Claims

Having described the invention as previously mentioned, the following claims are claimed as property:

1.- A pharmaceutical formulation, characterized in that it comprises an emulsion of 18β-glycyrrhetinic acid in a concentration of 0.01% to 30% by weight, wherein the formulation comprises additionally 2-(2-ethoxyethoxy)-ethanol from 40% to 71%; at least a stabilizer selected of polyoxyglyceride of capric, lauric, linoleic, oleic acid, or stearic acid triglycerides;

one or more of an ethoxylated fatty alcohol with the general structure $R-(OCH_2CH_2)_n-OH$ where R is an alkyl chain with size of 12 to 18 carbons and n represents the moles of ethylene oxide, which can have a value of 2 to 25;

castor oil or hydrogenated castor oil; an emollient oleaginous vehicle; and

distilled water.

2.- The formulation in accordance with claim 1, characterized in that the concentration of 18β-glycyrrhetinic acid is from 0.01% to 5% by weight.

3.- The formulation in accordance with claim 1, characterized in that the emollient oleaginous

vehicle is isopropyl myristate.

4.- The formulation in accordance with claim 1 or 3, characterized in that the percentages by weight of the components mentioned are: 0.01% to 30% of 18β-glycyrrhetinic acid; 40% to 60% for 2-(2-ethoxyethoxy)-ethanol; 10% to 20% for the emollient oleaginous vehicle; 0% to 20% for the castor oil or hydrogenated castor oil and 0% to 15% for ethoxylated fatty alcohol; and 5% to 50% for distilled water.

5. A method for preparing the formulation in accordance with claim 1, the method is characterized in that it comprises mixing the components, described in percentage by weight of the components: 0.01% to 30% of 18β-glycyrrhetinic acid; 40% to 71% 2-(2-ethoxyethoxy)-ethanol; 10% to 20% for the emollient oleaginous vehicle; 0% to 20% for castor oil or hydrogenated castor oil; 0% to 15% for the ethoxylated fatty alcohol; and 5% to 50% for the distilled water; mixing first the 2-(2-ethoxyethoxy)-ethanol and emollient oleaginous vehicle,;after reaching the desired temperature, stirring the mixture and adding the 18β-glycyrrhetinic acid until the active ingredient is completely dissolved, adding distilled water, stopping stirring and letting it cool down to room temperature.

6. The formulation in accordance with claims 1 to 4, characterized in that the emulsion has a permeation of 1.8 µg/h/cm^2, a particle size of 2500

nm, a hydrodynamic radius of 2850 nm, a diffusion coefficient of 1.26 $\mu m^2/s$ and a polydispersity of 39.8.

7.- A **gel** characterized in that it comprises the formulation according to claims 1 to 4, wherein the gel comprises gelling elements such as cellulose derivatives selected from group hydroxypropyl cellulose (HPC), hydroxyethyl cellulose (HC) or hydroxypropyl methyl cellulose (HPmC), acrylic acid polymers or a member of the poloxamer family.

8.- The gel in accordance with claim 7, characterized in that the gel comprises preservative and stabilizing agents selected from a group comprising butylated hydroxytoluene (BHT), butylated hydroxyanisole, L-cysteine, propylparaben, methylparaben, benzalkonium chloride, sodium benzoate and benzoic acid.

9.- A pharmaceutical formulation characterized in that it comprises a nano emulsion of 18β-glycyrrhetinic acid in a concentration of 0.01% to 30% by weight, wherein the formulation comprises additionally 2-(2-ethoxyethoxy)-ethanol from 40% to 71%;

at least a stabilizer selected of:

a polyoxyglyceride of capric, lauric, linoleic, oleic acid, or stearic acid triglycerides;

an ethoxylated fatty alcohol with the general structure $R-(OCH_2CH_2)_n-OH$ where R is an alkyl chain

with size of 12 to 18 carbons and n represents the moles of ethylene oxide, which can have a value of 2 to 25;

castor oil or hydrogenated castor oil;

an emollient oleaginous vehicle; and

distilled water.

10.- The formulation in accordance with claim 9, characterized in that the percentages by weight of its components are: 0.01% to 30% of 18β-glycyrrhetinic acid; 40% to 60% for 2-(2-ethoxyethoxy)-ethanol; 10% to 20% for emollient oleaginous vehicle; 0% to 20% for castor oil or hydrogenated castor oil; 0% to 15% for ethoxylated fatty alcohol; and 5% to 50% for distilled water, wherein the emollient oleaginous vehicle is isopropyl myristate.

11.- A method for preparing the formulation according to claim 9, the method is characterized in that it comprises mixing the components described, in percentage by weight of the components: 0.01% to 30% of 18β-glycyrrhetinic acid; 40% to 60% for 2-(2-ethoxyethoxy)-ethanol; 10% to 20% for the emollient oleaginous vehicle; 0% to 20% for castor oil or hydrogenated castor oil; 0% to 15% for ethoxylated fatty alcohol; and 5% to 50% for distilled water, mixing first the 2-(2-ethoxyethoxy)-ethanol, with the emollient oleaginous vehicle; adding the castor oil or hydrogenated castor oil and the ethoxylated fatty

alcohol; heating the mixture in the range of 50 to 80 degrees Celsius, stirring the mixture and adding 18β-glycyrrhetinic acid until completely dissolution, adding distilled water, stopping stirring and allowing to cool to room temperature.

12.- The formulation according to claim 9, characterized in that it has a particle size of 1 to 100 nm.

13.- The formulation in accordance with claim 9, characterized in that it has a particle size of 500 to 1000 nm.

14.- The formulation in accordance with claim 9, characterized in that the permeation value of the nano-emulsion is of 0.6 to 8 $\mu g/h/cm^2$, wherein the nano-emulsion has a diffusion coefficient of a 0.003 to 1.5 $\mu m^2/s$ and a polydispersity of 2 to 50.

15. – The formulation or gel in accordance with any one of the preceding claims for use in therapy.

16.- Use of the formulation or gel according to any one of the preceding claims, in the manufacture of a medicament for use in treating conditions caused by human papillomavirus viral infections, such as low-grade and high-grade intraepithelial lesions and cervical cancer.

17. Use of the formulation or gel according to any one of the preceding claims, in the manufacture of a medicament for use in treating cervical cancer.