Consulting in Human Health, Toxicology & Regulatory Affairs

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Jerusalem July 19, 2020

Summary for the Product *CLEARMEL*

CLEARMEL is a product from Zuf, recommended for those who wish to support their respiratory system, by both diminishing the deleterious effects of smoking on the respiratory function and as an aid to modify the craving for tobacco. *CLEARMEL* should be taken continuously as a dietary supplement in order to modify depression and insomnia from chronic use of tobacco, easing withdrawal symptoms such as vertigo and nausea and as a modifier to the addiction to tobacco. The blend of herbs which comprise the bees' feed used in the production of *CLEARMEL* possess bioactive substances, such as triterpenoids, phenolic acids and flavonoids which promote relaxation and create a sense of aversion to tobacco odor while also dissipating mucous in the bronchi whenever expectoration is difficult. In addition, the herbal components are well known for their ability to ease nervous affections and irritability related to smoking.

These biological activities are recorded on the WHO monographs. The biological activities of the herbs composing the bees' feed are all corroborated by peer-reviewed scientific publications.

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The main biological activities of *CLEARMEL related* to its herbal components is listed below:

1) Sambucus nigra

Flavonoids represent the major characteristic constituents of this herb, mainly kaempferol, astragalin, quercetin and rutin. These components have strong anti-inflammatory activity. A recent study reports an anti- influenza activity (the common flu virus).

2) *Polygonum aviculare*

The major constituents of the aerial parts are flavonoids, derivatives of kaempferol, quercetin and avicularin. This component of the formula has shown to have diverse biological functions including hepato-protective effects, anti-inflammatory and platelets anti-aggregatory effect. In addition, recent reports indicate that *Polygonum aviculare* phytochemicals may act as bronchodilator thus being a potential aid to treat obstructive lung diseases.

3) *Pinus sylvestris*

Constituents in this botanical entity include monoterpene hydrocarbons such as α-pinene, β-pinen, D-limonene, myrcene etc. These compounds exhibit secretolytic and decongesting activities, thus aiding to relieve upper respiratory tract symptoms. In addition, antiviral and antibacterial activities were also reported.

4) *Plantago major*

Plantago major main chemical constituents are the flavonoids hispidulin, luteolin and apigenin. Fatty acids and polysaccharides were also identified. These compounds were reported not only to reduce cravings for cigarettes and smoking but also to reduce lung inflammation and cleaning out the lungs. In addition, these phytochemicals may inhibit pulmonary mast-cell degranulation, thus aiding in asthma and other allergic diseases.

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5) *Portulaca oleracea*

Many constituents of *Portulaca oleracea* have been isolated, including flavonoids (mainly kaempferol and apigenin) and alkaloids (including dopamine and noradrenalin). These compounds possess a wide range of pharmacological properties such as antibacterial, antiviral, anti-inflammatory and antioxidants. In addition, this herb is also an excellent source of omega-3 fatty acids, which play an important role in the enhancement of immune function.

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Bibliographic References in addition to the WHO monographs regarding the herbal substances in the formula.

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