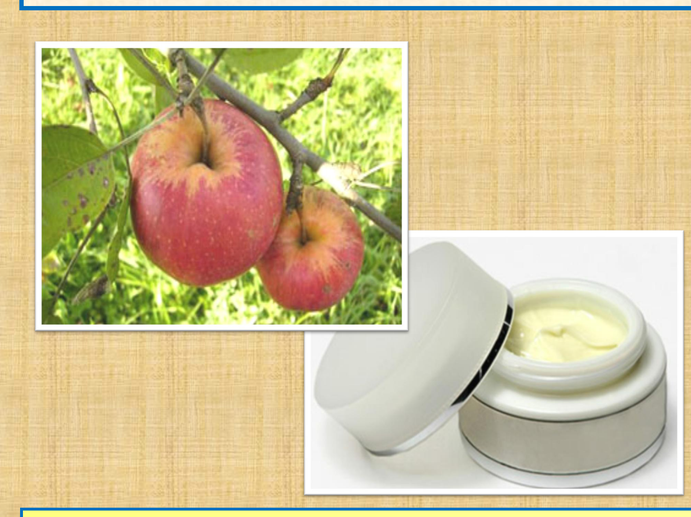
WILD APPLE FRUIT EXTRACT AS ACTIVE SUBSTANCE IN UV PROTECTION CREAM – INVESTIGATION OF *IN VIVO* HYPOPIGMENTATION EFFICACY



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Use of dermocosmetic creams containing active and safe natural active substances reprensents a good basis for prevention and/or treatment of UV-related-skin-diseases.
Extract of wild apple fruit can be potentially used as a good and safe hypopigmentation substance in many dermocosmetic products in the treatment of skin changes or for lightening of dark spots appearing on the skin due to oxidative stress and/or photodamage.

The aim of this study was to investigate a content of polyphenols and fruit acids, as good lightening and anti-irritating active substances, in cream with oil extract of wild apple fruit (*Mali sylvestris fructus*, (L.) Mill., Rosaceae), originated from Serbia, as well as *in vivo* hypopigmentation efficacy of this cream.

MATERIALS AND METHODS

Cream was made with 6% of wild apple fruit oil extract (obtained by sunflower oil as solvent and digestion as extraction method) and stabilized with conventional non-ionic mixed emulsifier (EmulgadeSE).

Content of polyphenols-PPs and fruit acids-FAs into formulated cream after preparation was investigated using HPLC analysis.

In vivo estimation of hypopigmentation efficacy after 7 days of cream application, after artificially induced skin hyperpigmentation (by dihydroxyacetone), was investigated employing the biophysical methods on the skin of healthy volunteers (by measuring melanin index-MI and erythema index-EI).

RESULTS

Formulated cream revealed satisfying content of polyphenols (36.07 mgPPs/100g cream) and fruit acids (120.30mgFAs/100g cream) after preparation.
Application of cream with wild apple fruit oil extract, as a good source of these bioactive agents, after artificial skin hyperpigmentation induced significant decrease of MI (ΔMI was -22.40±16.68 after 3 days and -30.40±12.32 after 7 days) and EI (ΔEI was -25.00±29.91 after 3 days and -26.60±38.79 after 7 days).
Formulated cream with with wild apple fruit oil extract demonstrated good hypopigmentation and anti-irritating effects on human skin after cream application after artificially induced skin hyperpigmentation, probably due to the synergistic effects of polyphenols and fruit acids from extract.

CONCLUSIONS

UV protection cream with wild apple fruit oil extract, as active hypopigmentation substance, and stabilized with non-ionic emulsifier, might be suitable for possible usage for prevention of oxidative stress-related skin damages, for skin hyperpigmentation lightening and for UV skin protection.

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