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Research Article

Formulation And Evaluation Of Herbal Lip Balm From Pomogranate Peel Extract

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ABSTRACT

Cosmetics are incredibly in demand since historical time. These days focus shifted more towards naturally derived cosmetic products. Among all cosmetic products, lip balm formulations are most widely used to enhance the beauty of lips and add glamour touch to the makeup. Lip balms offer a natural way to maintain and promote healthy lips. However, the synthetic ingredient in commercial lip balm can have side effects on the body in the long term. Pomegranate fruit is one of the natural ingredients containing anthocyanin which can be used as a natural dye, The natural lip balm can made using naturally occurring base, oils, extract, color and flavoring agents which can be evaluated for their resistance to temperature variations, pleasant flavor, and smoothness during application, adherence and easy intentional removal. The whole pomogranate fruit is useful as formulation purpose ,then mainly in that formulation of lip balm using peels of pomogranate ethanolic extract of peels.

INTRODUCTION

The plant

The pomegranate tree or anar is a fruitbearing deciduous shrub or small tree growing between 5 to 8 meters (16–26 ft) in height. Owing to its medicinal and culinary utility, it has been mentioned in many ancient scriptures notably in Babylonian texts, the Book of Exodus, the Homeric Hymns and the Quran. The name pomegranate derives from Medieval Latin *pōmum*

(i.e., apple) and *grānātum* (i.e., seeded). This has influenced the common name for pomegranate in many languages (e.g. *granada* in Spanish, *Granatapfel* or *Grenadine* in German, *grenade* in French, *granatäpple* in Swedish, *pomogranà* in Venetian)[1]. The genus name *Punica* refers to the Phoenicians, who were active in broadening its cultivation, partly

Botanical Source

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The pomegranate belongs to the family Lythraceae (previously Puniceae) with only two different species namely *Punica granatum* and *Punica protopunica*. These are planted either for its edible fruit or as an ornamental tree. *Punica granatum* var. *nana* is a dwarf variety of *P. granatum* popularly planted as an ornamental plant in gardens. Additionally, it differs in having pink (not red) flowers and smaller, less sweet fruit[2] .

The habitat[3]

The Fruit of *Punica granatum* split open to reveal clusters of seeds with sarcotesta on the inside, and a glass of juice

Scientific classification

Kingdom:

Plantae

Order :

Myrtales

Benefits of pomegranate

Family :

Lythraceae

Subfamily :

Puniceoideae

Genus :

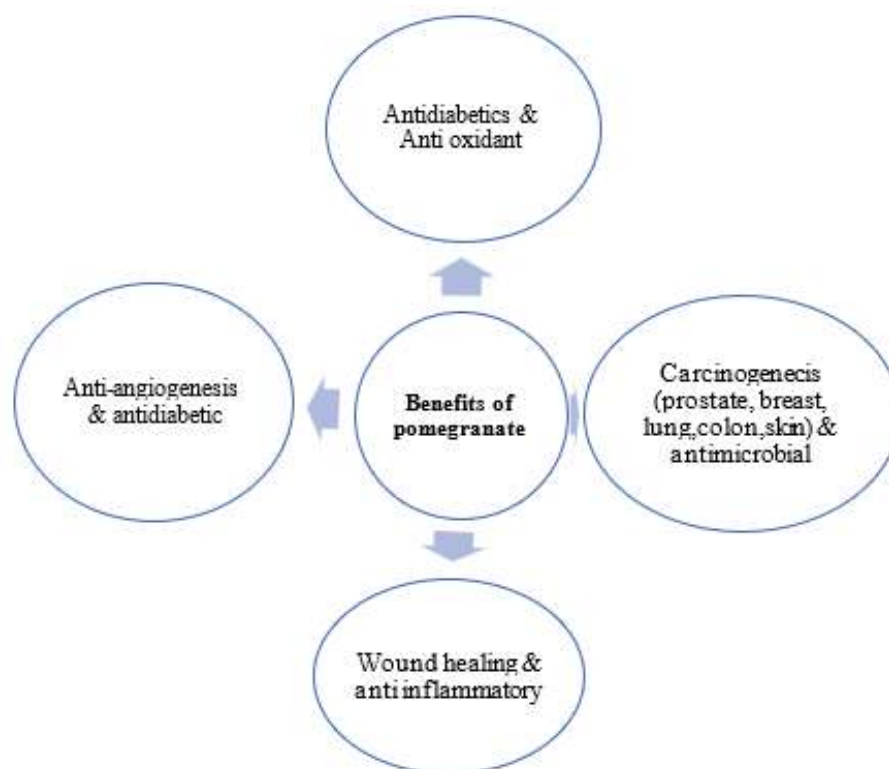
Punica

Species :

P granatum

Synonyms and biological name :

- *Punica granatum* L vana
- *Granatum punica* st. lag
- *Punica florida* salisb
- *Punica garndiflora* hort. Ex steud.
- *Punica nana*.L
- *Punica spinosa* Lam.
- *Rhoea punica* st. lag



Lip balm



Characteristic of lip balm

- Resistance To Temperature Variation
- Pleasant Flavour
- Smoothness During Application
- Innocuousness

The table of Ingredient

Sr no	Name of Ingredient	Role of Ingredient
1	Pomegranate extract	Base
2	Bees wax	Softener
3	Glycerin	Humectant
4	Cetyl alcohol	Emulsifier
5	Propylene glycol	Moisturizer
6	Orange oil	Fragrance
7	Almond oil	Skin tone
8	Lanolin anhydrous	Emulsifying agent

Formulation and preparation

The color pigment of pomegranate peels extracted by Soxhlet apparatus with ethanolic extract. Preservatives are used to prevent irritation and prevent bacterial growth, while the dye in lip balm is added only to make the product (lip balm) look attractive. In this research, researchers would make a lip balm made from natural ingredients. One of the natural ingredients used in this research is pomegranate. The use of natural ingredients aims to reduce and replace synthetic ingredients that exist in lip balm preparations. The compounds in the pomegranate (*Punica granatum* L.) to be tested are anthocyanins, saponins, tannins, and flavonoids, each of which has a role to replace or reduce synthetic ingredients commonly used in the manufacture of lip balms, so that in the manufacture of lip balms from natural ingredients

- Adherence And Easy Intentional Removal

Application of lipbalm

- Lip balms are formulations applied onto the lips to prevent drying and protect against adverse environmental factors.
- Natural lip balm being a product intended for uses by both men and women
- The lip balm it is necessary to balance the concentration of the main ingredient including oils and wax and other excipients
- Lip balm are often eaten away by the use and hence regulators have a microscopic look at the ingredients that go in to the lip balm

is expected to bring out the natural color of the pomegranate.

Drug and excipient profile

DRUG

Scientific classification

Kingdom:

Plantae

Order :

Myrtales

Family :

Lythraceae

Subfamily :

Punicoideae

Genus :

Punica

Species :

P granatum

Pomegranate peels extract



The pomegranate peels extract using ethanol and methanol for phytoconstituents extraction by using soxhlet apparatus.



Pomegranate Peels Extract
Table of phytoconstituents

Peels Of Pomegranat

Sr no.	Phytoconstituents
1	Gallic acid
2	Ellagic acid
3	Punicalin
4	Punicalagin
5	Caffeic acid
6	Ellagitannins
7	Pelletierine
8	Luteolin
9	Kaempferol
10	Quercetin

Equipment used for study :

Sr no	Equipment's	Purpose
1	Electronic balance	Weighing
2	Mechanical stirrer	Stirring
3	PH meter	Measure acidity/ alkalinity
4	Soxhlet apparatus	Extraction
5	Mortar pastel	Smooth the preparation

6	Water bath	Heat sample
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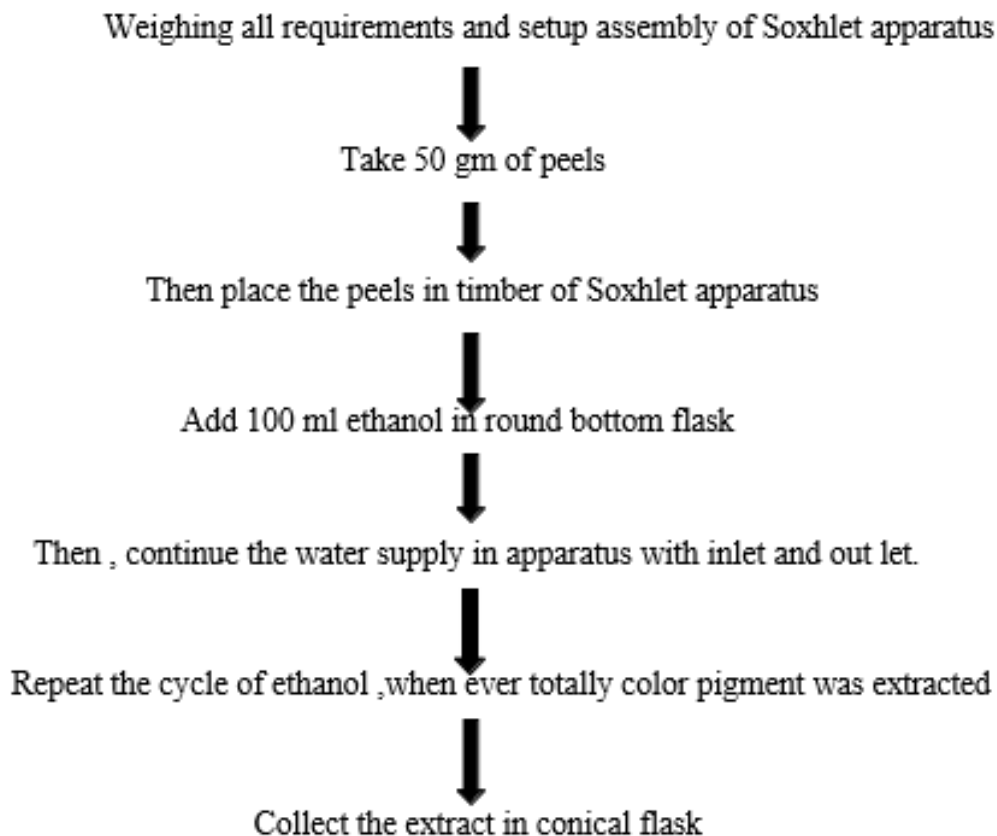
**Soxhlate apparatus
Extraction Procedure**



PH meter



Extraction of ethanolic pomegranate peels



Formulation of lip balm

Lip balm was prepared either by incorporating the active ingredient into the selected base or by melting the base and active ingredient together.

Formulation table

All the following ingredients are in gm quantity for 10 g .

Ingredients	F1	F2	F3
Pomegranate peels extract	1.5	1.8	2.1
Bees wax	1.5	1.5	1.5
Cetyl alcohol	2	2	2
Glycerin	1.5	1.5	1.5
Propylene glycol	1.5	1.5	1.5
Lanolin	1	1	1
Almond oil	q.s	Qs	Qs
Orange oil	q.s	Qs	Qs

Method of preparation

The herbal lip balm was formulated as per general method of formulation in which the bee wax melted in porcelain dish on water bath with the decreasing order of melting point.

↓

Cetyl alcohol ,glycerin ,propylene glycol, with lanolin and were heated in other porcelain dish.

↓

Then both the phases were mixed in the same temperature.

↓

Punica granatum ethanolic peels extract were heated together in another porcelain dish (just before mixing).

↓

All the contents were mixed at 80C with the extract of peels of punica granatum

↓

The essential oil like almond oil and essence orange oil are added drop wise with continuous stirring.

↓

The mixture was transferred from water bath to ice-bath and was allowed to solidify

↓

Then taken out of the ice-bath for further homogenization in mortar-pestle to get the desired texture.

↓

The homogenized herbal lip balm was kept in mold and kept under refrigeration condition.



RESULTS

Physical Characteristics

Sr. No	Parameter	Observation
1.	Color	Pale yellow
2.	Oduor	orange smell
3.	Texture	Smooth

Evaluation of batches

Sr. No	Parameter	F1	F2	F3
1.	PH	5.2	4.5	4.0
2.	Spreadability	Spredable	Spredable	Spredable
3.	Skin irritation	No	No	No
4.	Stability	Stable	Stable	Stable

CONCLUSION

The conclusion on herbal pomegranate peel extract lip balm could highlight its potential benefits such as its antioxidant properties, moisturizing effects, and potential protection against UV damage due to its high polyphenol content. Additionally, it may have anti-inflammatory properties and could potentially aid in healing and soothing dry or chapped lips. However, further research and testing may be needed to fully understand its efficacy and potential side effects. Using *Punica granatum* (pomegranate) peels extract for lip balm preparation can offer numerous benefits. Pomegranate peel extract is rich in antioxidants, such as polyphenols, which can help protect the lips from oxidative damage caused by environmental factors like UV radiation and pollution. Additionally, it has anti-inflammatory properties that can soothe and heal dry or chapped lips, making it an excellent natural ingredient for lip care products. In conclusion, utilizing *Punica granatum* (pomegranate) peels extract in lip balm formulation offers a promising natural solution for lip care. Its antioxidant-rich composition provides protection against oxidative stress, while its anti-inflammatory properties aid in soothing and healing dry or chapped lips. Furthermore, its potential to enhance moisture retention and promote overall lip health makes it a valuable

ingredient in lip balm preparations. Further research and development could uncover additional benefits and optimize its effectiveness in lip care products.

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