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Abstracts

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A Complex of Botanical Ingredients Managing Impure Skin

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Anovel product based on botanical ingredients, here called CBMM Complex (Trade Name: Cutipure CLR™) showing potent anti inflammatory and antimicrobial features, has been found to effectively manage impure skin, with a special focus on comedones, pimples, and pustules.

Quality Requirements for Essential Oils Used in Perfume and Cosmetics Industry, Household Chemistry, Aromatherapy, Medicine and Other Areas

W.S. Brud

Essential oils have been known and applied as medicines and perfume ingredients since prehistoric times. Oil-giving plants had been already grown in ancient China, India (sandalwood), Sumeria (cedar trees, roses), Egypt (fragrant resins – myrrh, olibanum, galbanum), Greece (roses, oranges), Rome (citrus plants, lavender) and thereafter cultivated in Europe (fragrant herbs), North and South America (citrus plants, mint) and in Australia (eucalyptus and tea trees). They had been used by sorcerers, priests and alchemists to prepare different remedies and a variety of perfume and fragrant products or to carry out the magic and rituals (e.g. embalmment procedure in Egypt). As the valuable and much-desired products, essential oils became a luxury, made expensive presents (myrrh and incense were two out of three offerings brought by the Magi to the infant Jesus) and were items of commerce, on the international market as well. Demand for essential oils started to increase sharply already in prehistoric times and in the Middle Ages. The oils were obtained by means of methods that fully preserved natural composition of raw plant materials, but an unavoidable variety of distillation procedures led to significant differences in quality (the oldest alembic dates back to 3500 BC and it has been found in Texila, Pakistan). Some changes with respect to variable quality problems appeared in the middle of the nineteenth century and at the beginning of the 20th century when developments in chemistry and advances in synthesis of fragrant compounds began to emerge. At the same time there was the need to normalize the quality and then work up appropriate standards for essential oils and other aroma products of plant origin.

* These abstracts appear as they were originally published. They have not been edited by the *Journal of Cosmetic Science.*

Liquorice (Glycyrrhiza sp.) root characteristics and its application in cosmetology

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Beneficial effects of plant extracts have been known since the prehistoric times. Modern cosmetology is currently more than ever interested to apply valuable raw plant materials in manufacturing cosmetic products since the plant extracts contain a plethora of active ingredients. Potential skin caring effects are related to their antioxidant, anti-inflammatory and moisturising properties. Exposure of the skin on ultraviolet radiation gives rise to formation of free radical species that react with DNA, proteins and fatty acids leading to various oxidation products. The latter liberate pro-inflammatory mediators responsible for irritation of the epidermis. Free radicals generated by UV irradiation also take part in the process that may damage skin regulatory mechanisms, resulting in visible photoageing effects such as wrinkles, hyperpigmentation and the loss of skin firmness. Making an attempt to reduce negative effects of ultraviolet radiation, some raw materials of plant origin (e.g. liquorice, salvia, ginseng, aloe, arnica) are added to cosmetic products in order to incorporate their principal ingredients, i.e. flavonoids and triterpenes hawing potentially anti-oxidative and anti-inflammatory activity.

New Methodology for the Search of Novel Active Substances Delaying Dermal Fibroblasts Senescence

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Cell senescence appears as one of the major causes of tissue aging, including the skin. Dermal fibroblasts are responsible for maintaining much of the structural integrity of the skin, particularly its elasticity and capacity of regeneration in response to external insults. However, with age cells turnover is altered and the proportion of senescent fibroblasts increases, which affects their function. Dermal fibroblasts have a limited lifespan – after about 50 cell divisions they stop proliferating and enter to the state of senescence until they die. It has been demonstrated that the number of cumulative cell duplications depends on age – from 30 years of age it is reduced by approximately 10% every decade. Molecular mechanisms that mediate cell senescence have been extensively studied during the last years. One of the main causes that provoke the transition from a proliferating to a senescent state appears to be the shortening of telomeres in adult cells, during their continuous divisions. On the contrary, stem cells, which maintain their capacity to proliferate indefinitely, maintain telomere length owing to the activity of a ribonucleoprotein complex named telomerase / TERT (Telomere End Reverse Transcriptase). The expression of this enzyme is lost in differentiated adult cells. The most studied level of regulation of this expression is at the transcriptional activity of the TERT gene promoter. Inhibiting senescence is expected to elongate the lifespan of skin fibroblasts by increasing their number of divisions before senescing or by increasing the time of cell survival during senescence, and thus favour their role in maintaining the quality of the dermal connective tissue. The main objective of our work has been to set up a cell-based in vitro screening system suitable for the identification of substances that activate the TERT gene promoter.

Leadership in Crisis

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Everybody talks about it and you can read about it in all media: the crisis. In this article the author analyses different perspectives and their effect on our consciousness. He also explores sensible ways of dealing with it. The main focus will be on how the crisis impacts on our abili- ty to act and how it influences our behavioural patterns. In the second part, he offers some tips and ideas on how to escape from auto-pilot type reactions and how to increase our ability to act reasonably in difficult times. Let us first have a look at how the crisis presents itself to us and what we can do when dealing with it.