COMPOSITIONS WITH HYPOCHOLESTEROLEMIC ACTIVITY

Patent Application Number: **MX/a/2016/016555**

Status: patent pending

Abstract: This invention relates to the use of compositions containing extracts obtained from the *Eryngium carlinae* plant in the treatment of dyslipidemias with reduced adverse effects on hepatocytes. The activity of these compounds has been tested in a murine hypercholesterolemic model. This invention relates to the use of compositions containing extracts obtained from the *Eryngium carlinae* plant in the treatment of dyslipidemias with reduced adverse effects on hepatocytes. The activity of these compounds has been tested in a murine hypercholesterolemic model.

Background

Increased blood cholesterol, also known as primary dyslipidemia or primary hypercholesterolemia, is the most prevalent metabolic disorder and is associated with congenital problems or inadequate eating habits; the last one is one of the greatest human health problems at the international level.

Currently, this disease is considered the main risk factor for developing cardiovascular disease. There are several drugs, such as statin and ezetimibe, which have shown to have a high efficacy against this disorder. However, several adverse reactions have been reported: skeletal muscle related events, psychiatric adverse reactions and testosterone reduction. Due to the side effects of these drugs other therapeutic agents have been sought.

It is known that plants are an excellent source of new molecules with applications of interest, mainly in the biological area. In traditional Mexican medicine, there are two species of *Eryngium*, known as "grass of toad", which have a great tradition to relieve some gastrointestinal diseases.

Stage of research

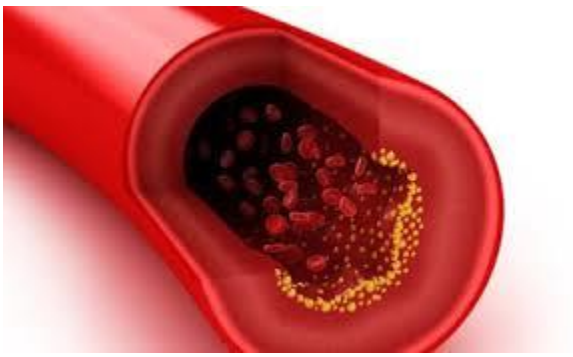
The extract from the "toad herb" as well as its main metabolite have been successfully extracted, evaluated and tested in animal models, showing the hypocholesterolemic activity (cholesterol reduction) of the extracts.

The results allowed to identify the proteins involved in the mechanism of pharmacological action. It is important to emphasize that the balance achieved in the individual is reached without causing collateral damages, such as liver damage. Thus, this represents a highly viable alternative for the development of herbal medicines for the treatment of lipidemia.

Application Market

The pharmaceutical market for the treatment of dyslipidemias grows at a rate of 9.4% from 2013, resulting in a market value of $ 37.9 billion by 2023, of which 71% will be attributed to sales of innovative drugs ($ 26.9 billion) And 29% to sales of generic drugs ($ 11.0 bn). The current market for dyslipidemia is dominated by statins that reduce low-density lipoprotein cholesterol (LDL-C) and have been shown to reduce the risk of cardiovascular events such as heart attacks and strokes. Other important lipid modulating drugs, such as Zetia (ezetimibe), fibrates, bile acid sequestrants and omega-3 fish oil agents comprise the remainder of the present space for the treatment of dyslipidemias.

In this sense, the present development represents an important field in the pharmaceutical industry, which seeks compounds with biological activity of natural origin. These compounds are the object of studies for the development of therapeutic alternatives using phytomedications, which present both improved activity and lower adverse effects. Until 2010, the market value in the pharmaceutical industry was equivalent to 80,000 million euros, of which up to 80% represented the herbal medicine industry.



Advantages

The extracts isolated from *Eryngium carlinae* has shown to have biological activity suitable for its use in:

- ✓ Reducing blood cholesterol levels, the reduction of "bad" cholesterol (LDL) content in blood without altering the concentration of "good" cholesterol (HDL), and without adverse effects due to its administration.
- ✓ Since these are extracts from a natural source, they have less side effects and this is a huge advantage against the current medications that already exist in the market.

Maturity projection

• Standardization of extract of natural origin and / or scaling of the primary metabolite under standard operating procedures.

• Initiation of preclinical tests according to the applicable regulations to determine the safety, efficacy and acute and chronic toxicity of the compositions.

• Start of clinical phase I, subject to protocol and authorization.

Circuito Exterior, Ciudad Universitaria, Delegación
Coyoacán, C.P. 04510, México D.F.
Tel.: 5616 2576 Fax: 5616 2217