



Evaluation of complexion improving effect of a Chinese Herbs double-layer essence

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Introduction:

Healthy complexion has become a new trend in skin care. A good complexion not only makes us look great, it also reflects our health, so having an ideal healthy complexion is especially important. According to research, the ideal facial skin color of Chinese people is white and bright, with a low degree of red and yellow [1]. But the reality is that Chinese skin is getting darker and yellower as they get older. This is also one of the skin problems that most young Chinese women struggle with [2]. A good complexion is not only white, but also being uniform and spotless, bright and shiny.

In recent years, consumers are concerning more about the safety and efficacy of cosmetics and they also tend to use natural raw materials for skin care cosmetics. Cosmetics with natural active ingredients have the characteristics of less irritation, high safety and significant effects, which are becoming more and more popular. The non-traditional dosage form and the unique use feeling also gradually receives the consumer's attention.

Many traditional Chinese Herbs have excellent whitening and brightening effects and widely welcomed and recognized in my country [3]. In this study, An active compound composed of Glycyrrhiza, Artemisiae scopariae, Scutellaria baicalensis, Lycium barbarum and Safflower was choosed and formulated into a double-layer essence [4-6]. The objective of this study was to assess the complexion improving effect of the essence.

Results & Discussion:

3.1 In vitro evaluation

3.1.1 Tyrosinase inhibition rate

Tyrosinase activity was decreased by more than 93% with 1% essence treatment (see Fig.-2).

3.1.2 DPPH free radical scavenging test

The Chinese Herbs double-layer essence with the concentration above 5% had better free radical scavenging effect (see Fig.-3).

3.1.3 B16 cell viability assay

The results are shown in Fig.-4. It indicated the essence had no cytotoxic at the experimental concentration.

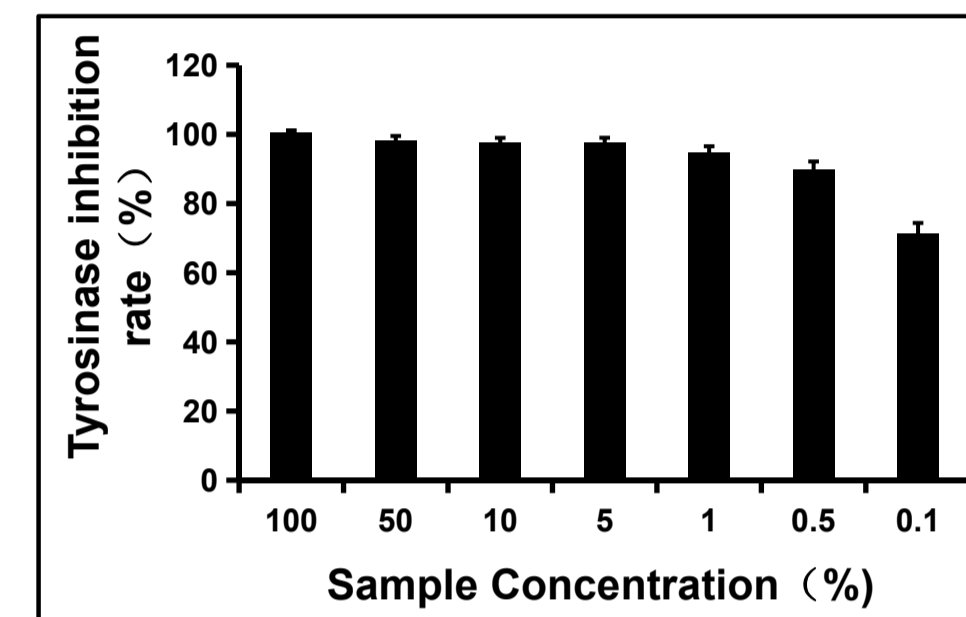


Fig.-2 Tyrosinase inhibition rate of Chinese Herbs double-layer essence.

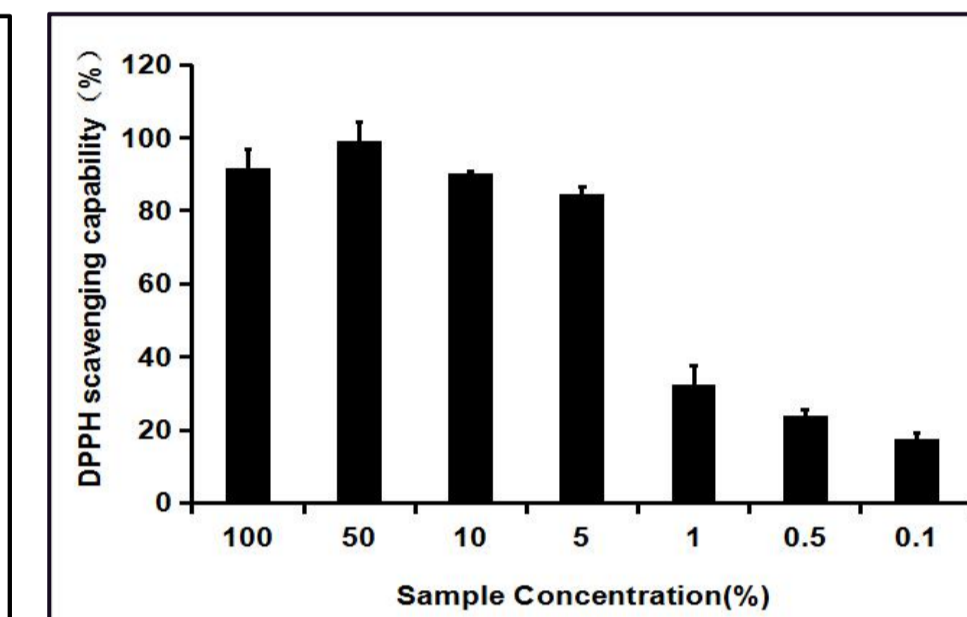


Fig.-3 DPPH free radical scavenging rate of Chinese Herbs double-layer essence.

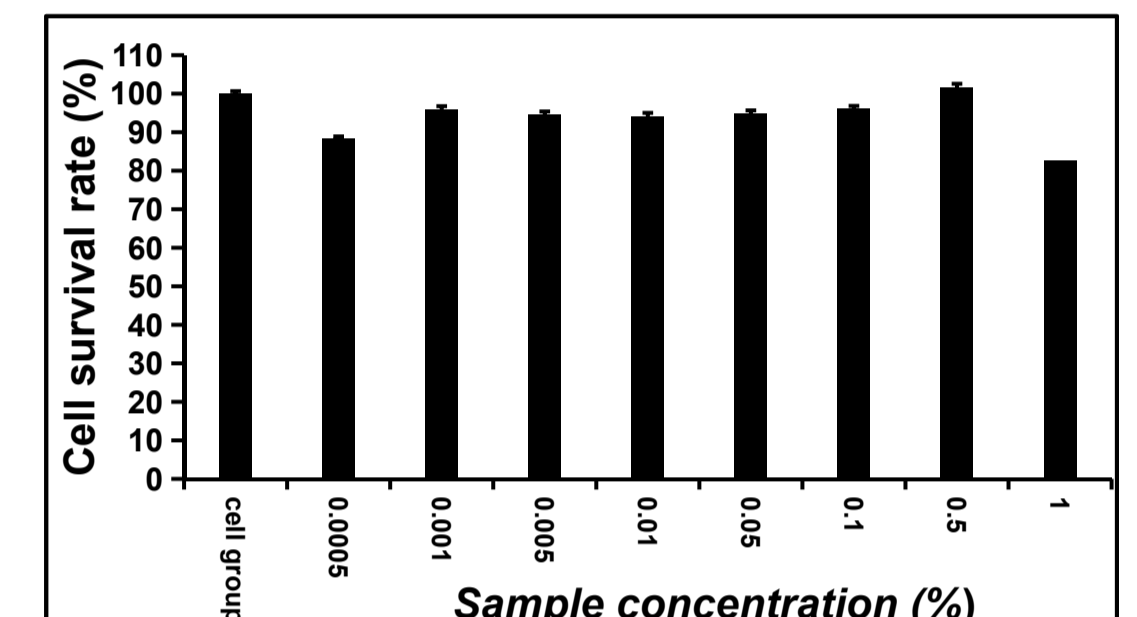


Fig.-4 B16 cell viability of Chinese Herbs double-layer essence.

3.2 Human test

3.2.1 Skin overall melanin and chromaticity change

After the volunteers used it for 4 weeks, the results showed (Fig.-5.) the melanin levels of the whole face had decreased by an average of 7.95%, the L* value of the whole face was increased 6.30%, it is proved that the essence has an significant effect of facial brightening. The b* value of the whole face was decrease by 2.96%, proving the effect of reducing yellowness.

3.2.2 Change of Feature counts of Skin spots

The results are shown in Fig.-6 and Fig.-7, 75% volunteers' feature counts of surface spots and brown spots had an significant decrease, 91% volunteers' feature counts of UV Spots had an significant decrease.

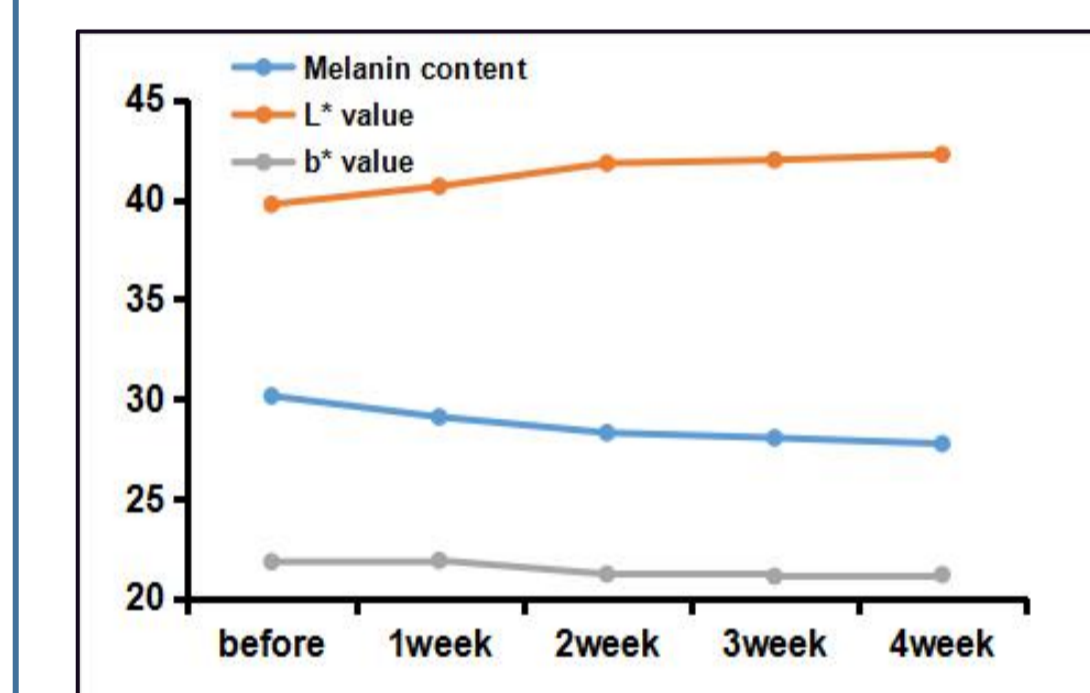


Fig.-5 Skin overall melanin and chromaticity change.

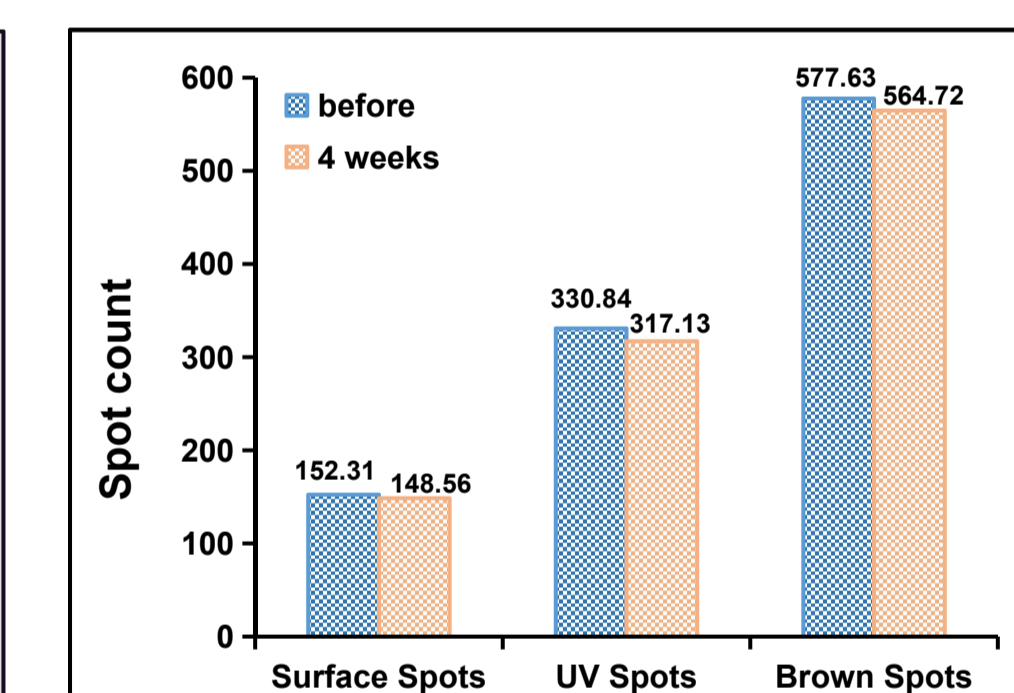


Fig.-6 Change of Feature counts of Skin spots analyzed by VISIA.

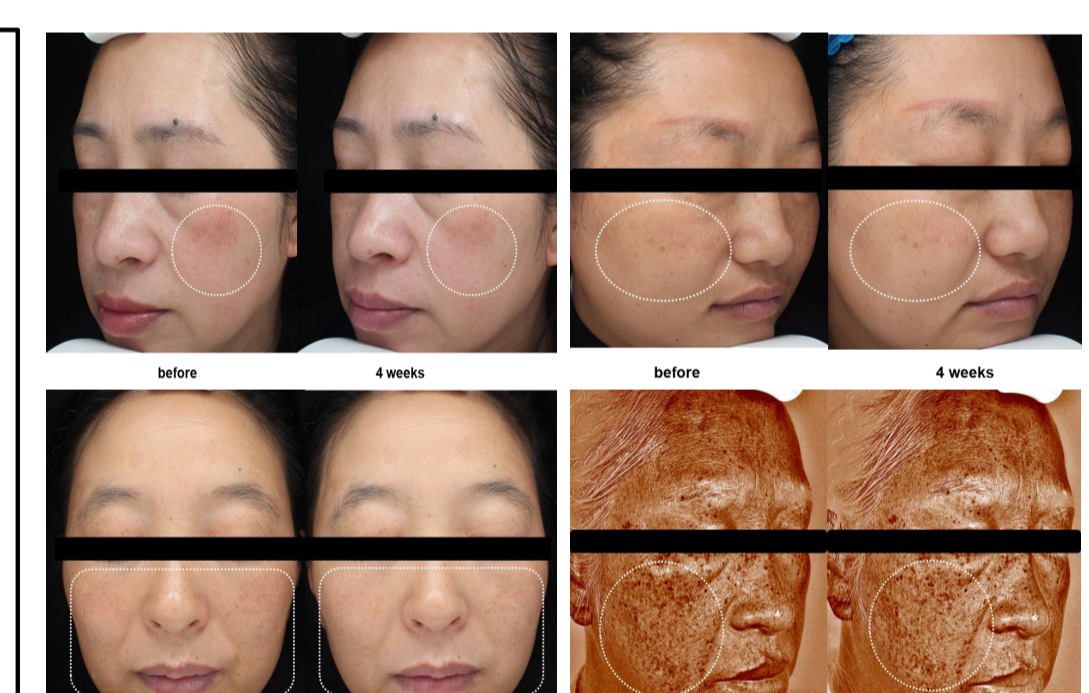


Fig.-7 Visia images of part volunteers

3.2.3 Subjective satisfaction of volunteers

After the four weeks of test, the volunteers filled in the subjective satisfaction questionnaires, score from the skin moisturizing, bright whiteness, etc., full of 10 points, a score below five indicates dissatisfaction, a score of 5-8 is generally satisfactory, a score above 8 is very satisfactory. More than 90% of volunteers thought they have more even skin and fewer spots, satisfied with the improvement in skin yellowness, brightness and gloss as well.

Materials & Methods:

2.1 Preparation of double-layer essence samples

The test samples were prepared according to Tab.-1.

2.2 Evaluation method of double-layer essence complexion improving effect

The evaluation of the double-layer essence mainly includes in vitro experiments and human experiments. The specific experimental methods are shown in Fig.-1.

Tab.-1 Sample formula table.

Phase	Ingredient	Content (%)
A	SODIUM HYALURONATE	0.07
	GLYCERIN	2.1
	PENTYLENE GLYCOL	1.4
	DISODIUM EDTA	0.035
	WATER	63.665
	GLYCYRRHIZA URALENSIS (LICORICE) ROOT EXTRACT	0.028
B	PROPYLENE GLYCOL	2.2848
	SCUTELLARIA BAICALENSIS ROOT EXTRACT	0.0168
	MORUS ALBA BARK EXTRACT	0.0168
	LYCIUM CHINENSE EXTRACT	0.0168
	ARTEMISIA CAPILLARIS EXTRACT	0.0168
	PHENOXYETHANOL	0.315
C	ETHYLHEXYLGLYCERIN	0.035
	SQUALANE	7.5
	ISONONYL ISONONANOATE	12
	CARTHAMUS TINCTORIUS (SAFFLOWER) SEED OIL	6
	TOCOPHERYL ACETATE	1.5
	SIMMONDSIA CHINENSIS (JOJOBA) SEED OIL	3

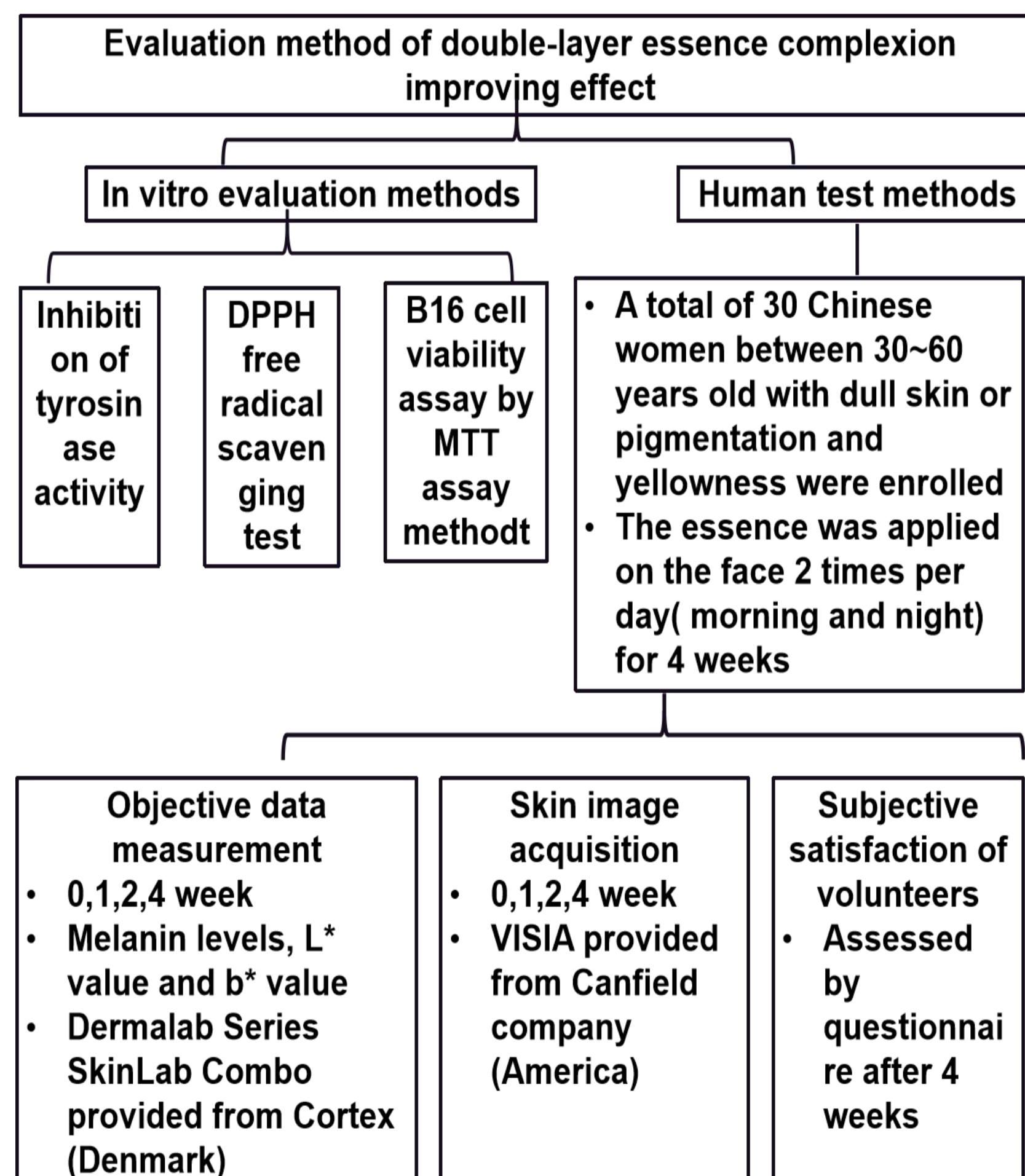


Fig.-1 Double-layer essence complexion improving effect evaluation method chart

Conclusions:

The Chinese Herbs double-layer essence has an excellent effect on improving of complexion. It shows the significant effect of reducing spots, skin dull and yellowness, increasing skin brightness and evenness, it has a certain application prospect in the development of effective skin care products.

Aknowledgments:

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