



Technology Summary: Honeysuckle-Cassia Compound Beverage

Opportunity Statement

A functional beverage is a drink containing ingredients such as herbs, vitamins or minerals that can provide specific health benefits. Examples of functional beverages include herbal, energy and nutraceutical drinks. The global functional beverage market was USD21 billion in 2007 and it is expected to grow to USD26.9 billion by 2012.

Herbal beverage is an important and fast-growing market segment of functional beverages in Asia, especially China. For instance, sales of the Chinese herbal beverage Wong Lo Kat grew from 180 million RMB in 2002 to 12 billion RMB in 2008.

Two of the more common ingredients in Asian herbal beverages are honeysuckle and cassia seeds:

- **Honeysuckle** (*Japonica Lonicera*) is a common herb used in traditional Chinese medicine (TCM). It is believed to have the benefit of removing toxins from the body for treatment of fever and epidemic disease in TCM practice. Phytochemical and pharmacological studies have shown that honeysuckle contains chlorogenic acid and several flavonoids that contribute to its traditional efficacy in TCM. For instance, studies have shown that one of the flavonoids, **Luteolin**, possesses a variety of pharmacological activities, including antioxidant, anti-inflammatory, antimicrobial and anticancer activities.
- **Cassia seeds** are the ripe seeds of cassia tora that contain active ingredients such as emodin monoglucoside, emodin anthrone, rheochrysidin, saccharides, protein, fats, chrysophanol and rheum emodin. Besides being a common ingredient in TCM, it is also used in Ayurveda medicine where it is believed to be beneficial to the eyes. Recent clinical research suggests that it may have applications as a diet supplement for blood glucose control.

Problem

There are many beverages on the market that contain multiple functional ingredients including honeysuckle and cassia. However, currently there are no beverages that contain just honeysuckle and cassia as the functional ingredients. This is due to problems such as short shelf life, lack of clarity and odor. The ability to develop such a beverage is highly desirable because the addition of other ingredients serves to dilute the beneficial health properties of honeysuckle and cassia described above.

Therefore, there is a need for a solution which addresses the limitations of current beverage technologies to provide a compound beverage that can provide the benefits of these two ingredients to address the fast-growing herbal beverage market.

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360ip's Partner Solution

360ip's partner has developed a novel technology for a honeysuckle and cassia seed compound beverage through two key steps:

1. Extraction

The extraction process involves mixing the two ingredients in an optimum formulation to undergo the extraction process at a temperature above 90 °C. The extract is further grinded in water to a fine size to obtain the liquid feed. The extraction process is able to obtain a high proportion of the soluble components in the two ingredients, effectively preserving the nutrients of the two ingredients.

2. Filtration and Flocculation

The feed is then filtered and later added with 0.01%~ 0.2% of a novel microcrystalline cellulose material to carry out the flocculation process. This process helps in the removal of any suspension or residue in the filtrate. The filtrate is further processed through a film filter to obtain a clear solution with stable characteristics. Additional ingredients like honey and sweetener are added at a later stage to optimize the flavor.

The phytochemical composition of the resulting beverage is as shown in the table below.

Phytochemical	Concentration (mg/100ml)
Chlorogenic Acid	≥50
Isochlorogenic Acid	≥6.5
Flavonoids	≥22
Anthraquinone	≥13

The technology provides the following advantages:

- Preserves optimal health benefits of both honeysuckle and cassia seed
- Results in clear and stable beverage (due to the use of microcrystalline cellulose as flocculating agent)
- Achieves high quality and prolonged shelf life (up to 24 months vs. 18 months for competing beverages)
- Eliminates distasteful odor
- Enables large-scale industrial production

Patents

There is one pending patent on this novel beverage technology.

360ip is seeking interested parties for the licensing, further development and commercialization of this technology-based product.

For additional information, contact: licensing@360ip.com

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