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ALOE VERA – A REVIEW ON ITS PHARMACOLOGICAL ACTIVITIES AND CHEMICAL CONSTITUENTS

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ABSTRACT:

Due to its many health advantages, aloe vera, a succulent plant, has been utilized in traditional medicine for generations. Aloe vera's pharmacological effects, such as its anti-inflammatory, antioxidant, antibacterial, and wound-healing qualities, are summarized in this article. Additionally covered are the main components of aloe vera, such as phenolic acids, glycoproteins, and polysaccharides. The paper emphasizes how aloe vera may be used therapeutically for wound healing, skin care, digestive health, and dental health. All things considered, this analysis offers a thorough grasp of aloe vera's pharmacological properties and activities, as well as its potential as a natural treatment for a range of illnesses.

Keywords: Aloe vera, pharmacological activities, constituents, traditional medicine, natural remedy.

Introduction:

The succulent plant known as aloe vera (Aloe barbadensis Miller) has been utilized for millennia in traditional medicine due to its many health advantages. Originally from Africa, aloe vera is currently grown all over the world for its nutritional, cosmetic, and therapeutic uses. The plant's latex, gel, and leaf extracts have been used to cure a number of illnesses, including as wounds, digestive troubles, oral health concerns, and skin ailments. Interest in aloe vera's therapeutic potential has increased as a result of the growing need for natural and alternative therapies. With an emphasis on aloe vera's potential as a natural treatment for a range of illnesses, this paper attempts to give a thorough summary of the plant's pharmacological properties and components.

Figure:1

Figure:2

Taxonomical classification:

Scientific name	Aloe barbadensis miller
Family	Asphodelaceae (Liliaceae)
Genus	Aloes

Kingdom	Plantae
Common name	Aloe vera

Description:
Succulent plant with thick, fleshy leaves that contain a clear gel-like substance.
Height: 2-3 feet
Cultivation:
Full sun to partial shade, well-drained soil, and tropical and subtropical areas.
Uses: Applications in medicine, cosmetics, and nutrition, such as wound healing, skin care, and digestive health.

Pharmacological activities:

Aloe vera has been reported to possess several pharmacological activities, including:
1**. Anti-inflammatory activity**: Aloe vera has been found to decrease the production of pro-inflammatory cytokines and enzymes, which lead to inflammation.
2**. Antioxidant activity:** Aloe vera's antioxidant qualities aid in shielding cells from harm brought on by free radicals.
3**. Antimicrobial activity**: Numerous pathogens, such as bacteria, viruses, and fungi, have been demonstrated to be susceptible to the antibacterial properties of aloe vera.
4. **Wound-healing activity**: Because of its ability to cure wounds, aloe vera has been used to treat burns, wounds, and skin irritations.

Chemical constituents:

Aloe vera contains a range of bioactive compounds, including:
1. **Polysaccharides:** Acemannan, one of the polysaccharides found in aloe vera, has been demonstrated to have immunomodulatory and wound-healing qualities.
2. **Glycoproteins:** Aloctin A, one of the glycoproteins found in aloe vera, has been demonstrated to have immunomodulatory and anti-inflammatory effects.
3**. Phenolic acids:** Aloin, one of the phenolic acids found in aloe vera, has been demonstrated to possess anti-inflammatory and antioxidant qualities.

Therapeutic Applications:

Aloe vera has several therapeutic applications, including:

1. **Skin care:** Aloe vera's hydrating, anti-inflammatory, and antioxidant qualities make it a popular ingredient in skin care products.
2. **Wound healing**: Because of its ability to cure wounds, aloe vera is used to treat burns, wounds, and skin irritations.
3. **Digestive health**: Aloe vera's anti-inflammatory and antioxidant qualities make it useful for treating digestive issues like irritable bowel syndrome.
4. **Oral health**: Because aloe vera has anti-inflammatory and antibacterial qualities, it is used to treat oral health conditions like gum disease and mouth ulcers.

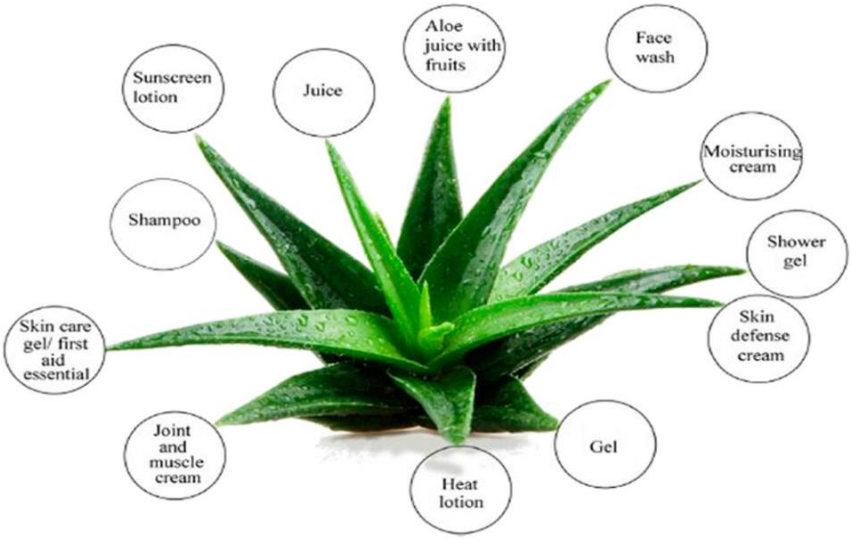

Figure:3

Conclusion:

Due to its many health advantages, aloe vera, a succulent plant, has been utilized in traditional medicine for generations. The plant's pharmacological actions are facilitated by a wealth of bioactive substances, such as polysaccharides, glycoproteins, and phenolic acids. Aloe vera has a number of medicinal uses, such as for wound healing, skin care, digestive health, and dental health. To completely investigate the possible medicinal uses of aloe vera, more research is required.

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