injection , comparing to using large liposuction instrument, could overcomes the limitation in administration site, one lipolysis injection treatment course may require several dozens of injections every 2 weeks and 1 to 6 treatment course(s) to reach the goal of lipolysis effect. Although anesthetic has been added to the injection solution, the injected site may still suffer from severe inflammation and pain after the anesthesia has subsided, in addition, the number of treatment and injection frequency also needs to be improved. Consider of the risks of severe postoperative pain, nerve paralysis, topical tissue necrosis, or infections, the limited dosage in single injection, and restricted to be applied in face, most surgeons no longer inject the ingredients mentioned above to reduce topical fat of the patient; although the United States has approved the first lipolysis inject product made from sodium deoxycholate, it has a certain degree of side-effects and could only use in double chin, making its usage to be limited. Overall, a product that could effectively reduce topical fat, has lower side effects, safer is lacking on the current market; therefore, under the high demand of surgeons and consumers, it is a trend in the market to develop a topical lipolysis injection formulation that is safer, with low side effects, and could overcome the mentioned defects and limitations.

## SUMMARY ~~OF THE INVENTION~~

The present ~~invention~~disclosure provides a composition used for reducing topical fat and reducing weight, comprising a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1. Preferably, the weight ratio of resveratrol to turmeric extract is 1:19.

The composition of the present ~~invention~~disclosure can inhibit adipocytes growth

and induce planned adipocyte apoptosis to reach the effect of reducing topical fat deposits and decreasing adipocytes; it can also reduce body weight but does not cause the surrounding cells and the tissue inflammation or tissue necrosis, nor would it cause inflammation or severe pain to the surrounding tissues, thus avoids the tissue damage, inflammation, and pain caused by above mentioned liposuction surgery or low-invasive lipolysis instrument. Moreover, it would not cause necrosis nor result in problems such as surrounding tissue inflammation or infection in the surrounding tissues as triggered by necrosis caused by lipolysis injection composition ingredient phosphatidylcholine or sodium deoxycholate. ~~The present invention~~It can reduce weight as well. Accordingly, in one aspect, there is provided a use of a composition in the manufacture of a pharmaceutical composition for reducing topical fat in an administration site of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the pharmaceutical composition is to be administered to the administration site of the subject. In another aspect, here is provided a use of a composition in the manufacture of a pharmaceutical composition for reducing weight of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the pharmaceutical composition is to be administered to an administration site of the subject. In another aspect, there is provided composition for use in reducing topical fat at an administration site of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the composition is to be administered to the

administration site of the subject. In a further aspect, there is provided a composition for use in reducing weight of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the composition is to be administered to the administration site of the subject.

~~According to the present invention, the~~The term "turmeric extract" as used herein refers to the extract comprises curcumin, wherein the turmeric extract comprises 80% to 100% of curcumin.

The present ~~invention~~disclosure also provides a preparation method of a composition comprising resveratrol and turmeric extract. The method comprises: mixing a composition with at least one of the pharmaceutically acceptable salts composition, pharmaceutically acceptable stabilizers or bacteriostatic agents or pharmaceutically acceptable emulsifiers, excipient such as surfactants, anesthetics, wherein the composition comprises resveratrol and turmeric extract; and

preparing the mixture into an injection formulation.

Preferably, the stabilizer comprises, but is not limited to, xylitol, sorbitol, polydextrose, isomalt or dextrose.

Preferably, the "pharmaceutically acceptable excipient" comprises, but

(SDS).

The present ~~invention~~disclosure further provides an application of the composition in preparing a pharmaceutical composition which is used for reducing topical fat and reducing weight.

The present ~~invention~~disclosure further provides a pharmaceutical composition used to reduce topical fat and reduce weight; wherein, the pharmaceutical composition comprising an effective dosage of the composition which is used for reducing topical fat and reducing weight and a pharmaceutically acceptable carrier.

The pharmaceutical composition of the present ~~invention~~disclosure can exist in multiple forms, including, but not limited to, liquid, semi-solid and solid pharmaceutical forms. For example, liquid solutions (e.g. injectable and infusible solution), dispersions, suspensions, powders, lyophilized powders, or liposomes or transdermal ointment or patch. The preferred form depends on the expected mode of administration and therapeutic application. Preferably, the pharmaceutical composition of the present ~~invention~~disclosure is in the form of infusible solutions, and the preferred administration mode is non-intestinal mode, such as injectable solution. In an ~~embodiment of the present invention~~example, the pharmaceutical composition comprises an effective dosage of resveratrol and turmeric extract composition for reducing topical fat is subcutaneously administered. Preferably, the pharmaceutical composition comprising an effective dosage of resveratrol and turmeric extract composition for reducing topical fat is administered to subcutaneous fat by subcutaneous injection. In an ~~embodiment of the present invention~~example, the formulation of the ointment is well

known in the art, including, but not limited to, active agent, wax, water, petrolatum, preservatives, higher alcohols, polyhydric alcohols, emulsifiers, solvents, thickeners, plasticizers, fragrances, buffers, antibiotics, stabilizers or mixtures thereof.

The dosage of the pharmaceutical composition of the present ~~invention~~disclosure can be adjusted accordingly to different parameters. The parameters include, but are not limited to the type of the subject, the weight of the subject, and the thickness and area of the topical fat of the subject. The pharmaceutical composition of the present ~~invention~~disclosure can be administered once, multiple or continuously within 24 hours, and can also be administered multiple or continuously per week or per month. The method of administration is by injection, subcutaneous implantation, implantable infusion, ointment, or patch. Preferably, the method of injection includes, but is not limited to subcutaneous injection, subcutaneous implantation, intravenous drip, intravenous infusion pump method, implantable infusion pump method.

The present ~~invention~~disclosure further provides an application of the pharmaceutical composition used for reducing topical fat and reducing weight, which comprises administering an effective dosage of the pharmaceutical composition comprising resveratrol and turmeric extract composition to a topical sites of a subject, to make the topical site of the subject achieve the effect of inhibit adipocyte growth, promote adipocyte apoptosis, decrease fat deposition, and reduce weight.

Preferably, the subjects are human or animals.

Preferably, the effective dosage of the pharmaceutical composition to

be administered to the subject every time is from 0.4 mg/kg to 100 mg/kg. More preferably, the effective dosage of the pharmaceutical composition to be administered to the subject every time is from 1 mg/kg to 60 mg/kg.

Preferably, the term "reduce body weight" as used herein refers to the reduction of body weight gain of the subject by 5% to 30%.

~~According to the present invention, the~~The term "reducing topical fat" as used herein refers to: after administering the effective dosage of compositions comprising resveratrol and turmeric extract of the present disclosure~~invention~~, adipocyte growth could be inhibited, adipocytes initiate procedural or planned apoptosis, and the topical deposit fat could be reduced. As shown in the ~~embodiment~~example of the present ~~invention~~disclosure, the amount of topical fat reduction can be detected by administering a specific range of the dosage of the composition comprising resveratrol and turmeric extract, and measuring the growth inhibitory rate of adipocytes, cell apoptosis degree, and the change of the subcutaneous fat and visceral fat of rats in a specific period. Preferably, the topical fat includes, but is not limited to, subcutaneous fat, visceral fat, topical deposit fat, or adipocytes.

Preferably, the topical fat sites include, but are not limited to, face, jaw, arm, waist, abdomen or thighs.

The effect of the composition or the pharmaceutical composition of the present ~~invention~~disclosure is significantly superior to that of resveratrol or turmeric extracts administered alone. Moreover, there has never been a precedent of resveratrol or turmeric extracts administered alone, or together, to reduce topical fat by topical injection. Furthermore, the present ~~invention~~disclosure is primarily

to inhibit adipocyte growth and promote adipocyte apoptosis to reduce topical fat by administrating medicine through topical injection, without affecting surrounding cells or tissues, and no significant side effect was found in animal assay. Therefore, the composition or the pharmaceutical composition of the present ~~invention~~disclosure is safer with fewer side effects. The technical level of the composition or the pharmaceutical composition in the present ~~invention~~disclosure is completely different from existing techniques or products. Thus, it could be used to avoid the problems of topical cells necrosis, severe pain, inflammation and necrosis and/or infection of surrounding tissues caused by conventional liposuction surgery, lipolysis instruments such as high-intensity focused ultrasound lipolysis instrument, or lipolytic injection ingredients such as phosphatidylcholine and sodium deoxycholate. Moreover, it can also significantly reduce postoperative bruising, swelling, pain and sensory paralysis, as well as shorten recovery period of the patient.

## BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is the bar chart presenting the effect of inhibiting preadipocytes growth in each group tested by MTT assay in the present invention.

Fig. 2 is the bar chart presenting the effect of inhibiting differentiating adipocytes growth in each group tested by MTT assay in the present invention;

Fig. 3 is the bar chart presenting the effect of the formulation UL003C and sodium deoxycholate on mature adipocytes growth inhibition tested by MTT assay in the present invention.

Fig. 4 is the bar chart presenting the effect of the formulations UL003A, UL003C and UL003R on adipocyte apoptosis promotion in the present

invention obtained by labeling with Annexin V/PI and then detecting with flow cytometer.

Fig. 5 is the bar chart presenting the effect of the formulations UL003A, UL003C and UL003R on adipocyte apoptosis promotion in the present invention obtained by performing caspase 3 stain and then detecting with flow cytometer.

Fig. 6 is the bar chart presenting the effect of turmeric extract, resveratrol and the formulation UL003C on adipocyte apoptosis promotion in the present invention obtained by performing caspase 3 stain and then detecting with flow cytometer.

Fig. 7 is the bar chart presenting the effect of the formulation UL003C and sodium deoxycholate on adipocyte apoptosis promotion in the present invention obtained by labeling with Annexin V/PI and then detecting with flow cytometer.

Fig. 8 is the line graph presenting the weight change of rats in each group after the rats are fed with a high-fat diet to induce topical fat increasing and topically administered with medicine via injection in the present invention.

Fig. 9 is the bar chart presenting theshows the ratio of subcutaneous fat reduction of rats in each group after the rats are fed with a high-fat diet to induce topical fat increasing and topically administered with medicine via injection in the present invention.

Fig. 10A is the bar chart presenting the serum biochemical values (creatinine and glutamic oxaloacetic transaminase (GOT)) of rats in each group after the rats are fed with a high-fat diet to induce topical fat increasing and topically administered with medicine via injection in the present invention.

apoptosis reaction.

In this experiment, the expression of apoptosis-inhibiting protein Bcl-2 and apoptosis-promoting protein Bax2 in adipose tissue of the subcutaneous injection site of rats in each group was determined by Western blot analysis, and the ratio of Bax and Bcl-2 was used to evaluate the effect of composition UL003C of the present invention on adipocyte apoptosis. In this experiment, the subcutaneous adipose tissues in the inferior inguinal region around the injection sites of the rats sacrificed in example 8 was used to perform protein extract with 450 μl T-PER®, 30 μg of protein of each group was taken to perform polyacrylamide gel electrophoresis (SDS-PAGE) and then transfer the protein to PVDF membrane. The Bcl-2 antibody, model number sc-7382, used in Western blot was purchased from Santa Cruz and, the Bax antibody, model number sc- 526, was purchased from Santa Cruz. Data of all groups are presented in Mean ± SD; letters refer to the statistic results, and different letters represents that there is statistical difference among groups ($p<0.05$), same letters represents that there is no statistical difference among groups ($p>0.05$).

Results are shown as in Fig. 11, compared with control group, either low-dosage or high-dosage of the composition UL003C of the present invention could significantly enhance the Bax ~~Bcl-2~~ expression ($p<0.05$) and significantly inhibite ~~Bax~~Bcl-2 expression ($p<0.05$), and its Bax/Bcl-2 ratio was significantly higher than that of control group ($p<0.05$). The results indicate that injecting the composition UL003C of the present invention to the rats could effectively induce the adipocytes in the adipose tissue initiating apoptosis. The present invention could indeed and effectively induce adipocyte to initiate

**WHAT IS CLAIMED IS:**

1. Use of a~~A~~ composition ~~used for~~in the manufacture of a pharmaceutical product for reducing topical fat ~~and reducing weight~~at an administration site of a subject, ; ~~characterized in that,~~wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the pharmaceutical product is to be administered to the administration site of the subject.

2. Use of a composition in the manufacture of a pharmaceutical product for reducing weight of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the pharmaceutical product is to be administered to an administration site of the subject.

3~~2~~. The use~~composition~~ as claimed in claim 1 or 2~~; characterized in that~~, wherein the weight ratio of resveratrol to turmeric extract is 1: 19.

~~3. An application of the composition as claimed in claim 1 or 2 in preparing a pharmaceutical composition used for reducing topical fat and reducing body weight.~~

4. The use as claimed in claim 1 or 2, wherein ~~A pharmaceutical composition used for reducing topical fat and reducing body weight; characterized in that,~~ the pharmaceutical product~~composition~~ further comprises ~~an effective amount of the composition as claimed in claim 1 or 2 and~~ a pharmaceutically acceptable carrier.

~~5. An application of the pharmaceutical composition as claimed in claim 4 in preparing a pharmaceutical composition for reducing topical fat and reducing weight; characterized in that, administering an effective amount of the pharmaceutical composition to a topical site of a subject to make the topical~~

~~site of the subject achieve the effect of reducing topical fat and reducing weight.~~

~~5~~6. The use~~application~~ as claimed in claim 1 or 2~~5; characterized in that~~, wherein the subject is animal or human.

6. The use as claimed in claim 1 or 2, wherein the administration site is a topical fat site.

7. The use~~application~~ as claimed in claim ~~6~~5~~; characterized in that~~, wherein the topical fat site comprises face, jaw, arm, waist, abdomen or thighs~~, etc~~.

8. The use~~application~~ as claimed in claim 1 or 2~~5; characterized in that~~, wherein the pharmaceutical product is to be administered ~~administering method is~~ by injection, subcutaneous implantation, implantable infusion, ointment or patch.

9. The use~~application~~ as claimed in claim 8~~; characterized in that~~, wherein the injection is subcutaneous injection.

10. The use~~application~~ as claimed in claim 9~~; characterized in that~~, wherein the subcutaneous injection is to be injected to subcutaneous fat layer.

11. The use~~application~~ as claimed in claim 8~~; characterized in that~~, wherein the effective amount of the pharmaceutical product~~composition~~ to be administered to the subject is at ~~to administrate~~ a dosage of 0.4 mg/kg to 100 mg/kg ~~pharmaceutical composition to the subject~~ each time.

12. The use~~application~~ as claimed in claim 11~~; characterized in that~~, wherein the effective amount of the pharmaceutical product~~composition~~ to be administered to the subject is at~~to administer~~ a dosage of 1 mg/kg to 60 mg/kg ~~pharmaceutical composition to the subject~~ each time.

13. A composition for use in reducing topical fat at an administration

site of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the composition is to be administered to the administration site of the subject.

14. A composition for use in reducing weight of a subject, wherein the composition comprises a weight ratio of resveratrol to turmeric extract ranging from 1: 30 to 10: 1, and wherein an effective amount of the composition is to be administered to the administration site of the subject.

15. The composition as claimed in claim 13 or 14, wherein the weight ratio of resveratrol to turmeric extract is 1: 19.

16. The composition as claimed in claim 13 or 14, further comprising a pharmaceutically acceptable carrier.

17. The composition as claimed in claim 13 or 14, wherein the subject is animal or human.

18. The composition as claimed in claim 13 or 14, wherein the administration site is a topical fat site.

19. The composition as claimed in claim 18, wherein the topical fat site comprises face, jaw, arm, waist, abdomen or thighs.

20. The composition as claimed in claim 13 or 14, wherein the composition is to be administered by injection, subcutaneous implantation, implantable infusion, ointment or patch.

21. The composition as claimed in claim 20, wherein the injection is subcutaneous injection.

22. The composition as claimed in claim 21, wherein the subcutaneous injection is to be injected to subcutaneous fat layer.

23. The composition as claimed in claim 20, wherein the effective amount of the composition to be administered to the subject is at a dosage of 0.4 mg/kg to 100 mg/kg each time.

24. The composition as claimed in claim 23, wherein the effective amount of the composition to be administered to the subject is at a dosage of 1 mg/kg to 60 mg/kg each time.