CSIC, the Universidad Autonoma de Madrid and the hospital La Paz de Madrid have developed a functional drink which combines de-alcoholised wine and hops extract enriched in isoxanthohumol. It shows multiple in vitro and in vivo (in rats) bioactivities: antioxidant, anti-inflammatory and triglyceride control. Moreover, its organoleptic properties are similar to that of wine, especially its aroma. Companies interested in the commercialisation of this drink, under a patent licence, are sought for.

**Healthy drink of wine and hops (H. lupulus)**

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**An offer for Patent Licensing**

The new invention consists in a wine-based drink that includes natural extracts with antioxidant and anti-inflammatory effects. The base wine is de-alcoholised with supercritical fluids technology, preserving its organoleptic properties. This base is mixed with wine aroma, hops extract and, optionally, grape pomace and grape seed extracts. The hops extract is obtained with pressurised fluids, allowing the extraction of higher amounts of isoxantohumol.

The “in vitro” assays have demonstrated that the developed drink causes a decrease in the production of pro-inflammatory cytokines (TNF-α, IL-6) and an increase in the production of anti-inflammatory cytokines (IL-10), being this activity higher than the effect of some specific anti-inflammatory drugs.

On the other side, the in vivo studies carried out in rats, which were fed a high cholesterol diet, have shown an efficient control in the blood levels of triglycerides when this drink is ingested. Moreover, it causes a decrease in the oxidation levels of the organs with high amounts of lipids, as well as a decrease in the inflammation of the adipose tissue and the control of the metabolic activity of that adipose tissue.

**Main applications and advantages**

- Drinks producible with this technology combine the healthy properties of wine and beer, without the alcohol damaging effects.
- The method used for alcohol removal reduces its content to a mere 1%, preserving the organoleptic properties and bioactivity.
- The innovative subcritical water extraction is applied to obtain the hops and grape pomace and seed extracts for better addressing polyphenolic extraction.
- The method used for hops extraction, allows an enrichment in isoxanthohumol up to 10 times higher compared to organic solvent extraction.
- The final product will not contain residual toxic solvents, as all the extractions are carried out with supercritical/subcritical fluids.
- Experimental tests have shown that the anti-inflammatory activity of this drink is higher than the effect of some specific drugs, e.g. doubling the production of the anti-inflammatory cytokines (IL-10), compared to indometacin effect.
- The particular composition of drinks producible with this approach shall result in multiple bioactivities: antioxidant, anti-inflammatory and triglyceride control.

**Patent status**

Priority established by a Spanish patent
PCT application filed

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