tang* was associated with a marked effect to reduce fever, especially between 2-4 hours after ingestion. The treatment protocol was to administer 5 g/kg of the herbal decoction. In addition, the study noted that the effect of the herbs was comparable to 0.28 g/kg of aspirin.²
3. **Antiarrhythmic:** Intravenous injection of a *Ge Gen Huang Qin Huang Lian Tang* preparation was found to be effective in treating mice, rats, and rabbits with artificially-induced arrhythmia by injection of adrenaline and aconitine.³
4. **Gastrointestinal:** Administration of *Ge Gen Huang Qin Huang Lian Tang* in laboratory experiments has been associated with relieving diarrhea, slowing the peristalsis of the Intestines, and relieving spasms of the intestinal smooth muscles.⁴

CLINICAL STUDIES AND RESEARCH

1. **Diarrhea:** *Ge Gen Huang Qin Huang Lian Tang* has been shown via many studies to effectively treat diarrhea arising from various causes, such as acute or chronic enteritis, postpartum diarrhea, food poisoning, and infectious diarrhea.⁵ In one study, 202 infants with acute diarrhea

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were treated with intravenous fluids and oral ingestion of *Ge Gen Huang Qin Huang Lian Tang* with an overall effectiveness of 88.6%. The average time needed to stop diarrhea was 3.5 days.⁶ Another study reported satisfactory results using this formula to treat 513 infants and children with diarrhea in the summer.⁷

2. **Diarrhea during pregnancy:** Use of modified *Ge Gen Huang Qin Huang Lian Tang* in 30 pregnant women with diarrhea was associated with complete recovery in 25 patients, significant improvement in 4 patients, and no effect in 1 case. The herbal treatment contained this formula plus *Tu Si Zi* (Semen Cuscutae), *Sang Ji Sheng* (Herba Taxilli), and *Ai Ye* (Folium Artemisiae Argyi). Additional modifications included use of *Bai Shao* (Radix Paeoniae Alba) for restless fetus and *Shen Qu* (Massa Fermentata) for poor appetite. The herbs were given in decoction, in three equally-divided doses daily.⁸
3. **Salmonella infection:** Nineteen patients with acute salmonella infection were treated with complete recovery in 16 patients within 4 days, and 3 patients within 5 days.⁹
4. **Bacterial dysentery:** Forty patients with acute bacterial dysentery were treated with *Ge Gen Huang Qin Huang Lian Tang* with great success. The average recovery time was 1.15 days for reduction of fever, 4.51 days for relief of abdominal pain, 3.47 days for recovery of tenesmus, and 2.8 days for resolution of pus and blood in the stool. Overall, most patients reported stabilization of their condition within an average of 3.4 days.¹⁰ Another study reported 96% effectiveness for treatment of acute bacterial dysentery in children using modified *Ge Gen Huang Qin Huang Lian Tang* via rectal enema. The treatment protocol was to cook the herbs in water to obtain 200 mL of herbal solution. Normal saline (300-500 mL) was used first to cleanse the intestines, prior to instilling 100 mL of the herbal solution. This procedure was repeated two times daily, for 3 days. Of 50 patients, the study reported significant improvement in 38 patients, improvement in 10 patients, and no benefit in 2 patients.¹¹
5. **Amoebic dysentery:** One study reported 98.28% effectiveness using herbal therapy to treat 116 patients with amoebic dysentery. The herbal treatment contained *Ge Gen Huang Qin Huang Lian Tang* and *Bai Tou Weng Tang* (Pulsatilla Decoction), with addition of *Hou Po* (Cortex Magnoliae Officinalis) and *Huo Xiang* (Herba Agastaches), and removal of *Qin Pi* (Cortex Fraxini), as the base formula. Additional modifications included *Jin Yin Hua* (Flos Lonicerae Japonicae) for high fever; *Di Yu* (Radix Sanguisorbae) for the presence of blood in the stools; *Ban Xia* (Rhizoma Pinelliae) for nausea and vomiting; and *Bai Shao* (Radix Paeoniae Alba) for abdominal pain. The herbs were given in decoction daily in two equally-divided doses. The study reported complete recovery in 114 of 116 patients.¹²
6. **Enteritis:** Use of this formula plus *Bai Tou Weng* (Radix Pulsatillae), *Chi Shao* (Radix Paeoniae Rubra) and *Lian Qiao* (Fructus Forsythiae) was effective in treating all 22 infants with enteritis. The herbs were given via rectal instillation, 40-50 mL rectally two times daily for 3-7 days.¹³
7. **Ulcerative colitis:** Thirty patients with chronic ulcerative colitis were treated with *Ge Gen Huang Qin Huang Lian Tang* with recovery in 10 patients, significant improvement in 12 patients, and slight improvement in 3 patients. The treatment protocol was to flood the colon with 250 mL of the decoction one time daily for 15 days per course of treatment, for a total of 1-3 courses of treatment.¹⁴ Another study reported 87.5% effectiveness using modified *Ge Gen Huang Qin Huang Lian Tang* to treat 32 patients with chronic ulcerative colitis characterized by Large Intestine damp-heat and Spleen and Stomach weakness and deficiency.¹⁵
8. **Gastritis:** Sixty patients with chronic superficial gastritis were treated with good results using *Ge Gen Huang Qin Huang Lian Tang* plus *Xiang Fu* (Rhizoma Cyperi), *Bai Shao* (Radix Paeoniae Alba), and *Huo Xiang* (Herba Agastaches). Additional modifications included use of *Bai Hua She She Cao* (Herba Hedyotis) for constipation; *Mu Xiang* (Radix Aucklandiae) for loose stools; calcined *Wa Leng Zi* (Concha Arcae) for acid reflux; and *Zhu Ru* (Caulis Bambusae in Taenia) and *Ban Xia* (Rhizoma Pinelliae) for nausea and vomiting. Additionally, for abdominal distention, *Da Fu Pi* (Pericarpium Arcae) was added and *Bai Shao* (Radix Paeoniae Alba) was removed; and for food stagnation, dry-fried *Lai Fu Zi* (Semen Raphani), *Shan Zha* (Fructus Crataegi), and *Shen Qu* (Massa Fermentata) were added, and *Bai Shao* (Radix Paeoniae Alba) was removed. The study reported relief of gastric pain in all patients within 1-2 weeks of herbal treatment. Of 60 patients, 32 had significant improvement and 28 had moderate improvement.¹⁶
9. **Fever:** One study reported 97% effectiveness using modified *Ge Gen Huang Qin Huang Lian Tang* to treat 200 children with fever. Modifications to this formula included *Qing Hao* (Herba Artemisiae Annuae) for fever in spring, *Shi Gao* (Gypsum Fibrosum) in summer, *Jie Geng* (Radix Platycodonis) in fall, and *Ma Huang* (Herba Ephedrae) in winter. The study reported improvement in 197 of 200 patients.¹⁷

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TOXICOLOGY

The LD₅₀ for alcohol extract of the formula via intravenous injection was 13.5 g/kg in mice. The cause of fatality was attributed to cardiovascular effects, with a decrease in heart rate and contractile force of the heart.¹⁸

RELATED FORMULA

Gě Gēn Huò Xiāng Shāo Yào Tāng

(Kudzu, Pogostemon, and Peony Decoction)

葛根藿香芍藥湯

葛根藿香芍药汤

Pinyin Name: *Ge Gen Huo Xiang Shao Yao Tang*

Literal Name: Kudzu, Pogostemon, and Peony Decoction

Original Source: *Jian Tai Zhen Suo Fang* (Herbal Prescriptions from *Jiantai* Clinic) by Chang Wei-Yen in 1981

Ge Gen (Radix Puerariae Lobatae)

Gan Cao (Radix et Rhizoma Glycyrrhizae)

Bai Shao (Radix Paeoniae Alba)

Huang Qin (Radix Scutellariae)

Huang Lian (Rhizoma Coptidis)

Da Huang (Radix et Rhizoma Rhei)

Rou Gui (Cortex Cinnamomi)

Xiang Fu (Rhizoma Cyperi)

Hou Po (Cortex Magnoliae Officinalis)

Guang Huo Xiang (Herba Pogostemonis)

Chen Pi (Pericarpium Citri Reticulatae)

Qing Pi (Pericarpium Citri Reticulatae Viride)

Zi Su Ye (Folium Perillae)

Fu Ling (Poria)

Bai Zhu (Rhizoma Atractylodis Macrocephalae)

Bai Zhi (Radix Angelicae Dahuricae)

Ban Xia (Rhizoma Pinelliae)

Zhi Qiao (Fructus Aurantii)

Sheng Jiang (Rhizoma Zingiberis Recens)

Da Zao (Fructus Jujubae)

Chun Pi (Cortex Ailanthi)

Wu Wei Zi (Fructus Schisandrae Chinensis)

Dang Gui (Radix Angelicae Sinensis)

Jie Geng (Radix Platycodonis)

Ge Gen Huo Xiang Shao Yao Tang (Kudzu, Pogostemon, and Peony Decoction) treats diarrhea characterized by the presence of damp-heat and toxins in the Intestines, accompanied by disharmony of the middle *jiao*. It is formulated following the principles of three classic formulas: *Ge Gen Huang Qin Huang Lian Tang* (Kudzu, Coptis, and Scutellaria Decoction) to clear heat in the interior; *Huo Xiang Zheng Qi San* (Agastache Powder to Rectify the Qi) to regulate qi and harmonize the middle *jiao*; and *Shao Yao Tang* (Peony Decoction) to clear heat

and eliminate toxins. Clinical applications of this formula include diarrhea, gastroenteritis, enteritis, dysentery, and food poisoning.

AUTHORS' COMMENTS

Clinically, *Ge Gen Huang Qin Huang Lian Tang* is safe for use in any condition involving heat in the Intestines, regardless of whether exterior symptoms are present or not. It is most important, however, **not** to use it in patients with deficiency and cold of the Spleen and Stomach.

Ge Gen Huang Qin Huang Lian Tang, *Shao Yao Tang* (Peony Decoction), and *Bai Tou Weng Tang* (Pulsatilla Decoction) are three commonly used formulas for diarrhea, each with a very different etiology and emphasis.

- *Ge Gen Huang Qin Huang Lian Tang* treats heat invading the interior as a result of the misuse of herbs while the pathogenic factor was still at the superficial level. Chief manifestations include foul-smelling diarrhea with burning sensations in the anus.
- *Shao Yao Tang* treats accumulation of damp-heat and toxins in the Large Intestine, leading to dysfunction and qi stagnation causing severe abdominal pain with blood and mucus in the stool and burning sensations in the anus. The key sign for the use of this formula is rectal tenesmus.
- *Bai Tou Weng Tang* treats accumulation of damp-heat and toxins in the Intestines at the *xue* (blood) level. The heat is more prominent than the dampness and is deep in the *xue* level, so more blood will be present in the stool. Other symptoms include abdominal pain, rectal tenesmus, mucus in the stool, and burning sensations in the anus.¹⁹

References

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Shí Gāo Tāng (Gypsum Decoction)

石膏湯

石膏湯

Pinyin Name: *Shi Gao Tang*

Literal Name: Gypsum Decoction

Original Source: *Wai Tai Mi Yao* (Arcane Essentials from the Imperial Library) by Wang Tao in 752 A.D.

COMPOSITION

<i>Shi Gao</i> (Gypsum Fibrosum)	6g
<i>Ma Huang</i> (Herba Ephedrae)	9g
<i>Dan Dou Chi</i> (Semen Sojae Praeparatum)	1 cup [9g]
<i>Huang Qin</i> (Radix Scutellariae)	6g
<i>Huang Lian</i> (Rhizoma Coptidis)	6g
<i>Huang Bo</i> (Cortex Phellodendri Chinensis)	6g
<i>Zhi Zi</i> (Fructus Gardeniae), <i>bo</i> (opened)	10 pieces [9g]

DOSAGE / PREPARATION / ADMINISTRATION

The source text instructs to cut the ingredients, cook them in 10 cups of water, and reduce the liquid to 3 cups. Take 1 cup of the warm, strained decoction three times daily. The source text advises to avoid consuming pork and coming into contact with cold water while taking this formula.

CHINESE THERAPEUTIC ACTIONS

1. Clears heat and eliminates toxins
2. Releases the exterior and induces perspiration

CLINICAL MANIFESTATIONS

Unresolved exterior syndrome with interior heat in all three *jiaos*: high fever, no perspiration, stiffness and a feeling of heaviness of the body and the extremities, dry nose, thirst, fidgeting, irritability, insomnia, delirium, incoherent speech, maculated skin, and a slippery, rapid pulse.

CLINICAL APPLICATIONS

Fever, irritability, and delirium.

EXPLANATION

Shi Gao Tang (Gypsum Decoction) treats unresolved exterior syndrome with interior excess heat in all three *jiaos*. This syndrome often originates from *taiyang* syndrome. If the excess exterior symptoms in a *taiyang* syndrome are not relieved over a period of time, heat and toxins are created in the three *jiaos*, or all over the body. High fever, no perspiration, stiffness of the body and the extremities, dry nose, thirst, fidgeting, irritability, insomnia, incoherent speech, and delirium all indicate excess at the exterior and heat in the interior. The heat and toxins may also cause maculated skin by forcing the blood out of the blood vessels.

To effectively treat this syndrome, both exterior-releasing and interior-clearing methods need to be used. This