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REPORT ON STRUCTURE/FUNCTION CLAIMS FOR STEVIA

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BACKGROUND:
Since Stevia is approved only for use as a dietary supplement, and not as a sweetener or flavoring agent, this document will provide substantiation for non-sweetener uses of Stevia in the Cold-Free product.

NON-SWEETENER COMPONENTS:

Stevia (Stevia rebaudiana) contains over 100 identified bioflavonoids and terpenes, separate from the steviosides and rebaudiosides (sweet flavor compounds). Compounds ubiquitous to plants, such as minerals, sterols, and bioflavonoids are present. A partial list includes:

- Protein, calcium, phosphorus.
- Caffeic acid, Chlorogenic acid, Scopoletin, Umbelliferone, Quercetin, Isoquercitrin, Avicularin, Polystachoside
- Caryophyllene oxide, Spathulenol

Chamazulene (also found in chamomille)

Sterebins E, F, G, H (diterpenoids)  

Centaureidin (5,7,3'-trihydroxy-3,6,4'-trimethoxyflavone) (bioflavonoid)  

Sterols (stigmasterol, β-sitosterol, campesterol)  

**CLINICAL USES OF STEVIA REBAUDIANA:**

**Hyperglycemia**  

Hyperglycemia: 35% drop in blood sugar 6-8 hours after Stevia leaf extract  

Glucose Tolerance (normal humans): aqueous extracts from 5 g of Stevia rebaudiana leaves were given every 6 hours for 3 days to 16 volunteers. Stevia extract improved glucose tolerance after a glucose tolerance test (plasma glucose levels significantly decreased both fasting and after glucose load). A control group given arabinose did not show the same effects.  

Wound Healing: Traditional use and reports from doctors and individuals have noticed enhanced healing with less scarring of cuts, wounds, burns, acne, seborrhea, dermatitis, and psoriasis after topical application of aqueous Stevia extracts. Of importance was the finding that steviosides (the sweet principle of Stevia) did not have the wound-healing effect the herbal concentrate did.  

Blood Pressure: A preliminary report in humans found that Stevia herb lowered elevated blood pressure, but did not affect normal blood pressure. This report led to use of Stevia herb in South American countries for non-medical treatment of high
Anti-Inflammatory: Chamazulene, a component of other Stevia species (and possibly of Stevia rebaudiana), is an inhibitor of leukotriene B4 formation, which may have potential anti-inflammatory effects.


**SUMMARY:**

Stevia, like many other herbs and plant foods, contains many compounds found in other plants. Stevia also contains some unique compounds listed above, that are closely related to compounds found in other plants. Presumably, these ubiquitous along with unique compounds other than steviosides account for the observed effects of Stevia to date. Not mentioned are in vitro antibacterial effects, caries preventive effects, subjective effects on digestion, and folk use for treating influenza. Of course, these latter uses are medical claims, and require serious investigation as to their veracity. For our purposes, valid structure/function claims for Stevia include the following:

- Stevia contains compounds that affect the function of mitochondria, thereby affecting blood sugar levels.

- Stevia contains compounds that affect the function of mitochondria, thereby affecting blood pressure.

- Stevia contains chamazulene, an antioxidant-like compound which affects the function of enzymes (lipoxygenase) that generate inflammatory leukotrienes.

Therefore, inclusion of Stevia in Cold-Free is for purposes of dietary supplementation of the compounds listed above.