COSMECEUTICALS

NPARR 3(1), 2012-01, Formulation and comparative evaluation of poly herbal anti-acne face wash gels

Rauvolfia serpentina (L). Benth. ex Kurz. (Apocynaceae) possessing antibacterial properties are widely used in modern herbal medicines. Curcuma longa L. (Zingiberaceae), a readily available antiseptic, possess antioxidant, antibacterial, blood purifying and antiinflammatory properties and used in various skin creams. Azadirachta indica A. Juss. (Meliaceae) possess astringent, antiviral, discutient, stimulant and antibacterial properties and works excellently well against acne and keeps the skin healthy.

Acne is the common skin problem that 85% of the teenagers face today. In this study, poly herbal anti-acne face wash gels were prepared using two polymers Carbopol and hydroxy propyl methyl cellulose (HPMC) along with the extracts of plants R. serpentina, C. longa, and A. indica. The gel formulations were prepared in four different concentrations of 50, 100, 200 mg/ml as Gel-CRB 100, Gel-HPMC 50, Gel-HPMC 100, Gel-HPMC 200, respectively. The formulations were tested for the anti-acne activity by turbidimetric method. Results showed that the gels were non-irritant, stable and posses anti-acne activity. The efficacy when tested with a standard was almost same to that of Clindamycin gel. From this study, Gel-HPMC 100 was proved to be stable and considered as an effective herbal formulation for acne treatment [Arun Rasheed*, G. Avinash Kumar Reddy, S. Mohanlakshmi, C.K. Ashok Kumar (Department of Pharmaceutical Chemistry, Sree Vidyanikethan College of Pharmacy, A. Rangampet, Tirupati, Andhra Pradesh, India), Pharmaceutical Biology, 2011, 49(8), 771-774].

NPARR 3(1), 2012-05, Evaluation of the efficacy of a topical cosmetic slimming product combining tetrahydroxypropyl ethylenediamine, caffeine, carnitine, forskolin and retinol, in vitro, ex vivo and in vivo studies

Three studies were performed to investigate the mechanism of action and evaluate the efficacy of a topical cosmetic slimming product combining tetrahydroxypropyl ethylenediamine, caffeine, carnitine, forskolin and retinol. The Ex vivo study on skin explants showed that caffeine and forskolin both stimulated glycerol release and demonstrates for the first time that retinol and carnitine in combination synergistically stimulated keratinocyte proliferation, which leads to an increase epidermal thickness. The double-blind, randomized, placebo-controlled clinical study associating circumference measurements on five selected parts of the body, cutaneous hydration measurements as well as blinded expert grading of skin aspect was conducted on 78 women who applied the product or placebo twice daily for 12 consecutive weeks. After 4 weeks of twice-daily application of the product, significant reductions in circumference of abdomen, hips–buttocks and waist were already observed. Improvements concerned all the measured body parts after 12 weeks. Orange peel and stubborn cellulite decreased significantly from 4 weeks of treatment and tonicity improved from 8 weeks, demonstrating that the product improved skin aspect. At the end of the study, eight parameters of the thirteen evaluated were significantly improved in the active group and compared with placebo [Roure, R.*, Oddos, T., Rossi, A., Vial, F. and Bertin, C. (Johnson & Johnson Consumer France, 1 rue Camille Desmoulins, 92787 Issy-Les-Moulineaux France), International Journal of Cosmetic Science, 2011, 33(6), 519-526].

NPARR 3(1), 2012-06, A tomato stem cell extract, containing antioxidant compounds and metal chelating factors, protects skin cells from heavy metal-induced damages

Heavy metals can cause several genotoxic effects on cells, including oxidative stress, DNA sequence breakage and protein modification. Among the body organs, skin is certainly the most exposed to heavy metal stress and thus the most damaged by the toxic effects that these chemicals cause. Moreover, heavy metals, in particular nickel, can induce the over-expression of collagenases (enzymes responsible for collagen degradation), leading to weakening of the skin extracellular matrix. Plants have evolved sophisticated mechanisms to protect their cells from heavy metal toxicity, including the synthesis of metal chelating proteins and peptides, such as metallothioneins and phytochelatins (PC), which capture the metals and prevent the damages on the cellular structures. To protect human skin cells from heavy metal toxicity, we developed a new cosmetic active ingredient from Lycopersicon esculentum (tomato) cultured stem cells. This product, besides its high content of antioxidant compounds and moderate content of metal chelating agents, demonstrates its ability to protect the skin cells from heavy metal-induced damages.
compounds, contained PC, effective in the protection of skin cells towards heavy metal toxicity. We have demonstrated that this new product preserves nuclear DNA integrity from heavy metal damages, by inducing genes responsible for DNA repair and protection, and neutralizes the effect of heavy metals on collagen degradation, by inhibiting collagenase expression and inducing the synthesis of new collagen [Tito, A., Carola, A., Bimonte, M., Barbulova, A., Arciello, S., de Laurentiis, F., Monoli, I., Hill, J., Gibertoni, S., Colucci, G. and Apone, F.*(Fabio Apone, Arterra Bioscience srl, Laurentiis, F., Monoli, I., Hill, J., Gibertoni, S., Colucci, G. and Apone, F.*(Fabio Apone, Arterra Bioscience srl, via B. Brin 69, Napoli, Italy), International Journal of Cosmetic Science, 2011, 33, 543-552].

NPARR 3(1), 2012-07, Lifting properties of the alkamide fraction from the fruit husks of *Zanthoxylum bungeanum*

The fruits of various *Zanthoxylum* species are used as a spice in the Chinese and Japanese cuisine because of their delicate flavour and tingling properties. The lipophilic hydroxylipamides hydroxy α- and β-sanshools (1a, b) have been identified as the tingling principles of these plants, and previous studies have validated a sanshool-rich lipophilic extract from the fruit husks of *Z. bungeanum* Maxim. (*Zanthalene®*) as an anti-itching cosmetic ingredient. Because tingling is a sort of ‘paralytic pungency’ and *Zanthalene®* potently inhibits synaptic transmission, we have investigated its capacity to relax subcutaneous muscles and act as a topical lifting agent for wrinkles. An anti-wrinkles extract rich in spilanthol (2), a lipophilic alkaloid having sensory properties similar to those of *Zanthalene®,* was used as a reference. Short-term (lifting effect) and long-term (anti-wrinkle) improvements of skin roughness parameters were evaluated by both objectives and subjectives measurements. An immediate ‘lifting’ effect was observed with the sanshool-rich lipophilic extract, at dosages at which the reference alkamide extract was inactive in the objective assays. Limited desensitization after repeated application and good overall tolerability were observed, although a modest long-term anti-wrinkle effect was shown by both products. Taken together, these observations validate the use of sanshool-rich lipophilic extracts as an efficacious, immediate-action lifting agent, and exemplify the relevance of sensory observations to foster the development of innovative cosmetic ingredients [C. Artaria*, G. Maramaldi, A. Bonfigli, L. Rigano and G. Appendino (Indena S.P.A., Viale Ortles, 12, 20139 Milan, Italy), International Journal of Cosmetic Science, 2011, 33(4), 328-333].

NPARR 3(1), 2012-08, Standardized extract of *Syzygium aqueum*: a safe cosmetic ingredient

*Syzygium aqueum*, a species in the Myrtaceae family, commonly called the water jambu is native to Malaysia and Indonesia. It is well documented as a medicinal plant, and various parts of the tree have been used in traditional medicine, for instance as an antibiotic. In this study, we show *S. aqueum* leaf extracts to have a significant composition of phenolic compounds, protective activity against free radicals as well as low pro-oxidant capability. Its ethanolic extract, in particular, is characterized by its excellent radical scavenging activity of EC_{50} of 133 μg mL^{-1} 1,1-diphenyl-2-picrylhydrazyl (DPPH), 65 μg mL^{-1} 2,2′-azino-bis(3-ethylbenzthiazoline-6-sulphonic acid) (ABTS) and 71 μg mL^{-1} (Galvinoxyl), low pro-oxidant capabilities and a phenolic content of 585–670 mg GAE g^{-1} extract. The extract also displayed other activities, deeming it an ideal cosmetic ingredient. A substantial tyrosinase inhibition activity with an IC_{50} of about 60 μg mL^{-1} was observed. In addition, the extract was also found to have anti-cellulite activity tested for its ability to cause 98% activation of lipolysis of adipocytes (fat cells) at a concentration of 25 μg mL^{-1}. In addition, the extract was not cytotoxic to Vero cell lines up to a concentration of 600 μg mL^{-1}. Although various parts of this plant have been used in traditional medicine, this is the first time it has been shown to have cosmeceutical properties. Therefore, the use of this extract, alone or in combination with other active principles, is of Importance [U. D. Palanisamy*, L. T. Ling, T. Manaharan, V. Sivapalan, T. Subramaniam, M. H. Helme and T. Masilamani (Jeffrey Cheah School of Medicine and Health Sciences, Monash University Sunway Campus, Jalan Lagoon Selatan, 46100 Bandar Sunway, Malaysia), International Journal of Cosmetic Science, 2011, 33(3), 269-275].