Application of Root and Rhizome of Chinese Traditional Medicine Flowers

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Abstract-objective: To explore the application of flowers of medicinal herbs with root and rhizome plant as medicinal materials. Method: Through the literature review, Pharmacopoeia and related research background, analysis of root and rhizome flower’s medicinal applications is investigated. Result: Root medicine is used widely in Chinese herbal medicine. Out of 521 kinds of traditional Chinese medicines in the manual of Chinese medicinal herbs, 121 kinds of root medicines are there [1]. In these plants, both root and rhizome are used for their propagation and flowers which are rich in nutrients, are mostly discarded, resulting in a huge waste of resources. Conclusion: This paper expounds the comprehensive utilization of root and rhizome of plant flowers, in order to provide theoretical basis for the best use of resources and protection of the natural environment.

Keywords-Rhizome, plant, flower, comprehensive utilization

Many species of root and rhizome are dominant and strong varieties [2]. In the process of production, the flowers are often discarded as waste. In fact, flowers not only have ornamental value, but also have the value of health care. They belong to traditional Chinese medicine. They play an important role in the fields of diet, medicine, beauty and healthcare [3]. In this paper, the main chemical constituents and pharmacological effects of root and rhizome plant flowers are presented, and their development and utilization value also will be discussed, which provides reference for further research and development.

I. THE FLOWERS OF RESEARCH STATUS OF ROOT (RHIZOME) TRADITIONAL CHINESE MEDICINE

In medicinal plants, the flower absorbs the energy of the sun, is the essence of plants. Flowers being main characteristic of plants aid in plant identification [4]. Modern research has focused on chemical components and pharmacology, chemical composition of flowers mostly containing flavonoids, volatile oil, terpenoids, with antioxidant, antibacterial and anti-inflammatory, antitumor, immune enhancement and analgesia action. Root and rhizome plants flower produce of a variety of forms, and such flowers find use in the food, in the wine, tea, cosmetics, sweet bursa, flowers of dew, oil, etc, and all they are an important part of traditional culture in our country.

II. A COMPREHENSIVE UTILIZATION OF ROOT (RHIZOME) TRADITIONAL CHINESE MEDICINE

Roots and rhizomes of Chinese medicinal herbs account for a large proportion of Chinese medicinal herbs, and their flowers have some applications in modern studies. The application of flowers of root and rhizome medicinal was described in the following table. According to the characteristics of the tropism of sex and taste, the classification is carried out, and most of them are warm and flat. See table 1.

| Plant                     | Tropism of Taste | Chemical Composition | Pharmacological action | Function Indicated                                | Doseage | Food Therapy                   |
|---------------------------|------------------|----------------------|------------------------|---------------------------------------------------|---------|-------------------------------|
| Achnatherum splendens     | gan               | Flavonoids           | Diuresis,hemostasis    | Indications of newborn urine adverse, internal bleeding | Decoct soup 15~30g | Epistaxis: flowers five money, a pig nose |
| flower s                  | ping             |                      |                        |                                                   |         |                                |
| Imperata cylindrica       | gan               | Triterpene           | Blood coagulation and  | Hemostasis, detoxification, pain, indications     | Decoct soup 9~15g |                                |
| flower s                  | light             |                      | hemostasis             | of hematemesis, nose bleed, stab wounds           |         |                                |
| Cycads flower s           | gan               | Flavonoids           | Qi dampness, stop      | Blood and enriching blood Indications of          | Decoct soup 15~60 g | A little poison               |
|                           | ping             |                      | blood, Yishen Gujing  | Stomachache, chronic Hepatitis, hematemesis, dysmenorrhea, spermorrhoea |         |                                |
|                           |                   |                      | Guijing, Indications of | vaginal discharge                                |         |                                |
|                           |                   |                      | Stomachache, chronic   |                                                   |         |                                |
|                           |                   |                      | Hepatitis, hematemesis |                                                   |         |                                |
|                           |                   |                      | dysmenorrhea, spermorrhoea |                                                   |         |                                |
|                           |                   |                      | vaginal discharge      |                                                   |         |                                |
| Pine flower s             | sweet             | Selenium             | Expelling wind,        | qi, collecting dampness and enriching blood       | Fried soup 3~9g; or a blunt |                                |
|                           | warm              |                      | supplemeting           | Indications of headache, dizziness, diarrhea,    |         |                                |
|                           | liver             |                      |                        | eczema, wet sores, trauma bleeding                |         |                                |
|                           | stomach           |                      |                        |                                                   |         |                                |

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| English name | Spicy | Flavonoids | Softening and dissipating lumps and removing warts. Attending osteophyrm | Apply proper to wine |
|-------------|-------|------------|-------------------------------------------------|---------------------|
| Walnut flower | warm  |            |                                                 |                     |
| Orient flower | Spicy | Glycosides | Qi, blood circulation, pain. Indications headache, heat, stomachache, abdomen in plot, dysentery infantile malnutrition | Decoct soup 3–6 g |
| Pokeweed flower | bitter | Chinese | Phlegm resuscitation. Indications phlegm on the Mogolian, forgetful, extravagant, eyes are not Cong | Grind 1–3 g | Scented tea Treatment of forgetting |
| Epiphllum flower | Sweet | Lignin | Clear lung and relieve cough, cool blood stop bleeding, Yang Xin An Shen. Indication Hyperactivity, cough, tuberculosis, hemoptysis, uterine bleeding, palpitations, insomnia | Decoct soup 9–18 g | Flower 3–5, suar 5 g, stew, treat Tu berculosis, cough, hemoptysis |
| Chestnut flower | little bitter astrigent mild | Flavonoids | Heat dampness, hemostasis, Indications diarrhea, dysentery, vaginal discharge, blood in the stool, scfula, gall tumor | Decoct soup 9–15 g | Healthy Food |
| Magnolia officinalis flower | little bitter | Lignin | Line gas wide, the line of Yu wet. Indication for liver and stomach Qi stagnation, chest epigastric fullness, loss appetite, poor appetite, cough and cold | Decoct soup 3–5 g | Flower tea, heat fullness, constipation |
| Wood stephania flower | | | Detoxification, phlegm. Indications of chronic osteomyelitis | Decoct soup 5–10 g | Braised chicken |
| Flos nelumbinis flower | bitter sweet | Flavonoids | Stasis to stop bleeding, wet the wind. Indications fall blood vomiting, blood, blood shower, uterine bleeding under the blood, days bubble sores, scabies itching | Decoct soup 1–1.5 g, soup 6–9 g | Take with wine for hematemesis |
| Thick skin incense flower | | Glycosides | Insecticidal antipruritic. The scabies itch | Proper external use |
| Turnip flower | pungent mild | | Bugan eyesight, convergence sore. Indications virtual work dark, sores | Into powder 3–6 g |
| Rubrum flower | astrigent sweet mild | Flavonoids | Heat cough, convergence to stop bleeding. Indications hyperactivity cough, hemoptysis, epistaxis, blood in the stool, dysentery, diarrhea, uterine bleeding | Decoct soup 6–10 g | Flower 10 g, with pork stew served to treat metrorrhagia |
| Apricot flower | bitter mild | saccharides | Blood tonic. Attending infertility, limb arthralgia, hand food against the cold | Decoct soup 5–10 g | Apricot fried mushrooms |
| Cherry blossoms flower | sweet sour | Macro-element | Effect on the immune system | Beauty freckle. Maintain facial acne | Proper external use with water |
| Papaya flower | | | Beauty moisturizer. Maintain face black powder barrier | Proper external use with powder |
| Hawthorn flower | bitter flat | Flavonoids | Hypotensive. Indications of hypertension | Decoct soup 3–10 g | Tea drink |
| Application of Root and Rhizome Plant Flowers |
|-----------------------------------------------|
| **Loquat flower** | Light flat, meridian | Flavonoids, amygdalin | Expelling wind and obstruction of nose. The relieving cough and treatment of common cold cough, nasal mucus, asthenia long cough, bloody sputum. | Decoction soup 6-12g | Stewed with chicken, nourishing Yin, moistening lung, phlegm cough. |
| **Soft Palm flower** | Bitter, astrigent, mild | | | | |
| **Aruncus flower** | Astrogen, mild liver stomach | Glycosides | Antituberculosis. Treating tuberculosis. | Decoction soup 6-12g | Kerria japonica steamed honey. Relives a cough. |
| **Pear blossom** | Light flat | Volatile oil | Hypotensive effect | Spot removing, the cotten rope black powder dregs. | Decoction soup 6-15g | With tofu, shrimp, plum. For dryness, cough, phlegm. |
| **Rose flower** | Sweet flat | | | | |
| **Dahurian rose flower** | Slightly sour, bitter, mild | Volatile oil | Antiviral | Regularizing qi, relieving cough. Treating irregular menstruation, dysmenorrhea, uterine bleeding, hematemesis, intercostal neuralgia, feilao cough. | Decoction soup 3-6g | Tea drink, invigorating the circulation of blood. |
| **Cherokee rose flower** | Sour flat | Volatile oil | Antibacterial action. Antiatherosclerosis | Astringent intestinal, solid fine, insecticide. Indications: Xujiexuji, nocturnal emission, urinary frequency, enuresis, vaginal discharge, worm disease, senile early white. | Decoction soup 3-9g | Tea drink. |
| **Sachali raspberry flower** | Bitter flat | | | | |
| **Flower of silk tree** | Sweet bitter, flat heart spleen | Aromatic components | Central inhibitory effect | To relieve god, air, appetizer, wind, and blood. Treatment of insomnia, anorexia, depression, chest heat eye problems, blurred vision, pain, injury. | Decoction soup 3-9g | Flos albiziae porridge. Nerves resolve depression. |
| **Franchet pea shrub flower** | Sweet bitter mild | Alkaloids, Glycosides | Hypotensive effect | Invigorate the kidney and spleen. Dizziness, headache, tinnitus. Indications: kidney feilao cough, infantile malnutrition. | Decoction soup 3-9g | Steamed egg roll, invigorating the spleen and kidney. |
| **Intermediate pea shrub flower** | Sweet warm | | | | |
| **Caraga Simica flower** | Sweet tepid | | | | |
| **Flower of Chinese redbud** | Bitter mold | Flavonoids, Glycosides | Clearing away heat and cooling blood and detoxicating. Indications: drench, sores blood in treating rheumatism pain. | Decoction soup 3-6g | Tea drink. |
| **Lablab flower** | Sweet mild | Anthocyanins, Glycosides | Antibacterial action | Summer heat dampness in the spleen. The attending summer heat dampness, fever, diarrhea, dysentery, vaginal discharge, bone bruise. | Decoction soup 3-9g | Tea drink. |
| **Lespedeza flower** | Sweet mild | Flavonoids | | Clear heat and stop bleeding, moistening lung and relieving cough, the blood in the stool, lung heat cough. | Decoction soup 9-15g | |
| Plant Name                  | Main Characteristics | Medicinal Uses                                                                 | Preparation | Side Effects |
|----------------------------|----------------------|--------------------------------------------------------------------------------|-------------|--------------|
| Escobita                    | sweet mild           | Clear heat and cool blood. Indications cough, hematuria and hematochezia         | Decoct soup 30~60 g |              |
| Crowflower                 | bitter spicy mild    | Clear heat and improve eyesight. Indications anemopyretic red eyes, blurred vision | Decoct soup 6~10 g |              |
| Kwic how miltetia          | sweet astrangent mild| Hemostasis by convergence. Indications epistaxis                               | Decoct soup 6~9 g |              |
| Common averrh oo           | sweet mind smooth    | Quercetin Glycosides. Indications malaria, stomach pain, insecticide           | Decoct soup 9~30 g |              |
| Pumello flower             | spicy bitter warm    | Volatile oil Flavonoids. Anti-inflammatory and antibacterial effect             | Decoct soup 1.5~4.5 g | Flower boiled pork stomach qi, spleen and stomach |
| Panicula flower            | spicy bitter warm    | Volatile oil Carbohydrates. Analgesic effect                                    | Decoct soup 3~9 g | Porridge, Treat traumatic swelling, pain |
| Flos longan                | slightly bitter sweet| Phenolic Carboxylic acid Flavonoids. Hypoglycemic effect                        | Decoct soup 9~15 g | Stew with pork |
| Comm on euscap his         | sweet flat           | Dampness, detoxification, the edema, dysuria, innominate swelling, redness, time aptiss, burn wound | Decoct soup 6~15 g | Juice Mumps treatment |
| Phoenix tree flower        | sweet flat           | Volatile oil Polysaccharides. Hypotensive effect                                | Decoct soup 3~6 g | Tea drink for toothache |
| Pomegranate flower         | sour astrangent mild | Volatile oil Anti-oxidation, Hypoglycemic effect                               | Decoct soup 3~10 g | Small poison |
| Chines e alangiu m flower  | spicy natural liver  | Alkaloids. Antibacterial effect                                                 | Decoct soup 9~15 g |              |
| Arola flower               | bitter satrangent   | Steroids. Anti-inflammatory effect                                              | Small poison |              |
| Ginseng flower             | spicy tepid heart    | Ginsenosides Polysaccharides. Anti-ulcer effect                                 | Make tea 3~6 g | walnut, lean meat soup, Ziyi Bushen, strong vitality for men Adjust blood, moisturizing hair for women |
| Rice paper plant immature flower | sweet mild         | Smoothing the liver to promote qi. Indications hemia                           | Decoct soup 30~60 g |              |
| Divariate suposh nikovia flower | spicy tepid liver   | Regulating qi to relieve abdominal pain. Indication abdominal werwantong, joint pain, pain, Indication of abdominal limbs | Decoct soup 3~6 g |              |
### TABLE 1. APPLICATION OF ROOT AND RHIZOME PLANT FLOWERS

| Plant                     | Tropism of Taste | Chemical Composition | Pharmacological Action                                                                 | Function Indicated                                                                 | Dosage         | Food Therapy           |
|--------------------------|------------------|----------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|------------------------|
| Persimmon flower         | sweet mild       | Saponins             | Reducing qi and stomach, detoxification and convergence. Indications a Tunusuan, vomiting | Decoct soup3–6g                                                                      | Treat hiccup by decocting flower |
| Caudate sweet leaf flower| bitter spicy     | Saponins             | A phlegm and a quenching thirst. Indications cough chest tightness, children diarrhea   | Decoct soup6–9g                                                                      | Treat cough and chest distress |
| Clerodendron yunnanensis bu flower | slightly bitter warm | Alkaloids          | Hemostasis. Indications uterine bleeding, vaginal discharge                           | Decoct soup10–15g                                                                   |                |
| Wild sesame seed flower  | sweet spicy      | Flavonoids           | Blood circulation, cooling blood, heat. Indications irregular menstruation, dysmenorrhea, chiba vaginal discharge, hyperactivity hemoptysis, urine pain | Decoct soup10–25g                                                                   |                |
| Garden eggplant flower   | sweet flat       | Glycosides           | Convergence sores, pain dampness. Indications truma, toothache, women with excessive vaginal discharge | Powder2–3g                                                                          | Tea drink      | Treat toochache         |
| Elder flower             | spicy warm       | Carbohydrates        | Anti-inflammatory effect. Indications cold, urine adverse                               | Decoct soup8.5–9g                                                                   | Tea drink      | Treat perpiration       |
| Potmarigold calendula flower | flat mildly bitter warm | Flavonoids          | Cooling blood to stop bleeding, heat purging fire. Indications intestinal wind blood in the stool, red eyes and throat | Decoct soup5–10g                                                                   | Tea drink      | Treat intestinal wind and blood in the stool |
| Cairomorning glory flower | slightly bitter warm | Flavonoids          | Relieving cough and steaming. The deficiency of consumption heat, cough hemorrhage      | Proper amount use                                                                   | Soup           |                        |

There is a small part of cold, see table 2.

### TABLE 2. THE FLOWER OF APPLOCATION OF ROOT AND RHIZOMA TRADITIONAL CHINESE MEDICINE

| Plant                     | Tropism of Taste | Chemical Composition | Pharmacological Action                                                                 | Function Indicated                                                                 | Dosage         | Food Therapy           |
|--------------------------|------------------|----------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------|------------------------|
| Poplar flower            | bitter cold      | Flavonoids           | The effect on the immune system                                                        | Clear the heat and material, eliminating dampness to stop dysentery. Indications bacterial dysentery, enteritis | Decoct soup9–15g |                        |
| Ramie flower             | sweet cold       | Hydrocysnic acid     | Hemostasis                                                                             | Clear the heat and rash, relieve the cold. Indications upset insomnia, measles through the poor, rubella itching | Decoct soup6–15g |                        |
| Purple jasmine flower    | slightly sweet   | Glycosides           | Antibacterial effect                                                                  | Run lung cooling blood, hemoptysis                                                | Decoct soup60–120g | Eat with tofu, regulatting endocrine |
| Basellaceae flower       | bitter cold      | Glycosides           | Cool blood detoxification. Indications of smallpox, nipple rupture                      |                                                                                   | Appropriate amount |                        |
| Eurotta flower           | bitter a little  | Flavonoids           |                                                                                       |                                                                                   | Decoct soup3–6g |                        |
| Celosia flower           | bitter cold      | Flavonoids           |                                                                                       |                                                                                   | Decoct soup15–30g | Stew with pork          |
| Cairosa                   | sweet astrigent  | Flavonoids           | Induction of labor Antiviral effect                                                    | Cool blood to stop bleeding, only with diarrhea. Indications bleeding, vaginal discharge, diarrhea, dysentery | Decoct soup9–15g | With the bird’s nest cockscomb stew for nourishing yin formostening dryness |
| Table 2: The Flower of Application of Root and Rhizoma Traditional Chinese Medicine |
|-----------------------------------------------|
| **The ruler of flower** | **sweet** | **slightly** | **cold** | **lung** | **sterols** | **Heat lung, cough and phlegm, detoxification swelling. Indications Hyperactivity cough, tuberculosis** | **Decoction soup 9~15 g** | **With pork for governance gas pain, sputum fire cough** |
| **Cactus flower** | **sweet** | **cool** | **Glycosides** | **Cool blood to stop bleeding. Indication vomiting blood** | **Decoction soup 3~9 g** |
| **Wild Magnolia officinalis flower** | **bitter** | **slightly bitter** | **cool** | **Volatile oil** | **Detoxification. Indications sore throat, rhinitis, conjunctivitis, brain leakage** | **Decoction soup 10~15 g** |
| **Bottle of incense** | **bitter** | **Glycosides triterpenes** | **Cool blood to stop bleeding, blood stasis swelling. Indications hematemesis, Nv xue, hemoptysis, hemorrhoids, red white diarrhea, blood shower, blood collapse, vaginal discharge, scalding injury** | **Decoction soup 5~10 g** | **The flower porridge for clearing heat and toxic material and cure dysentery** |
| **Chinese bulbul flower** | **bitter** | **cool** | **Flavonoids Glycosides** | **Clear the lung and calm the liver. Indications of nasal rickets, hypertension** | **Decoction soup 6~15 g** | **Tea drink for clearing liver and improving vision** |
| **Camellia flower** | **sweet** | **spicy** | **cool** | **liver lung large intestine** | **Cool blood to stop bleeding. Indications of hemoptysis, hematemesis, epistaxis, hematochezia, uterine bleeding, burns** | **Decoction soup 3~10 g** |
| **Camellia oleifera flower** | **bitter** | **slightly cold** | **Flavonoids** | **Cool blood to stop bleeding. Indications of hemoptysis, hematemesis, epistaxis, hematochezia, uterine bleeding, burns** | **Decoction soup 3~10 g** |
| **Shepherdspurse inflorescens** | **sweet** | **cool** | **liver spleen** | **Organic acid Flavonoids Glycosides** | **Uterus Anti-hypertensive effect** | **Cool blood o stop bleeding, heat dampness. Indications of uterine bleeding, hematuria, hematemesis, hemoptysis, Nv xue, children with milk, dysentery, red white vaginal discharge** | **Decoction soup 10~15 g** |
| **Orpine flower** | **bitter** | **cool** | **liver spleen** | **Heat dampness, name, itching. Indications Chibaí vaginal discharge, red eyes, rubella itching** | **Decoction soup 3~9 g** |
| **Dasiphora fruticosa flower** | **bitter** | **cool** | **spleen** | **Volatile oil** | **Transform dampness to invigorate the spleen. Indications dampness, spleen and stomach, loss of appetite, swelling of the body surface, red leukorrhea, mastitis** | **Decoction soup 6~9 g** |
| **Rosa cymosa Tratt. flower** | **sweet** | **sour** | **cool** | **spleen stomach** | **Volatil oil** | **The spleen, summer heat. Indications of the loss of appetite, hot thirsty** | **Decoction soup 3~9 g** |
| **Pachyrhizus flower** | **sweet** | **cool** | **Essential oil Flavonoids Glycosides** | **Decoction cooling blood. Indications of alcohol poisoning, irritability, intestinal wind, blood** | **Decoction soup 9~15 g** |
| **Flos puerariae** | **sweet** | **cool** | **spleen stomach** | **Hangover, wake up, stop bleeding. Indications tyrosive fever, thirst, headache, dizziness, abdominal pain, vomiting, antiemetic, don’t think of eating, vomiting blood, intestinal wind blood** | **Decoction soup 3~9 g** | **Tress hangover** |
| **Vetchleaf sophora root** | **bitter** | **cool** | **Alkaloida** | **Analgesic effect Anti-inflammatory effect** | **Clear away heat and toxic material. Indications heat polydipsia** | **Decoction soup 1~3 g** | **Tea drink** |
| **Tungoiltree flower** | **bitter** | **slightly pungent** | **cool** | **Anti-inflammatory effect** | **Clear away heat and toxic substances and promoting granulation. The newborn eczema, poison sores, pemphigus favus of the scalp, burn and scald** | **Proper amount use** |
From the application of root and rhizome flowers, it seems that the 95 kinds of flowers which are not commonly used for are cold, hot, warm and cool (flat), and the four are warm and flat. In toxicity, there are only 2 kinds of big and small ones marked clearly. These flowers are not commonly used for resistance and [5-6], and find wide application for the light flexible products. Hence these flowers an important raw material for people, often with disease prevention and health care, to provide ideas for the [7-9] application root and rhizome medicinal flower.

### III. DISCUSSION

In the 2015 edition of the "Chinese Pharmacopoeia" [10] based on the source, spent herbal collected efficacy, taste, meridian, chemical composition, pharmacological effects were summarized, and to explore the therapeutic effect of flower into tea, into the wine, porridge and soup ". Published in 2013, "China functional food material basic composition data table" [11] first "common flower and pollen raw materials" single chapter, clearly pointed out that many flowers are used in a traditional herbal medicine and have modern nutrition significance. Bright colored flowers with fragrance, very pretty and charming, since ancient times familiar as ornamental products, and praised in poetry. Not only for medicine into clinical treatment, but also acid lotion, do wine bath, incense pillow for makeup, it is not only an integral part of the daily life, but
also the traditional Chinese culture is an important [12]. Root and rhizome parts have its medical value in the treatment of disease, the modern studies spent most of active ingredients have nutritional value, medicinal value, aesthetic value, and gradually discovered, many functional products have also been developed market, for example, pollen health food, functional beverages, flower oil or water, flowers, flowers and health-care pillow containing herbal medicine etc..

With the development of productivity, the application of flowers, medicinal herbs and flowers of root and rhizome medicinal plants was neglected once. This undoubtedly promotes the research, exploration and development of flowers. Medicinal parts for root and rhizome of medicinal plants in the growth process, the whole plant flowers occupy all the nutrients, in the modern production process, the medicinal plants do not enter into or delayed reproductive growth, nutrient consumption or consumption, so we often use disbudding and remove the flower stalks and other measures to make the nutrient focus on the supply of root and Rhizome Growth, so that the root and rhizome yield and improve the quality of [13]. The flowers of medicinal plants are mostly discarded, not only polluting the environment, but also a great waste of resources.

Some modern studies of root and rhizome of medicinal plant flowers application, have health care of socialist economic development and the people's significant role in the promotion and protection, which has social, economic and ecological benefits of [14-16] obviously. The application of root and rhizome of plant flowers is the best, and is the largest of respect for nature. These are not only full use of resources, but also bring enormous economic value [17-18]. It is the full exploitation and utilization of medicinal resources and the great protection of environment [19-20]. This provides a theoretical basis for the development and utilization of medicinal resources of roots and rhizomes. Roots and rhizomes of flowers have broad application prospects in our country, and the future research should pay attention to their comprehensive application, which is of great significance for their resource development and utilization, the solution of resource shortage and economic development.

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