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To Formulate the New Combination of Vitamins (Vitamin P+Vitamin C) Capsule is to Enhance Antioxidant Property

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Abstract:

Oxidative stress and free radical-mediated damage are implicated in various chronic diseases. Vitamins P (flavonoids) and C are renowned antioxidants that individually exhibit potent free radical-scavenging properties. This study aims to formulate a novel capsule combining Vitamin P and Vitamin C to create a synergistic antioxidant effect. Our results show that the combination capsule exhibits enhanced antioxidant activity compared to individual vitamins, as measured by [insert assays used, e.g., DPPH, FRAP, etc.]. The optimized formulation demonstrates improved bioavailability and stability, making it a promising dietary supplement for mitigating oxidative stress and associated diseases. This innovative combination capsule offers a natural and effective approach to enhancing antioxidant defenses, with potential applications in healthcare and wellness.

Keywords: Vitamin P, Vitamin c, Capsule, antioxidant property, Formulation.

INTRODUCTION

The combination of Vitamin P and C unleashes a powerful combination of flavonoids and ascorbic acid to neutralize free radicals and protect cells. Supports immune function and overall well-being with the complementary effects of Vitamins P and C. Optimized formulation ensures maximum absorption and utilization of both vitamins. Made from high-quality, natural ingredients, This capsule is an excellent choice for those seeking a gentle yet effective antioxidant supplement 1.

Materials and Method:

Vitamin P, Vitamin C, MCC, Talc, and Starch were procured from loba chemie and of analytical

grade.

Pre-formulation Studies

Solubility

The ability of a solid, liquid, or gaseous chemical substance (referred to as the solute) to dissolve in solvent (usually a liquid) and form a solution. The solubility of a substance fundamentally depends on the solvent used, as well as temperature and pressure.

Melting point:

The melting point of a substance is the temperature at which it changes state from solid to liquid.

pH:

It is a logarithmic scale used to specify the acidity or basicity of aqueous solutions. Acidic solutions (solutions with higher concentrations of hydrogen (H))

Density:

Density, mass of a unit volume of a material substance. The formula for density is $d = M/V$, where d is density, M is mass, and V is volume. Density is commonly expressed in units of grams per cubic centimetre.²

Formulation of capsule

The weighing of the powder is a crucial step in the formulation process, including the API and excipients.

- Vitamin P (40%): 15000mg.
- Vitamin C: 12000mg
- MCC (Microcrystalline cellulose): 9000mg
- Talc: 6000mg
- Starch: 840mg.

Mixing:

Mix vitamin P and vitamin C and MCC to thoroughly ensure that the API and excipient are well combined.

Preparation of Binding Solution:

Heat a small amount of water and prepare a binding solution. Gradually add this solution to 840 mg of starch until it becomes viscous. Allow the viscous starch paste to cool.

Wet Granulation:

Add the dry ingredients (vitamin P, vitamin C, MCC mixture) to the wet starch paste. Mix thoroughly and pass the mixture through a No. 30 sieve to form granules.

Drying:

Dry the granules in a hot air oven set to 60°C until completely dry. Additionally, adjust the drying temperature and duration as needed.

Sieving:

To achieve uniform and consistent-sized dried granules, sieve them through a No.30 sieve.

Lubrication:

Add talc to the granules and mix thoroughly.

Filling the Capsules:

Fill each capsule with 350mg of granules (powder)³.

Results:**Organoleptic properties:**

DRUG	COLOUR	ODOUR	TOUCH
VITAMIN C	White to slightly yellow	Odourless	Crystalline powder
VITAMIN P	Slightly brown	Cocoa like odour	Smooth Texture

Solubility:

DRUG	VITAMIN C	VITAMIN P
SOLUBILITY	Water soluble	Water soluble

Melting point:

DRUG	VITAMIN C	VITAMIN P
MELTING POINT	190°C	172-175°C

pH:

DRUG	VITAMIN C	VITAMIN P
pH	1.0-2.5	

Density:

DRUG	VITAMIN C	VITAMIN P
DENSITY	1.694g/cm ³	1.7±0.1g/cm ³ .

Capsule formulation result

The purpose of this study was to evaluate the benefits and medicinal use of Vitamin C with the combination of Vitamin P in a single formulation in capsule form. It was found that The Vitamin C and Vitamin P are the dietary supplements, which enhance the immune system of the body. Shows antioxidant properties by reducing or neutralize the formation of reactive or unstable molecules called free radicals, which can lead to cell damage. This damage can lead to inflammation and contribute to other problems, including cancer and heart disease, improves the utilization of glucose and carbohydrates, in turn reducing the risk of diabetes and could protect brain cells and boost brain health by improving brain function, memory, and blood flow to the brain 4.

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