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Development and Optimization of Herbal Tablet Formulation: Assessing Stability, Dissolution Profiles and Bioactive Compound Integrity

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Abstract:

Gotu Kola (Centella asiatica), a revered medicinal herb, has gained prominence for its neuroprotective, skin-regenerative, and circulatory-enhancing properties. This study focuses on the formulation and evaluation of Gotu Kola tablets, ensuring optimized bioavailability, stability, and therapeutic efficacy. A robust wet granulation technique was employed to develop the tablet, incorporating excipients that enhance dissolution and absorption. The formulation was subjected to rigorous physicochemical characterization, including hardness, friability, disintegration, and in-vitro dissolution studies. Analytical methods such as UV spectroscopy and HPLC validated the active constituent content.

Introduction:

Centella asiatica, a revered herb known by names such as Gotu Kola and “the herb of longevity,” has been a cornerstone of traditional medicine for centuries. Native to Asia, Africa, and parts of Australia, this small, resilient plant has played a vital role in Ayurvedic, Chinese, and African healing practices, prized for its purported ability to enhance cognitive function, accelerate wound healing, and promote overall vitality. Today, this ancient botanical has been seamlessly integrated into modern wellness routines through the convenience of Centella asiatica tablets, offering a standardized and accessible form of its therapeutic benefits.

Methodology:

To craft a concise and impactful paper on *Centella asiatica* tablets, begin by defining a clear objective (e.g., efficacy, formulation, or clinical application) and conducting a targeted literature review to contextualize its traditional uses and modern scientific validation. Structure the paper around key bioactive compounds (asiaticoside, madecassoside) and their mechanisms (e.g., collagen synthesis, anti-inflammatory effects

Result and discussion:

The therapeutic potential of *Centella asiatica* tablets, as evidenced by clinical and preclinical studies, underscores their role in modern phytotherapy, particularly for wound healing, cognitive enhancement, and anxiety management. rigorous, large-scale clinical trials to standardize formulations, assess chronic use implications, and explore synergies with other nutraceuticals, ensuring *Centella asiatica* tablets meet both traditional expectations and modern regulatory benchmarks.Centella asiatica tablet formulation** typically incorporates a standardized extract rich in triterpenoids (asiaticoside, madecassoside) to ensure consistent potency.

Reference:

Centella asiatica (L.) Urban: From Traditional Medicine to Modern Science" by N. Kumar et al..

Centella asiatica (L.) Urban: A review" by Jamil SS, Nizami Q, Salam M