

Formulation and Evaluation of Herbal Oil Using Rubia Cordifolia Root

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Abstract: *The term "herbal cosmetics" refers to products that are created using a variety of approved beauty products as the foundation, to which a number of herbal components are added specifically to offer cosmetic benefits in a particular region. The root of Rubia cordifolia, also known as Manjishtha root, is widely used as a medicinal analgesic, blood purifier, liver tonic, and has anti-inflammatory and antibacterial qualities as well as anti-aging effects. Manjishtha oil are made with natural components such as powdered Manjishtha root and virgin coconut oil. Research conducted on phytochemistry and physiology of the manjishtha herbal oil after the formulation. And it contains significant phytochemicals that is effective for nourishing the skin without any irritancy for the skin.*

Keywords: Herbal oil, Manjishtha root, Virgin coconut oil, Phytochemicals, physiological screening

1. Introduction

The use of medicinal herbs to treat a variety of ailments has a long history. One country that has produced a large variety of medicinal herbs is India. "Botanical Garden of the World" is another term for India. Since the beginning of human culture, there has been a connection between beauty and cosmetics. Natural cosmetics are another name for herbal cosmetics. Herbal cosmetics have a definite role in Ayurveda medicine. Everybody can be attractive, according to Ayurveda. A holistic definition of beauty was given [1].

Herbal cosmetics are made by combining a variety of cosmetic materials as the base and then adding one or more herbal compounds to treat a range of skin conditions. Plants are extensively utilized in the research and development of novel pharmacological and cosmetic products. Herbs are utilized in the form of extracts or crude forms in herbal cosmetics [3].

Rubia cordifolia, commonly known as manjishtha, was widely used in antiquity to treat blood, skin, and urinary disorders because it was thought to be an effective blood purifier. According to Devipriya, the root has the following properties: it is sweet, bitter, acrid, astringent, thermogenic, antidysenteric, anti-inflammatory, antipyretic, analgesic, anodyne, anthelmintic, antiseptic, constipating, diuretic, febrifuge, rejuvenating, and tonic [2].

Various classes of bioactive compounds such as anthraquinones and their glycosides, naphthoquinones and glycosides, terpenes, bicyclic hexapeptides, iridoids, 11 carboxylic acids (malic, citric, quinic, rosmarinic acids) and saccharides (xylose, ribose, fructose, glucose, sucrose, primrose) were isolated from various parts of R. cordifolia. A combination of purpurin, munjistin, and trace levels of xanthopurpurin and pseudo-purpurin can be found in the roots [1].

Benefits of Manjishtha For Skin

Manjishtha is a treasure trove of active compounds that contribute to its remarkable skin-healing properties. The anti-

-inflammatory properties of Manjishtha are effective in reducing redness, soothing irritated skin, and purifying the bloodstream [13]. This natural treatment eliminates impurities from the body, brightening the skin. This purifies blood and helps to address the root causes of skin problems.

Manjishtha is renowned for its ability to reduce hyperpigmentation and improve skin tone. It also blocks melanin, the usual color for dark spots, and lightens skin tone.

Manjishtha flavonoids are effective in promoting skin health through their antioxidant properties, which help to combat free radical damage and premature aging. Manjishtha also affects the maturing handle by neutralizing free radicals and promoting collagen production [11], [14].

Maintaining high levels of collagen, the key component of skin elasticity and strength is achieved through the use of Manjishtha for acne treatment. It is important to reduce skin irritation, while not too much to kill the microscopic organisms that cause it. In addition, Manjishtha can help target sebum production and reduce breakouts.

Benefits of virgin coconut oil for skin

The finest form of coconut oil is virgin coconut oil, which is made from fresh mature coconut meat and coconut milk. The procedure of extracting virgin coconut oil may or may not involve heating. However, no chemical processing is used, which preserves the oil's natural properties. Because it contains an abundance of vitamins, minerals, and antioxidants that promote excellent health, it is referred to as the mother of all oils [7]. Virgin oil is full of many vital ingredients that support the development of a healthy body. Vitamins C and E, fatty acids such as lauric acid or medium-chain triglycerides (MCTs), myristic acid, etc. are among the nutrients found in virgin coconut oil. Proteins and Antioxidants help to rectify skin problems. Simultaneously it showing good antimicrobial property [8].

2. Methodology

Materials

Manjishta root and virgin coconut oil purchased from the Ayurvedic shop located in Kerala.

Manjiishta

Biological name: *Rubia cordifolia* L. [3]

Parts used: Root

Color; Reddish brown

Constituents; Flavonoids, Quinones, Glycosides, Tannins



Figure 1: Manjishta root

Virgin coconut oil

Biological name: *Cocos nucifera* oil [9]

Parts used: Fruit

Color: Transparent

Constituents: Alkaloids, Saponins, Antioxidants, Flavonoids, Terpenoids



Figure 2: Virgin coconut oil

Composition

Table 1: Procedure

Ingredient name	Composition
Manjishta root powder	10 grams
Virgin coconut oil	40 milliliter

- Grinded manjishta root in to fine powder
- Mixed Manjishta powder with Virgin coconut oil carrie
- Heated the mixture for 10 minutes gently in a pan to allow the herb to infuse the oil.
- Let it cool and strain the oil to remove any particle.
- Stored in a glass bottle and apply a small amount to face.

Phytochemical analysis

Detection of Alkaloid

Iodine Test

To 3mL extract solution few drops of iodine solution added. A blue color, which disappears on boiling and reappears on cooling indicates the presence of alkaloids [13].

Identification of cardiac glycoside

Baljet test

To 2mL of sample solution few drop of Baljet's reagent. A yellow - orange color indicates the presence of cardiac glycoside [13]

Detection of flavonoid

Alkaline reagent test

1mL of sample solution taken and 2mL of 2% NaOH solution , few drops dil. HCl added. An intense yellow color, becomes colorless on the addition of diluted acid indicating the presence of flavonoids [10].

Detection of phenolic compound

Iodine test

To 1mL extract, a few drops of dil. Iodine sol added. A transient red color indicates the presence of phenol [17]

Detection of Quinones

Take 2ml chloroform 5mL plant extract, (evaporated on water bath) then 3mL conc. H₂SO₄ (boiled in a water bath) A grey - coloured solution [13]

Detection of tannins

Plant extract is dissolved in 5mL distilled water and 1% gelatin solution then 10% NaCl. A white precipitate indicate the presence of tannins.

Detection of Terpinoides

To Alcoholic KOH test 1mL plant extract few mL alcoholic potassium hydroxide Red to blue color precipitate

Detection of anthraquinones

Borntrager's test

Take 10mL 10% ammonia sol. And few ml filtrate (shaken vigorously for 30 sec.) A pink, violet, or red - colored solution indicates the presence of anthraquinones [10]

Detection of Anthocyanins

HCl test

2mL of sample solution and 2mL Hydrochloric acid taken (take few mL ammonia) Pink - red sol. which turns blue - violet after the addition of ammonia indicates the presence of anthocyanins.

Physiological screening

Thermal stability

The evaluation of the formulations' thermal stability conducted by maintaining both goods in a humidity chamber

that has controlled temperatures between 60 and 700 degrees Celsius [6]

PH

The PH meter used to determine it.

Test of The spreading ability

To compress the sample to a consistent thickness, oil and cream were spread between the two glass slides, and then a 100 g weight was placed on each slide for five minutes. To the pan was added weight (250 g). Spreadability was measured as the number of seconds needed to complete the task of separating the two slides [8]

Irritancy

applied just a bit of the cream and ingredients to the face, then rinsed it off after 20 minutes, oil was then applied to the face, left on overnight, and then cleaned off the next morning. Ten people with dry skin and acne were subjected to this experiment for 21 days. [9]

Direction for use

Manjishta oil

- For external use only.
- Add some drops of oil
- Rub using thumbs
- Then applied to dry area of skin
- It can leave overnight or washed after 30 minutes

3. Results



Figure 3: Manjishta oil

Table 2: Phytochemical screening

Phytochemical test	Observation for Manjishta oil
Alkaloids	Absent
Flavonoids	Present
Phenols	Present
Glycosides	Present
Anthraquinone	Present
Anthocyanin	Present
Quinones	Absent
Tannins	Present

Table 3: Physical evaluation

Physical evaluation	Observation for Manjishta oil
PH	5.8
Thermal stability	Yes
Irritancy	Nil
Spread ability	Good

4. Conclusion

All the phytochemical constituents present in the Manjishta oil showed that it have potent benefits on skin. Simultaneously physiological screening showed good result that proven the benefits of manjishta root oil and it showed less irritancy on the skin of 10 people examined on 21 days. Flavonoids have antiviral, anti - inflammatory, anticarcinogenic, and antioxidant qualities.

Additionally, polyphenols have preventive effects and aid in delaying or preventing the development of some skin conditions, including both unsightly minor issues and wrinkles and acne.

Anthraquinone has antiviral, insecticidal, fungal, antibacterial, and antiparasitic qualities. The finest substance to treat skin pigmentation is anthocyanin. Because of its anti - inflammatory qualities, tannins can reduce inflammation and redness. They act as a natural astringent, clearing pores of extra oil. Glycosides are hydrating. All the mentioned benefits of phytochemical indicated that manjishta oil are the suitable formulation for skin with potent benefits including antiaging. At the same time, it is bio oil with least side effect. Hence furthe studies required to analye its more benefits on skin.

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