

# Hong Qu (Monascus)

## 紅麴 红曲

**Pinyin Name:** *Hong Qu*

**Alternate Chinese Names:** *Hong Mi, Chi Qu*

**Original Source:** *Yin Shan Zheng Yao* (Correct Guide to Eating and Drinking)

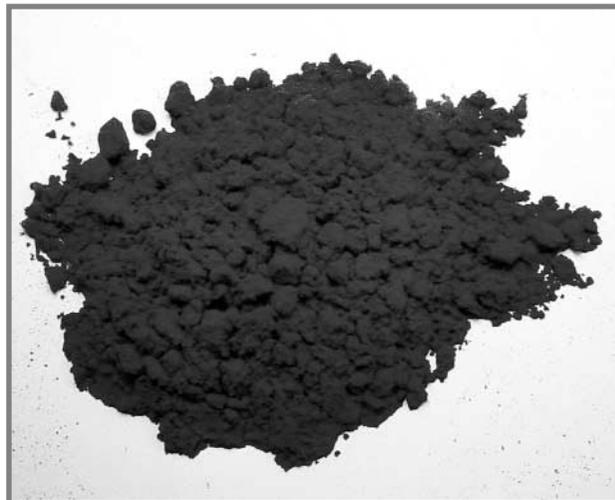
**English Name:** red yeast rice

**Botanical Name:** *Monascus purpureus* Went.

**Pharmaceutical Name:** Monascus

**Properties:** sweet, acrid, warm

**Channels Entered:** Spleen, Liver, Large Intestine



### CHINESE THERAPEUTIC ACTIONS

#### 1. Strengthens the Spleen and Stomach, Promotes Digestion

**Indigestion:** *Hong Qu* (Monascus) strengthens the Spleen and Stomach and promotes digestion to treat indigestion in which there is undigested food in the stool.

- Indigestion: use *Hong Qu* with *Shan Zha* (Fructus Crataegi) and *Mai Ya* (Fructus Hordei Germinatus).
- Food stagnation due to Spleen deficiency: add *Bai Zhu* (Rhizoma Atractylodis Macrocephalae) and *Dang Shen* (Radix Codonopsis).

#### 2. Invigorates Blood Circulation, Eliminates Blood Stasis

**Blood stasis:** *Hong Qu* activates blood circulation to treat blood stasis in postpartum women, individuals with traumatic injuries, external injuries, and abdominal pain caused by blood stasis.

- Blood stasis in the upper body: use this herb with *Jiang Xiang* (Lignum Dalbergiae Odoriferae), *Tong Cao* (Medulla Tetrapanacis), and *Mo Yao* (Myrrha).
- Pain due to trauma and injuries: combine it with *Yan Hu Suo* (Rhizoma Corydalis), *Dang Gui* (Radix Angelicae Sinensis), *Hong Hua* (Flos Carthami), *Niu Xi* (Radix Cyathulae seu Achyranthis), *Mo Yao* (Myrrha) and *Ru Xiang* (Gummi Olibanum).
- Abdominal pain or postpartum blood stasis: incorporate *Hong Qu* with *Ze Lan* (Herba Lycopi), *Niu Xi* (Radix Cyathulae seu Achyranthis), *Sheng Di Huang* (Radix Rehmanniae), *Xu Duan* (Radix Dipsaci), *Pu Huang* (Pollen Typhae), and *Chi Shao* (Radix Paeoniae Rubrae).

### DOSAGE

6 to 12 grams in decoction. *Hong Qu* is also used in

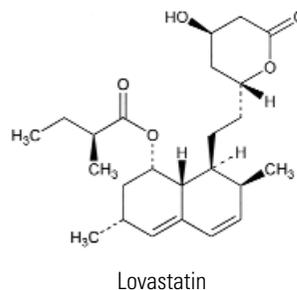
powder and pill forms. It is ground into powder for topical application.

### CAUTIONS / CONTRAINDICATIONS

- Use *Hong Qu* with caution in cases of Spleen and Stomach deficiency, or individuals who do not have any food stagnation or blood stasis.
- *Hong Qu* is contraindicated in individuals with active liver disease.

### CHEMICAL COMPOSITION

Monascin, monascolin I (lovastatin, mevinolin), monascolin II ( $\beta$ -hydroxy acid), monascin, starch, fatty acids, phytosterols, isoflavones.<sup>1,2</sup>



### PHARMACOLOGICAL EFFECTS

- **Antihyperlipidemic:** Following ingestion, monascolin I (lovastatin) is converted in the body to  $\beta$ -hydroxy acid, which is an HMG-CoA reductase inhibitor. This compound then inhibits cholesterol biosynthesis, leading to reduced levels of plasma total cholesterol, low-density lipoprotein cholesterol (LDL-C), very-low-density lipoprotein cholesterol (VLDL-C), and triglycerides. In addition, it may produce a slight increase in high-density lipoprotein (HDL-C).<sup>3</sup>

## Hong Qu (Monascus)

### CLINICAL STUDIES AND RESEARCH

- **Hyperlipidemia:** In one multi-center, randomized, single-blind trial, 502 patients with hyperlipidemia were treated with 600 mg of *Hong Qu* twice daily (1200 mg total per day). After four weeks of treatment, the study reported 17% reduction in total cholesterol levels, 24.6% reduction in LDL-cholesterol, 19.8% decrease in triglycerides, and a 12.8% increase in HDL-cholesterol. After 8 weeks of treatment, the study reported 22.7% reduction in total cholesterol levels, 30.9% reduction in LDL-cholesterol, 34.1% decrease in triglycerides, and a 19.9% increase in HDL-cholesterol.<sup>4</sup>

### HERB-DRUG INTERACTION

Listed below are interactions that have been documented between pharmaceuticals and lovastatin, a constituent of *Hong Qu*.<sup>5</sup>

- **Liver metabolism:** Lovastatin is metabolized primarily by CYP3A4, and may interact with CYP3A4 inhibitors.
- **Azole antifungals:** Concurrent use of itraconazole and ketoconazole increased lovastatin levels twenty fold in health volunteers, as well as increased the risk of myopathy.
- **Bile acid sequestrants:** Co-administration of cholestyramine decreases the bioavailability of lovastatin. To avoid this interaction, lovastatin should be taken 1 hour before or 4 hours after bile acid sequestrants.
- **Fibric acid derivatives:** Avoid concurrent use of gemfibrozil and lovastatin, as severe myopathy and rhabdomyolysis have been reported.
- **Isradipine:** Isradipine increases hepatic blood flow, and may increase the clearance of lovastatin and its metabolites.
- **Warfarin:** Bleeding and increased prothrombin time have been reported with concomitant use of lovastatin and warfarin.

### AUTHORS' COMMENTS

*Hong Qu* is rice that has been fermented with yeast *Monascus purpureus*. The fermentation process changes the color of rice from white to red, thereby giving it the name “red yeast rice.” For centuries, *Hong Qu* has been used in China as both food and herbal medicine. It has also been used as a coloring agent to prepare fish, fish sauce, fish paste, rice wine, and red soybean curd. In the late 1990s, it was introduced and used in the US as a dietary supplement to promote healthy cholesterol levels.

Most medical journals attribute the hypolipidemic effect of *Hong Qu* to one single component, lovastatin. This explanation, however, is not sufficient nor entirely accurate. The therapeutic dose of *Hong Qu* delivers approximately 7.2 mg of lovastatin, while the synthetic drug lovastatin (Mevacor) contains from 10 to 40 mg of lovastatin. Yet, despite the lower dose of the supposed active component, the hypolipidemic effects of *Hong Qu* are much greater than the synthetic drug lovastatin. Thus, it is clear that lovastatin is not the only active component, and more research needs to be done on *Hong Qu* as an herbal medicine, not just on lovastatin as a single compound.

#### References

1. *Plant Physiol*, 1977; 60(4):578) (*J Food Sci*, 1981; 46(2):589
2. *The Merck Index* 12<sup>th</sup> edition, Chapman & Hall/CRCnetBASE/Merck, 2000
3. *PDR for Nutritional Supplements 1<sup>st</sup> Edition*, Medical Economics, 2001
4. *Ibid.*
5. Facts and Comparison, Jan. 2000. *Drug Facts and Comparison*. A Wolters Kluwer Company.