A REVIEW ON HERBAL ELIXIR FORMULATION ON ASHWAGANGHA (WITHANIA SOMNIFERA)

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Abstract:

Ashwagandha (Withania somnifera) is a well-known Ayurvedic rasayana herb recognized for its immune-enhancing and adaptogenic properties. This review highlights its key immunomodulatory actions, including improved macrophage activity, balanced cytokine response, and increased natural killer cell function. The formulation of an Ashwagandha-based herbal elixir using a hydroalcoholic base allows efficient extraction of active constituents and offers better absorption than conventional forms. Combining supportive herbs such as Giloy, Tulsi, Amla, Ginger, and Pippali further strengthens antioxidant, antimicrobial, and bioenhancing effects. Overall, an Ashwagandha elixir represents a promising natural approach for boosting immunity, with future clinical validation needed to confirm long-term safety and efficacy.

INTRODUCTION.

Ashwagandha (Withania somnifera) is a small shrub in the Solanaceae family, native to the Indian subcontinent, the Middle East and parts of Africa. In traditional Ayurvedic medicine it is designated a *rasāyana* a tonic intended to rejuvenate, increase vitality, resistance to stress, and longevity. the name "ashwagandha" is derived from Sanskrit ("ashwa" = horse; "gandha" = smell), referring to its characteristic smell and the belief in imparting strength like a horse.

Immunomodulation refers to the therapeutic adjustment of immune system responses, a concept gaining remarkable traction in pharmaceutical research. As global health consciousness increases, there is a substantial shift towards natural, herbal-based health products that offer efficacy without the adverse effects associated with synthetic compounds.

• In Ayurveda, "immunity" is somewhat analogous to Ojas (vital essence) and strength of the body's tissues and resilience (rather than the modern immunological system only). Herbs like ashwagandha are classified under rasayanas to support this resilience.

• Ashwagandha extracts have been shown to enhance macrophage function, including increased phagocytosis and nitric-oxide production.

• It has been reported to increase natural-killer (NK) cell activity in vitro and in vivo. For example, one review says: "Ashwagandha produces an immunomodulatory effect on natural killer cells, lymphocytes it enhances the activity of natural-killer cells.

• In a human study, supplementation with W. somnifera extract improved innate immune markers (e.g., increased NK cells, improved TBNK cell counts) after 30-60 days.

• In Ayurvedic texts, ashwagandha is used for Vāta and Kapha dosha imbalance, as a nervine tonic, for debility, convalescence, increasing strength, stamina, immunity.

• One source says: "Ashwagandha is used to build stamina, vitality, immunity and endurance.

• In pharmaceutics, an "elixir" is defined as a clear, sweetened, flavored hydro-alcoholic solution intended for oral use, meant to carry medicinal substances (active ingredients) and to be palatable.

• More specifically, one source states: "Elixirs are clear, sweetened, flavored, hydro-alcoholic solutions intended for oral use and are usually flavored to enhance their palatability.

• Another dictionary definition: "An elixir is a liquid containing a medicinal drug with syrup, glycerine, or alcohol added to mask its unpleasant taste. Elixirs are pleasantly-flavoured, sweetened liquids intended to be taken orally.

• Typical formulation considerations include: a solvent system (water + alcohol) to dissolve both water-soluble and alcohol-soluble components; sweeteners for taste flavourants sometimes glycerine or propylene glycol as adjuncts.

• The proportion of alcohol in an elixir may vary (some may have relatively high alcohol content if required for solubilising certain lipophilic ingredients).

• Historically, elixirs were seen in older pharmacopoeial texts as tonic or rejuvenating liquids ("elixir of life") though modern pharmacy treats them as dosage forms.

PLAN OF WORK

1. Selection of Material:

2. Selection of Extraction Method:

3. Preparation of Herbal Elixir:

4. Evaluation Parameters:

5. Results and Discussion:

DRUG AND EXCIPENTS PROFILE

Active Pharmaceutical Ingredient: Ashwagandha Root Extract

Biological Source: Dried roots of withania somnifera (L) Dunal

Family: solanaceae

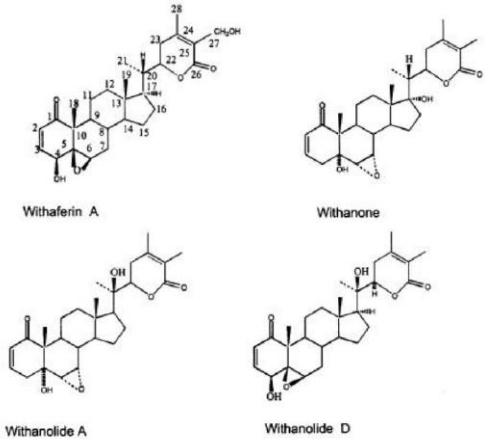
Primary Withanolides

Withaferin A (steroidal lactone)

Withanolide D (major bioactive compound)

Withanoside IV and V (glycosides)

Sitoindosides VII3X (acylsteryl glucosides)



Ashwagandha (Withania somnifera) – Acts as the main immunomodulator and adaptogen, rich in withanolides that enhance stress resistance and immune response.

Uses: Immunity booster, adaptogen, anti-stress

- Kingdom: Plantae
- Family: Solanaceae
- Genus: Withania
- Species: W. somnifera
- Biological name: Withania somnifera (L.) Dunal
- Other names: Indian Ginseng, Winter Cherry.

Methodology / Preparation of Herbal Immunity-Boosting Elixir (Ashwagandha-Base

1. Collection and Authentication of Plant Material

All herbal ingredients — Withania somnifera (Ashwagandha), Tinospora cordifolia (Giloy), Ocimum sanctum (Tulsi), Emblica officinalis (Amla), Zingiber officinale (Ginger), Piper longum (Pippali) — were collected from certified Ayurvedic raw drug suppliers.

2. Preparation of Plant Extracts

Each powdered plant material was extracted separately to obtain concentrated hydro-alcoholic extracts.

Procedure:

1. The coarsely powdered plant material (50 g each) was soaked in 70 % ethanol (1:10 w/v) for 48 hours (maceration method) with occasional stirring.

2. The mixture was filtered through muslin cloth and Whatman No. 1 filter paper.

3. Filtrate was concentrated using a rotary vacuum evaporator at 45–50 °C.

4. The semi-solid extracts were dried under reduced pressure and stored in airtight containers.

3. Preparation of Ashwagandha Extract

The root powder of Withania somnifera was subjected to Soxhlet extraction using 70 % ethanol for 6 hours.

The extract was concentrated and dried to obtain a semisolid mass containing standardized withanolides (2.5–5 %).

4. Formulation of the Herbal Elixir

Procedure:

1. Dissolve herbal extracts in ethanol (30 % v/v).

2. Add honey gradually with constant stirring to achieve uniform mixing.

3. Add purified water to make up the final volume (10 mL).

4. Mix thoroughly until a clear, homogeneous elixir is formed.

5. Filter through muslin cloth and transfer into amber glass bottles for storage.

DISCUSSION

Ashwagandha-based immunity elixir was successfully developed using authenticated herbal extracts and showed satisfactory physicochemical quality and immune-supportive potential. Ashwagandha served as the main ingredient due to its well-known rejuvenating and immunomodulatory effects, while supportive herbs such as Giloy, Tulsi, Amla, Ginger, and Pippali contributed additional antioxidant, antimicrobial, and bioenhancing actions. The hydroalcoholic base allowed efficient extraction of both polar and non-polar compounds, improving the formulation's overall effectiveness. The final product demonstrated good stability, palatability, and expected therapeutic benefits. However, further in vivo and clinical studies are needed to confirm long-term safety and immune efficacy.

CONCLUSION

This study successfully developed an Ashwagandha-based herbal immunity elixir that was stable, palatable, and compliant with pharmaceutical standards. Ashwagandha served as the key immunomodulatory ingredient, while complementary herbs such as Giloy, Tulsi, Amla, Ginger, and Pippali provided additional antioxidant and bioenhancing benefits. Overall, the formulation shows promise as a safe and effective natural immune-supportive product. Further clinical and in-vivo studies are needed to confirm long-term efficacy, optimize dosage, and assess user acceptability.

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