
A theoretical treatment has been developed for the optical properties of a layered structure which absorbs and scatters light. This theory predicts that the logarithm of the inverse of reflectance (LIR) of the surface should be a useful parameter for the examination of that structure. This approach has been applied to a study of skin in vivo. An instrument was constructed for use in clinical situations to measure the LIR spectrum of skin over the visible region of the spectrum (450-760 nm). The contributions to the observed spectra made by pigments and the skin structure were deduced by reference to the theoretical model. Numerical indices were used to quantify the changes in skin haemoglobin content following the application of vasoconstricting preparations.


A portable reflectance instrument for the rapid quantification of cutaneous haemoglobin and melanin is presented. Light emitting diodes (LEDS) are used to illuminate the skin and a silicon photodiode to detect the light diffusely reflected from the surface. Reflectance measurements are made at only three wavelengths and the problems of pigment quantification consequent upon this are discussed. In addition to quantification of haemoglobin and melanin, qualitative information on the redox state of the blood may also be obtained. Measurements made on port wine stain, which had been treated with 576 nm cw laser radiation at times between 1 and 6 months previously, provided information on the vascular response to this thermal injury.

Jean-Luc Leveque; *Cutaneous Investigation in Health and Disease*; Marcel Dekker INC. New York and Basel 1989

R.Marks, C.Edwards, *Methods to aid the coice of shade from a range of colour disguise cosmetics*, University of Wales College of Medicine, 26 May 1993

The range of cosmetic camouflage products for major disfiguring skin conditions are well known, and are available in a wide range of shades. They require considerable skill and training for their blending and application which also needs a finishing layer of powder for best effect. These products are admirably suited to their use on major blemishes, but would be difficult to apply by a consumer at home for minor blemishes.
Tausch, J. Gaßmüller, W.J. Kessler, Beurteilung der protektiven und pflegenden Potenz von Lichtschutzpräparaten mit biophysikalischen Methoden, Wissenschaft Dt.Derm. (43), 1995


Ch. Edwards, The Mexameter MX 16 TM, Biogeninering of the Skin: Methods and Instrumentation, CRC Press 1995

The Mexameter MX 16 TM (Courage and Khazaka Electronic GmbH, Germany) is a dual instrument incorporating a melanin index and an erythema index meter. Both of these are based on the diffuse remittance spectrometry principle, whereby a measurement is made of the absorbency of a volume of tissue at specific wavelengths, from which the concentration of absorbing pigment can be estimated and used to construct a pigment index.


Skin color varies depending on age, racial background, seasonal change and pigmentation disorder. Whiter skin color is a desire of oriental women. Various whitening beauty cosmetic products for inhibiting pigmentation process prevails in the market. Measuring skin color is a popular clinical tool for evaluating depigmentation effect of these products. Therefore, the cosmetic scientists need to develop new effective depigmenting ingredients as well as powerful measuring tool for skin color.


During dermatological safety and efficacy studies, huge amounts of data- both instrumental data as well as evaluator scores may accumulate. We have developed an integrational data with online data acquisition capability. The program runs in a Macintosh network. A graphical interface facilitates data entry. A multilevel password system secures unauthorised use. In order to comply with GCP/GLP requirements all data entries and any possible changes relating to experimental studies- both scores and instrumental values -are secured in a log file together with date, time, and initials of the person entering the data. The program can at present acquire data from: Chromameter(Minolta), Tewameter, Corneometer, pH-Meter, Sebumeter, Mexameter,(all Courage and Khazaka). However, the open architecture would easily allow to incorporate more instruments with a serial interface. Data can be exported in DOS, windows or Macintosh format for easy import into any spreadsheet or statistics programs. The program has been completely validated and successfully used in a contract research organisation for over 12 months. Automatic data acquisition has proven to be very useful tool to facilitate and speed up data analysis and to enhance the quality and reliability of test results.

Clinical evaluation of a depigmenting cream: TRIO-D® in melasma of the face, Nouvelles Dermatologiques Vol.16 1997

Literatur/Mexameter 03/2015
To evaluate the depigmenting activity of TRIO-D® (combination of Hydroquinone-Alpha Hydroxy Acids (AHA)-ascorbic acid derivative) in melasma of the face, a double-blind, randomized, multicentric study versus excipient was conducted in 38 women. They were divided into two parallel groups and had applied to each hemiface, twice daily, either the verum or the excipient on the pigmented spots during 8 weeks. The objective assessment was done through the measurement and the comparison before and after treatment with the melanic index: Mexameter®. A clinical evaluation of the area and the intensity of the pigmented spots was assessed with Visual Analog Scales. The objective as well as the subjective results show a significant loss of pigmentation of the spots treated with TRIO-D® cream compared with the excipient cream since the first month of treatment. The efficacy of TRIO-D® cream is similar whatever the duration of melasma.


Retinol as well as RA (retinoic acid) is well known to have many beneficial effects on (photo)aged skin. But the skin irritation potential and unstable condition of the products containing them have been some problems in their cosmetic uses. So, retinol containing gel product (MDC gel) was developed for less skin irritancy and more stability in cosmetic products. To examine the clinical effects of retinol containing product, we used clinical non-invasive assessment techniques on 40 volunteers for 6 months maintaining double-blind test conditions. According to our results, the use of retinol containing product improved skin color and hydration level slightly. But there was no statistical difference. There was no erythema reaction compared to the use of RA. Especially, the skin elasticity increased above 20% and skin wrinkles of crows' feet region decreased more than 10%. Besides the instrumental analysis, a large majority of volunteers felt that their skin was improved in the case of wrinkles, elasticity, hydration and color.


A.O. Barel, P. Clarys, Skin Surface Color Measurements - A Comparison Between the Chromameter® and the Mexameter. 12th ISBS, Boston, 06/98.


A. Castro, A. Vargas, Alternativas Naturales en el Tratamiento del Fotoenvejecimiento. IFSCC May 1999

A.De Castro, A.M.Vargas, Evaluacion del tratamiento del prurito con el residuo lipidico de la cebada. Actualizaciones Terapeuticas Dermatologicas y Esteticas, Vol. 22 No. 5, Sept/Oct 1999

A.M. Vargas, A. Castro, Proteina de Soja: Evaluacion de su Efecto Hidratante. IFSCC May 1999

C. Rojas, A. Castro, L. Castro, R. Brito, Utilizacion del Residuo Lipidico de la Cebada en el Tratamiento del Prurito. IFSCC May 1999

A. Vexler, I. Polyansky, R. Gorodetsky, Multi-Parametric Examination of Irradiated Skin in Breast Cancer Patients. Skin Research and Technology, Vol.5 No. 2, May 1999


Prof. Ph. Humbert, Melanin And Erythema Measurements By The Mexameter MX 16, Université de Franche-Comté, Laboratoire d’Ingénierie et de Biologie Cutnaées, 2000.


A.de Castro, Measurement of the Effectivity of Natural Raw Materials: Soja Protein, Barley, Titanium Dioxide and Zinc Oxide. XXIst IFSCC Congress 2000, Berlin

Consumer’s preference for natural materials, as well some obtained by biotechnology processes instead of animal or chemical origin, in products for skin care, obeys to the fact that on one hand they are looking to avoid possible adverse reactions, and in the other hand, they constitute renewable sources of raw material.


Two types of skin reflectance instruments are available nowadays for the determination of skin color: a tristimulus colorimeter (Chromameter from Minolta) using the CIE L*a*b* color system and the narrow-band simple reflectance meters (DermaSpectrometer from Cortex and Mexameter from Courage-Khazaka) using the erythema/melanin indices. The purpose of this study was to compare the capabilities of the three instruments (sensitivity, repeatability and correlation) in vitro and in vivo.


A.Msi, T.Rosemiatri, E.Azizah Apt, R.I.S.Tranggono, Comparison Study of Single and Multi Alpha Hydroxy Acids in Decreasing the Number of Melanin. 5th ASCS March 2001.


Narrow-band spectrophotometry that yields melanin (M) and erythema (E) indexes is a convenient method for assessing skin colour. The objective of the study was to assess the phenotype-associated body site differences in skin complexion.

Thomas Förster, Henkel KgaA, Cosmetic Lipids and the Skin Barrier, 2001 by Marcel Dekker.

There is no doubt that the application of cosmetic lipids has many positive effects on the structure and function of the skin. These effects are pleiotropic, caused either by direct interaction with the epidermis, particularly the stratum corneum, or indirectly, by influencing the physiologic, homeostatic condition of the skin.


Literatur/Mexameter 03/2015

5
Does Asian Skin Induce Significant Changes in Sun Protection Factor (SPF) Determination Compared to Caucasian Skin: One of the First In-Vivo Correlations, IFSCC Magazine January/March 2002, Vol. 5, Nr. 1

The aim of this study was to compare the SPF of three sunscreens (SPF 6/8 – 15/20 – 25/30) and 2 standards (FDA, COLIPA fla P2), according to COLIPA recommendations, in panels of Asian (Singapore) and Caucasian (France) volunteers.

Octadecenedioic acid, a new nature-derived ingredient made via biofermentation from oleic acid, has demonstrated efficacy in a variety of applications, including skin toning, dandruff reduction and deodorancy.

Whitening Complex with Waltheria indica Extract and Ferulic Acid, Cosmetics & Toiletries October 2002, Vol. 117 No. 10

Waltheria indica extract, ferulic acid and certain other ingredients act synergistically in a whitening complex that inhibits tyrosinase and provides mild exfoliation.


An absorbing matter, SPC Asia, November 2002

The harmful effects of solar UV radiation on skin and hair are well documented. The damage to white skin can be extremely severe. It starts with erythema, goes on to sunburn and can ultimately end in skin cancer. The damage to hair, particularly blonde, is significant, too. Solar UV radiation makes hair brittle, rough and difficult to comb. Human hair has been shown to lose tensile strength as a result of cleavage of the disulphide bond of hair keratin upon exposure to UV radiation.

Tamanu Oil has been used traditionally in the South Pacific as a local medicine for a variety of purposes. The chemistry is complex and unusual, perhaps helping to explain some of the impressive physiological actions possessed by this plant. One of the many possible reasons for such incredible results and diversity of uses is Tamanu’s unique absorption properties. This enables the oil to reach all three layers of the skin: epidermis, dermis and hypodermis. Tamanu oil has been proved to have cicatrizizing, antibacterial, anti-neuralgic and anti-inflammatory properties. This combined with its unique absorption ability has resulted in Tamanu being used as a treatment for ailments ranging from scars, cuts, burns, rashes, stings, psoriasis, eczema and sores to rheumatism, neuralgia and sciatica.

Sun protecting substances are capable of protecting humans from harmful effects of solar radiation such as aging and skin cancers. Due to the depletion in ozone layer, research regarding to
sun protection has become a major concern. Since these preparations are often applied on large skin areas even low penetration rates can cause significant amount of chemical UV absorber to enter the body. Sun protecting preparations need to achieve a controlled release.

Liye Maeyama – Cognis Japan, Synergistic whitening complex with Waltheria indica extract and ferulic acid, Personal Care, November 2002

Melanins are black polymeric pigments that determine skin and hair color. An abnormal increase in the amount of melanin in the epidermis is the reason for hyperpigmentation such as freckles, melasma, etc. melanin is synthesized by specialized cells, the melanocytes, which are located in the basal layer of the epidermis. Stored in melanosomes (granules in the melanocytes), the melanins are distributed to keratinocytes surrounding the melanocytes.

Liye Maeyama, Whitening complex with waltheria indica extract and ferulic acid, Cosmetics & Toiletries, Vol. 117, No. 10, October 2002

Waltheria indica extract, ferulic acid and certain other ingredients act synergistically in a whitening complex that inhibits tyrosinase and provides mild exfoliation.


The authors describe a practical method of substantiating claims of “after-sun” products. Ten healthy women 35-65 years old were irradiated on both legs in a laboratory for six sequential days using an indoor solarium-type UV source. Efficacy assessment endpoints were defined from the product’s typical claims.

Astrid de Castro, Efectividad de cremas antienvejecimiento con activos naturales, GCI Latinoamerica, Vol. 1, No. 2, Mai-August 2002,

La autora describe un estudio con el uso de una crema que contiene una mezcla de filtros solares físicos, extractos vegetales, hidratantes, antirradicales libres, sustancias antiinflamatorias con el objetivo de comprobar la eficacia de materias primas de origen vegetal en el tratamiento y prevención del fotoenvejecimiento.


The protocol was composed of two steps: a bleaching step (2-6 weeks) and a healing step (2-6 weeks). 0.1-0.4% all-trans retinoic acid aqueous gel was originally prepared and applied concomitantly with hydroquinone, lactic acid ointment for bleaching. After obtaining sufficient improvement of the hyperpigmentation, corticosteroid was topically applied with hydroquinone and ascorbic acid in the healing step. Improvement was evaluated with a narrow-band reflectance spectrophotometer.

Astron Clinica, Validation experiments, www.fellows.rcsed.ac.uk/personal/marcmoncrieff/ch4.pdf,

This study represents the first clinical trial with the SIAscope, a system that produces information about the haemoglobin, total melanin, dermal melanin and collagen content of the epidermis and papillary dermis within the region of interest scanned. Studies have been performed that measured the theoretical accuracy of the system in determining these parameters (Cotton, 1998; Hojjatoleslami et al., 2000). It was decided that experiments should be undertaken that could determine whether the SIAscope was indeed measuring these parameters. The four sets of experiments determining each of the SIAscope parameters are described below in the style of a short paper.
Modulation of the rheological characteristics of sebum at the surface of the skin might represent a valuable strategy for the treatment of seborrhea. In this field, only a small number of studies have addressed sebum diffusion within the stratum corneum. In an open, split-face study conducted on 20 men, we measured the sebosuppressive effect of Effidrate cream which is based on a glycerol alkyl-ether. Measurements were made in the morning at three-week intervals for a total period of 3 months. Sebum casual levels and sebum excretion rates were measured using a SM810 Sebumeter.


Hermansky-Pudlak syndrome is an autosomal recessive disease characterized by pigment dilution and prolonged bleeding time.

Astrid Castro, Quantitative measurement of skin color changes with visual assessment correlation,

The findings confirmed the suitability of developed clinical trial protocol for skin whitening efficacy evaluation using the Mexameter MX 16 as a tool for the quantitative measurement of skin color changes. The procedure of standardization used in the study is simple and workable in a clinical setting. Factors of importance include the control of test site as well as environmental controls.

Astrid Castro de Castro, Evaluacion in vivo de despigmentantes de origen natural y/o biotecnologicos

Teniendo presente la alta incidencia de hiperpigmentaciones, y la necesidad de obtener un producto seguro, efectivo y sin reacciones adversas, nos propusimos evaluar in vivo la accion despigmentante de una sustancia obtenia por Biotecnologia mezclada con extractos naturales, que denominamos “N-M” contra otras ya conocidas de origen quimico y vegetal, que correspondian al Extracto de Glicirrhiza Glabra, Acido Kojico, Hidroquinona y Extracto de Fagus Sylvatica.


The objectives of the study were to explore the effects of using the water-soluble mucilage of Monostroma nitidium to replace the humectant and half of the thickening agent on the rheological properties, color, storage stability, water-holding capacity, and film formation time of moisture masks thus prepared. Results showed that moisture masks containing water-soluble mucilage were pseudoplastic fluids.

HK Lee, SY Ahn, JH Bae, SJ Moon, IS Chang, Comparisons of skin characteristics between men and women using non-invasive methods in young healthy Asians, Skin Research and Technology, Vol. 9, Nr. 2, May 2003, “Abstract Nr. P84“.

Objective: Skin has different properties depending on intrinsic effects such as inherent factors, race, gender, and so on. Besides, it has been known that skin may change because of the environmental stress such as UV, climate and life style.

It is very important aspect in skin color analysis that the objective evaluation of color distribution in same image. But conventional spectrophotometer are able to analysis as average value of region of interest (ROI) not to color distribution analysis. We tried to develop the new skin color analysis technique so as to objective measured skin color distribution as a pixel or ROI using liquid crystal tunable filter (LCTF) and CCD camera (so called Skin Color Distribution Analyser: SCDA).


La aparicion de la aestetica piel de naranja conjuntamente con la disminucion de la forma, sedosidad, y brillo de la piel de un cuerpo joven, afecta la imagen femenina de tal forma que hoy en dia, se ha transformado en un verdadero problema social y psicologico, padecerla es peor que tener algun mal que genere dolor.


Nowadays, vitamin E acetate is used as an antioxidant and moisturizer in sunscreens. Although free vitamin E presents UV protection effects, little data has been forthcoming documenting the beneficial effects of vitamin E acetate on cutaneous photodamage, when combined with sunscreens. The aim of this study was to evaluate the protective effect of a sunscreen formulation with or without vitamin E acetate on erythema in hairless mice, transepidermal water loss (TEWL) and sunburn cell formation.


La aparicion de la aestetica piel de naranja conjuntamente con la disminucion de la forma, sedosidad, y brillo de la piel de un cuerpo joven, afecta la imagen femenina de tal forma que hoy en dia, se ha transformado en un verdadero problema social y psicologico, padecerla es peor que tener algun mal que genere dolor.

A.E. Sagiv, Y. Marcus, **The connection between in vitro water uptake and in vivo skin moisturization**, Skin Research and technology 2003, 9, 306-311

Adding hydroxyl groups to a consecutive set of polyhydroxyalkanes increases the humectancy of the polyols in vitro. This elevation was found to be linear at low relative humidities (Relative humidity = 31.9% and 37°C). In vivo, moisture was returned to normal within a week in all three groups. However, only glycerol managed to abolish the erythema within 7 days.

J. Wiechers, S. Swaminathan, **The equaliser**, SPC Asia, Nov. 2003

In the quest to find the fountain of youth for skin, formulators of personal care products search for ingredients with the potential to change skin back to the way it was when we were young adults. Formulators have yet to find these magic ingredients but in their search they have devised skin-toning materials that go a long way towards biologically changing the skin.


One of the trends in modern dermatology and its perspectives for the near future are skin bioengineering and imaging. The 1st joint meeting of two scientific societies focusing on measurements and visualisation of skin function, structure and physiology – the International Society for Skin Imaging
(ISSI) – took place in Hamburg, May 21-24, 2003. Before that, the meetings and conferences organised by these societies had been held separately.


This CD-Rom contains a number of interesting articles about the usage of different, cosmetological applicants (like applying special, new designed facial colour products, special natural products etc.). The effect on skin is investigated, such as sebum or melanin.


It is known that, depending on the concentration, treatment with urea could improve skin barrier function, despite its penetration-enhancing properties. This controversial skin effect of urea has been explored systematically in this study in terms of the effect of the vehicle on the performance of urea. In the first part, a series of four semi-solid emulsions with 5% (w/w) urea, varying in the type of emulsion, nature of emulsifier and polarity of oil ingredients, have been evaluated with regard to their skin hydrating and transepidermal water loss (TEWL)-modifying properties.

**Kerstin Luise Gebhard, Evaluation und Standardisierung von Hauttestungen zur Diagnostik der irritativen Kontaktdermatitis;** Digitale Bibliothek der Universität Marburg, 2004


**C. Vincent, M. Szubert, I. Eris, The assessment of efficacy, tolerability and cosmetic features of Diosperin K 1% PROLONGATUM cream containing complex of diosmine, hesperidine and vitamin K, Poster Presentation Centre for Science and Research Dr. Irena Eris, 2005.**

Face redness and couperoses can cause very negative visual effect and influence on patients’ quality of life. Such type of skin requires special regime. Application of very gentle cleaners, sun protective products and appropriate cosmetic creams can improve the skin condition and minimize the red face effect.

**Paola Granata, Roberto Maffei Facino, Adriano Ghirardini, Enzo Berardesca, Grazia Primavera, Manuela Carrera, TYROSYL-HISTIDINE DlPEPTIDE: A NEW APPROACH AGAINST PREMATURE AGING**, Presentation at the ISCC in Florence 2005

Oxidative fragmentation of polyunsaturated fatty acids in the skin generates cytotoxic aldehydes, mainly 4-hydroxy-trans-2-nonenal (HNE), involved in premature skin aging and photo-aging, due to the formation of collagen and elastin cross-links, skin enzymes inactivation, accumulation of lipid peroxidation products. Since histidine-containing dipeptides have been recently shown to possess carbonyl quenching activity, we developed a series of different dipeptides with the aid of combi-
natorial chemistry and each of them was subjected to antioxidant and anti-carbonyl assays, in a cell- free model using the ORAC assay (Oxygen Reactive Antioxidant Capacity) for anti-lipoperoxidant ac-
tivity, HPLC analysis for the evaluation of the HNE quenching ability and LC-MS/MS for the character-
ization of the site and of the mechanism of adduction.

G Oberto, A Berghi, F Portolan, E Bauza, C Dal Farra, and N Domloge, Cotton Honeydew Oligosaccharides for Hair Care Cosmetics, Presentation at the ISCC in Florence 2005. *

Cotton honeydew extract is a unique composition of oligosaccharides, including fructose, glucose,
inositol, melezitose, saccharose, trehalose, and trehalulose.
The interaction of these oligosaccharides provides a stimulating effect on keratin synthesis, which allows for protection against nutrient deprivation and osmotic stress. Consequently, we were interested
in studying the effect of these oligosaccharides on human hair, using scanning electron microscopy.


To have a white, smooth skin appears to be the most desirable feature among women, espe-
cially those from Asian countries like China, Japan, Korea and Southeast Asia. As a result, a great
number of whitening products is available on the market. The active whitening ingredients in these
products range from conventional UV filters to highly sophisticated combination of various skin-
whitening agents.

Sonnen-Apotheke, Kötzing, Dermokosmetik, Beratung in der Apotheke, PTA Nr. 11, Oktober 2005.


Wellness and especially sauna bathing are of growing interest in modern health care. The positive effect of sauna for general health is well documented. However, to our knowledge no controlled studies have been published on the effect of sauna on skin physiology.

J.W. Fluhr, M. Breternitz, M. Flach, P. Elsner, Acute experimentally induced barrier disruption by tape stripping is influenced by pressure, time and anatomical location: Integrity and Cohesion assessed by sequential tape stripping, Presentation on the ISBS Meeting 2005 in Philadelphia, USA, abstract.

Tape stripping is a well-known procedure in stratum corneum physiology research. Adhesive
films are pressed to the surface of SC and then removed. The superficial layers of SC adhere on the
film and are accessible for further investigations. Although this method is widely used, only few
information about standardization are known.

R. Ismail, S. Ahmad, Sodium lactates in skin lightening formulations: its synergy with other skin lightening agents, Presentation on the IFSCC in Florence 2005.

In many Western countries, skin lighteners and related products sold in the market are aimed
to prevent and treat melasma, freckles and age spots. However in Asia, skin-lightening products are
primarily used to achieve the beauty ideal of a white and flawless skin, although they also treat prob-
lem areas.
Enzo Berardesca, Norma Cameli, Grazia Primavera, Manuela Carrera; 

Clinical and Instrumental Evaluation of Skin Improvement after Treatment with a New 50% Pyruvic Acid Peel; 

Dermatol Surg 2006

Pyruvic acid is an α-keto acid that presents keratolytic, antimicrobial, and sebostatic properties as well as the ability to stimulate new collagen production and elastic fibers formation. Because of its low pKa and its small dimension, it penetrates rapidly and deeply through the skin, so far as to be considered a potent chemical peel agent. It has proven its efficacy for the treatment of many dermatological conditions such as acne, superficial scarring, photodamage, and pigmented disorders. Pyruvic acid application usually induces intense burning, and the postpeeling period is characterized by erythema, desquamation, and, sometimes, crusting.

Wolfgang Geissel, Gesunde Haut durch gute Beratung, Igel Plus: Juni 2006, pp. 18-19.


D. Khazaka, Objective Measurement at all Stages of the treatment, 5th Asia Pacific Conference on Antiaging Medicine, Bali, September 2006.

The days are over when a dermatologist only looked at the skin to make a diagnosis and to decide about the following treatments and to recommend skin care products to use. For almost 20 years now there is scientific equipment available to measure different parameters on the skin, such as hydration and sebum level, pH, elasticity, pigmentation skin texture and wrinkles and many more.


Vitiligo, an acquired pigmentation disorder, is characterized by a loss of melanocytes and results in white skin patches. Nevus depigmentosus (ND) is frequently confused with vitiligo, and is defined as a congenital non-progressive hypopigmented lesion that is stable in terms of size and distribution throughout life (1).

Tracy Sherwood, Just Below the Surface, GCImagazine (Dec. 2006), pp. 34-35.

In order to substantiate claims, manufacturers and brands must prove that their products do what they claim with the safety of the consumer in mind. The Cosmetic, Toiletry and Fragrance Association (CTFA) recently introduced its new commitment code for cosmetic companies, promoting industry self-regulation regarding product safety.

Beurteilung von frühkindlichen Verbrennungen – Objektivität optimiert Therapie; aesthetic TRIBUNE, Ausgabe 8, Dezember 2006

Jean Luc Levy, Lise Agopian, Bernard Chadoutaud, Philippe Msika, **Effect of a new cosmetic formulation on reducing cutaneous pigmentation**, AB174 J AM ACAD DERMATOL

Intracellular signal transduction pathways regulating melanogenesis imply PKC, camp through the activation of PKA and NO. A new whitening formulation that targets these three different pathways, has been tested on melasma with image analysis and a particular interest on the quality of life (QoL) of the volunteers.

Hanh Pham, Pearl Grimes, Aruna Parikh, Brian Jones, **Efficacy of a skin lightening regimen to improve melasma**, AB170 J AM ACAD DERMATOL

Melasma is a common disorder of hyper-pigmentation. It is characterized by symmetrical brown-grey pigmentation affecting the cheeks, forehead, upper lips and chin. It impacts all women, although the disease is more commonly observed in darker racial ethnic groups. The condition is more common in areas with intense ultraviolet light exposure.

E. Berardesca, **Bioengineering as a Tool in Occupational Dermatology**, Dermatologie in Beruf und Umwelt, Jahrgang 55, Nr. 2/2007, p. 67

Bioengineering techniques have been proven to be helpful in monitoring changes in skin physiology and quantifying skin disease. Detection of subliminal or non visual changes is a challenge in order to predict potentially pathological conditions such as irritation or pre-clinical dermatitis.

M. Andreas, R. Bilenchi, G. Mariotti, M. Centini, L. Andreassi, C. Anselmi **Phytic Acid: a Novel Topically Active Antioxidant Suitable for Cosmetic Preparations**, 21st World Congress of Dermatology, Buenos Aires, Argentina

Many substances with antioxidant activity are present in the human skin, and their concentrations are generally higher in the epidermis than in the dermis. Under the effect of an oxidative stress, such as that caused by ultraviolet (UV) rays, these substances are strongly depleted, especially in the external epidermal layer.

B. Piot, J. De Rigal, C. Yarhi, D. Compan-Zaouati, M. Lefebvre, **The skin sebageous function: in Asian and Caucasian climate influences**, 21st World Congress of Dermatology, Buenos Aires, Argentina

Objective of the study: The first objective was to compare the sebaceous function in Asian and Caucasians, female, in real life conditions, using both instrumental measurement and visual evaluation by expert. A second objective was to investigate climate induced changes in the sebaceous function on a separate group of Japanese women, using the same methodology.

AV. Anstey, A. Carter, K. Wyness, M. Kalavala, C. Edwards, **A Study to Assess the Use of TL01 Dose Response Curves to Inform an Incremental Regimen for Narrow Band UVB Phototherapy in Psoriasis**, 21st World Congress of Dermatology, Buenos Aires, Argentina, 2007

Variation in narrow-band UVB (nbUVB) psoriasis treatment regimens between phototherapy units affects the starting dose, the dosage increments and the ceiling dose. In the UK it is now standard practice in most units to determine the minimal erythema dose (MED) on unaffected skin before phototherapy commences, which informs the starting dose selected for each patient. A dose-response curve for each patient can easily be constructed from the MED dose series without additional UVB irradiation.

CG. Sason, VM Verallo-Rowell, **The Efficacy and Safety of Illuminants Anti-Perspirant with Gi-gawhite Versus Vehicle for Axillary Hyperpigmentation: a Double Blind, Parallel Group, Randomized Clinical Trial**, 21st World Congress of Dermatology, Buenos Aires, Argentina, 2007

Axillary Hyperpigmentation is a significant cosmetic concern of people with skin of color, most especially those of women. The objective of this study was to determine the efficacy and safety of illu-
minants Anti-perspirant with Gigawhite in the treatment of axillary hyperpigmentation. This study utilized a double blind randomised parallel group design.


Background/Objective: Melasma is one of the major cosmetic concerns among Asians and Hispanics. Among management options, hydroquinone has gained wide application despite the increasing incidence of adverse effects associated with its use, even in preparations of lower potency. Iontophoresis, a modality for enhancing drug penetration, is considered safe, effective, non-invasive and in combination with whitening agents is purported as safer alternatives in treating melasma.


Intracellular signal transduction pathways regulating melanogenesis imply PKC, camp through the activation of PKA and NO. A new whitening formulation, that targets these three different pathways, have been tested on melasma, with image analysis and a particular interest on the Quality of Life (QoL) of the volunteers. The tested product was a cosmetic cream containing protein kinase C (PKC) and protein kinase A (PKA) inhibitors, vitamins E and C.


Study Purpose: The aim of this study is the Etidronic Acid use (EA). This active ingredient is a biphosphonate, the 1-Hydroxyethylidene-1, 1-di-phosphonic Acid. This active ingredient is well known in the medical field an its application in different treatments. EA is also listed as an ingredient of several cosmetic formulations such as soap bars and shampoos.

R. Yankova Skin Photoirritation and Provoked Pigmentation Rates Related to Topical Anti-Acne Agents, 21st World Congress of Dermatology, Buenos Aires, Argentina, 2007

To investigate the skin photoirritation and pigmentation due to anti-acne topical treatments we enrolled fifty volunteers in a study to evaluate the UV erythema after applying ten anti-acne formulations. 3%, 5% and 10% benzoyl peroxide gel. 0.01 %, 0.025% and 0.05% tretinoin cream, 3% tetracycline hydrochloride ointment, 1% clindamycin phosphate lotion, 1,2% zinc acetate dihydrate + 4% erythromycin lotion, and 20% azelaic acid cream.

Ulrike Eich; THERMISCHE VERLETZUNGEN IM KINDES- UND JUGENDALTER; Lübeck 06.06.2007

Einschränkungen führen[32]. Gut sichtbare Narben, insbesondere an Gesicht und Händen, können zudem auch psychosoziale Probleme im Leben der Kinder nach dem Unfall hervorrufen[51].


Ultraviolet (UV) irradiation affects the function and complection of the skin by inducing changes in physical properties through formation of erythema, proliferation of epithelial cells, DNA damage, activation or inactivation of various enzymes and proteins, and free radical formation. In this study, the authors intended to observe the overall course of changes in barrier function and reflectance of the skin induced by photodamage, and healing reaction in the course of time, and alteration of skin complexion


Emulsions are thermodynamic unstable systems defined as microscopic dispersions of liquid droplets contained within another liquid, with a diameter ranging from 0.5 to 100 um. Emulsions usually consist of mixtures of an aqueous phase with various oils or waxes.

**Evaluation of dark circles of the lower eyelid: comparison between reflectance meters and image processing and involvement of dermal thickness in appearance**

Skin and Research Technology Vol14, No.2 May 2008

Dark circles of the lower eyelid (DCLE) are areas of darkened skin that may indicate hyperpigmentation and /or stasis in the lower eyelids and may represent a beauty problem in severe
cases. Furthermore, a concave sunken eye area changes light reflection to create shadowing and accentuate dark circles (1).

**Efficacy evaluation and characterization of chitosan nano emulsions with Spirulina hydroglycolic extract;** del Pozo A1, Solans M1, Fernandez C1, Dolz M2, Corrias F3, Herráez M3; Ifscc Barcelona 2008

Nanoemulsions represent an interesting prospect for use as vehicles in the development of formulations to deliver active ingredients to the human body. Particularly, nanoemulsion formulations have been shown to be superior for transdermal and dermal delivery of hydrophilic and lipophilic compounds, compared to conventional vehicles, such as hydrogels and emulsions. Lecithins (phosphatidylcholines) have been used in several studies as surfactants for topical nanoemulsion vehicles. These surfactants are able to form nanoemulsions without cosurfactants. In this context, less surfactant is associated with lesser irritation.

**Bianca Sommer; Regenerationsergebnisse nach Nervenverletzungen an der oberen Extremität – Einflussfaktoren und die Optimierung klinischer Untersuchungsmethoden;** Aus der Klinik für Plastische Chirurgieder Universität zu Lübeck, Lübeck 2008


**New approach to a non-invasive visualization of whitening effects in UV-induced pigmentation using In vivo reflectance confocal microscopy;** GW Nam, EJ Kim, HK Lee, SM AHN, SH Kim, SJ Moon and IS Chang; Ifscc Barcelona 2008

Hyperpigmentation on face is a highly anxiety-producing symptom, especially for women from the aspect of beauty. Pigmentation of the skin is related to the amount of melanin that provides protection against UV radiation. In vivo reflectance confocal microscopy is a non-invasive imaging tool allowing visualization of the skin without tissue alteration, by placing a microscopy directly on the living skin.

**Bi-Functional Study of Ion Calcium in the Skin**

Silvia H.Pérez Damonte1, Claudia Liliana Selem, Claudia Groisman; Ifscc Barcelona 2008

The Calcium ion has an important function in the skin. Its gradient plays a role in regulating epidermal growth and differentiation in-vivo. In the intact epidermis, the extra cellular calcium content is low in both, malpighi and spinosum strata, but increases from the inner to the outer layer of the stratum granulosum [1]. Also, the calcium ion participates in the formation of the epidermal desmosomes, fibroblasts and keratinocytes, which provide the integrity and firmness of the skin [2]. All of these factors are important for the correct function of the epidermal barrier.

**Safety Assessment for Nickel in Cosmetics;** Silvia H Pérez Damonte; Ana Maria Martín; Marta Edit Daraio; Ifscc Barcelona 2008
Many environmental chemicals produce contact hypersensitivity or local inflammatory responses in the skin. Nickel released from metal objects is well known as a sensitizing agent in humans. Since the initial damage caused by nickel remains to be the leading cause of skin disorders such as allergic contact dermatitis worldwide, the aim of this study is to investigate if the content of nickel in cosmetics could produce such reactions.

Anti-acne activity of Thyme oil and its applications for cosmeceutical acne care: An innovative Anti-acne challenger; Ha Hyun Jo1, Chang Gyu Han1, Kwan Young Jeong1, Jang Su Kim1, Byeong Jun Park1, Ifsc Barcelona 2008

The skin disease which acne occurs in papule, pustule, cystoma and tube for teenagers and young generation. The origin of acne takes part in various factors. The main factors are 1) increased Sebum 2) cornification of sebaceous glands 3) Propionibacterium 4) inflammation.


Phospholipid systems show high morphological diversity as a function of its structure and composition [1]. This fact plays an important role in the applications of aggregates such as micelles, bincelles and vesicles, which are extendedly used in skin research [2]. Thus, investigations that help clarifying the relation of structural parameters with the effect of the phospholipid aggregates in the skin are needed. Liposomes and micelles have often been used for skin treatment [3-4], although their application is debated due to some aspects. Liposomes seem to be too large to penetrate into the narrow interlamellar spaces of stratum corneum (SC) lipids [5]. Concerning to the micelles, the usual presence of surfactant in their composition supposes a problem due to the well known irritating effect of these solubilising agents on the skin [6]. In this line, the use of bincelles (discoidal micelles constituted by phospholipids) for skin treatment may report advantages comparing to the use of liposomes and micelles: the size of bincelles is small enough for passing through the SC lipid lamellae and their composition consists exclusively of lipids.

del Pozo A¹, Solans M¹, Fernandez C¹, Dolz M², Corrias F³, Herráez M³, Diez-Sales O.; Efficacy evaluation and characterization of chitosan nanoemulsions with Spirulina hydro-glycolic extract; Ifsc Barcelona 2008 (Poster)

Nanoemulsions represent an interesting prospect for use as vehicles in the development of formulations to deliver active ingredients to the human body. Particularly, nanoemulsion formulations have been shown to be superior for transdermal and dermal delivery of hydrophilic and lipophilic compounds, compared to conventional vehicles, such as hydrogels and emulsions [1]. Lecithins (phosphatidylcholines) have been used in several studies as surfactants for topical nanoemulsion vehicles. These surfactants are able to form nanoemulsions without co-surfactants.

B. Sadr, S. Davoudi, A. Firooz, S. Keshavarz, M. Shohrati, M. Naghizadeh; FP0466 COMPARISON OF ERYTHEMA AND MELANIN LEVEL IN SULFUR MUSTARD INDUCED CHRONIC SKIN LESION WITH NORMAL SKIN; Abstract; EADV Paris 09/2008;

Background: Sulfur mustard gas is a chemical agent that has been used in many wars, especially in Iran-Iraq war. This chemical agent affects many organs including lungs, eyes and skin and causes numerous acute and chronic lesions including erythema and hyperpigmentation, respectively.

Objective: This study was conducted to evaluate erythema and melanin in subjects with a history of exposure to sulfur mustard.

C. Huh, M. Choi, S. Lee, S. Kim, Y. Park, B. Kim, H. Park, S. Choi, S. Youn, K. Park; FP0723 Low dose 1064nm Q-switched Nd:YAG laser for the treatment of melasma; Abstract; EADV Paris 09/2008;
Background: Melasma is a common acquired pigmentary disorder that is known for its recalcitrance to the conventional treatment. Although Q-switched Nd:YAG laser (QSNYL) is widely used for the treatment of melasma, little has been published regarding its effect.

Objectives: In this study, we would like to know the effect of low dose 1064nm QSNYL (MedLite C6, HOYA Conbio, CA) on the treatment of melasma objectively.


The comparison of scar evaluation over time requires measurement tools with acceptable intrarater reliability and the ability to discriminate skin characteristics of interest. The objective of this study was to evaluate the intrarater reliability and sensitivity and specificity of the Cutometer, the Mexameter and the DermaScan C relative to the modified Vancouver Scar Scale (mVSS) in patient-matched normal skin, normal scar (donor sites), and hypertrophic scar.

Bernadette nedelee, Jose A. Correa, Grazyna Rachelska, Alecis Armour, Leo LaSalle; Quantitative Measurement of Hypertrophic Scar: Intrarater Reliability and Concurrent Validity; Journal of Burn Care & Research May/June 2008

Research into the pathophysiology and treatment of hypertrophic scar (HSc) remains limited by the heterogeneity of scar and the imprecision with which its severity is measured. The objective of this study was to test the intrarater reliability and concurrent validity of the Cutometer measurement of elasticity, the Mexameter measurement of erythema and pigmentation, and total thickness measure of the DermaScan C relative to the modified Vancouver Scar Scale (mVSS) in patient-matched normal skin, normal scar, and HSc.

Diana Khazaka, Christiane Uhl; More than 2 decades of bioengineering for efficacy testing and product recommendation; Household and Personal Care TODAY, n1/2009

Due to high competition in the cosmetic and growing customer expectations, in the past two decades there has been a continuous development of new cosmetic products with more efficient ingredients covering new effects on the skin. Simultaneously to this, there was an increasing demand for new measuring techniques to substantiate the new product claims. The field of skin bioengineering has consequently been immensely enriched in the last years by inventing new physical and optical measurement methods for all kind of skin parameters.

Masaki Yamaguchi, Yusuke Tahare, Teruhiko Makino, Tadamichi Shimizu, Akira Date; Comparison of Cathepsin L activity in cheek and forearm stratum corneum in young female adults; Skin Research and Technology 2009K; 15; 370-375

Noninvasive determination of skin surface proteolytic activity may be useful for the diagnosis of human disease and the potential of skin. The cathepsin family is one of the metabolizing enzymes of the skin cell and it includes aspartic protease cathepsin D and cysteine proteases cathepsin B, H, and L. Cathepsin L is a lysosomal cysteine protease with a major role in intercellular protein catabolism.

Yuan-Hong Li, Yan Wu, Hua-chen Wie, Yuan-Yuan Xu, Li-Li Jia, Jing Chen, Xue-Song Yang, Guang-Hui Dong, Xing-Hua Gao, Hong-Duo Chen; Protective effects of green tea extracts on photoaging and photimmunosuppression; Skin Research and Technology 2009; 15; 338-345

It is well known that solar ultraviolet radiation (UVR) causes many detrimental events, e.g. sunburn, immuno-suppression, skin carcinogenesis as well as photoaging. Acute UVR results in epidermal thickening and expression of proliferation and differentiation markers, such as Ki-67 and cytokeratins (CK)-1, 6 (3, 4).
Melanin, the dark pigment in the skin, is produced in the basal layer of the epidermis by specialized cells, the melanocytes, and transported, following its complete formation, to the upper layers of the epidermis where it enters into skin cells (keratinocytes) to give them their typical colour. Ageing-associated accumulation of melanin in the upper layer of the skin is the main cause for pigmentation disorders, which is observed in Asian skin as uneven hyperpigmentation at younger ages.

W. Pratchyapruit; Grading of improvement and relapse in melasma of thai females after 8 weeks-treatment with a combined cream of hydroquinone, steroid and tretinoin; ISBS Barcelona, 2009

Melasma is a common skin problem in any races including Asians. It commonly occurs in Thai females, age 30-40 years and females outnumber males about 13:1. In addition to multiple etiologic factors, the environmental factor of Thailand as a tropical and sunny climate country constitutes a definite factor responsible for improvement and relapse of pigmentation after any treatments. At present, the topical treatment consisting of hydroquinone (HQ), steroid and tretinoin together with sunlight protection is a standard treatment for melasma.

Joachim Fluhr, Objektive Messmethoden bei dermatologischen Erkrankungen; 18th Congress of EADV Berlin, 2009

Der Kurs unter Leitung von Priv. Doz. Dr. Fluhr, Berlin, Prof. Jemec, Kopenhagen (Dänemark) und Prof. Berardesca, Rom (Italien) ist darauf ausgelegt, das Basisverständnis für biophysikalische Messungen der Haut zu vermitteln. Diese Messungen sollen dann für die quantitative Bewertung der Schwere und Verlaufs von spezifischen Hauterkrankungen herangezogen werden. Über die letzten drei Dekaden wurden multiple nicht-invasive Instrumente für die quantitative oder semi-quantitative Erfassung von hautphysiologischen Parametern entwickelt und validiert

Choi JS, Moom JH, Lee JY, Seo CÄH, Jun AY, Choi EH, Jang KU; Effect of Intradermal Injection of Placenta Hydrolysate to Postburn Hyperpigmented Skin; J Korean Burn Soc, Dec 2009; www.komci.org

The skin hyperpigmentation or hypermelanosis caused by burns results in social withdrawal due to cosmetic problem and depression as a psychiatric aspect. The treatment of the skin hyperpigmentation includes sunscreen, whitening material, skin massage, laser therapy and plastic surgery Placenta extract can be used to reduce and inactivate the synthesis of the important enzyme (tyrosinase) that compose melanin. This study was performed to estimate the effect of intradermal injection of placenta extract (placenta hydrolysate) for the postburn hyperpigmentation. Total 10 subjects who have postburn hypferpigmentation were selected. Two sites of skin area from each subject were randomly selected as possible as symmetrical body area, the one site was to be “Treated site” with placenta extract, the other site was untreated “control site”.

Kiefer, Sabine; Weibel, Michaela; Smits, Julian; Juch, Mathias; Tiedtke, Jane; Herbst,


To establish a pigmentation spot model on human skin and to assess whitening efficacy for whitening products by this established pigmentation spot model. Twenty subjects between 20 and 45 years old with skin phototype III or IV were selected. Three consecutive daily UV exposures were performed on buttocks of the subjects as follows: Day 1 = 1 minimal erythema dose (MED), Day 2 = 0,5 MED and Day 3 = 0,5 MED.
Exogenous causes, particularly chronic ultraviolet light exposure, are a common factor in pigment abnormalities such as melasma, solar lentigines (or age spots), freckling, mottled pigmentation, and ephelides. There are numerous internal and external stresses that affect human skin pigmentation. Exposure to certain drugs and chemicals as well as the existence of certain disease states can result in hyperpigmentation. Post-inflammatory pigmentation, another skin hyperpigmentation disorder, usually develops after resolution of inflammatory skin eruptions like acne, contact dermatitis or atopic dermatitis.

www.mani.at/pages/gesundheit/studie-zur_olivencreme.php

**Positiver Effekt der Mani Bio-Olivenölcreme**


The demands on whitening skin care products have shown tremendous growth in recent years, along with the expectation of its safety and efficacy. With the influence of back to nature trend, people prefer the products containing natural ingredients as they have perception that those kinds of products tend to be safe and compatible with their skin. As an answer for customer needs, Martha Tilaar Innovation Centre has conducted so many researches on potential plant extracts, which can deliver the whitening effect. Several aspects should be considered when utilizing botanical materials in cosmetic, such as, the quality of the plant materials, process, biological activity, and safety consideration.

**Regina Fearmonti, MD, Jennifer Bond, PhD, Detlev Erdmann, MD, PhD, and Howard Levinson, MD; A Review of Scar Scales and Scar Measuring Devices; Open Science Company, LLC, June 21, 2010**

**Objective:** Pathologic scarring affects millions of people worldwide. Quantitative and qualitative measurement modalities evaluate and monitor treatments. **Methods:** This article reviews the literature on available tools and existent assessment objectively characterize scar. **Results:** We describe the attributes and deficiencies of each tool and scale and critical. **Conclusion:** An optimal, universal scar scoring system is needed in order to better characterize, understand.

**The Clearing Line Skin without Dark spots and fine lines, naturally; Marzia de servi**

The Marzia de Servi Clearing Line is designed to target two skin concerns: dark spots resulting from an excessive production of melanin, and wrinkles. These aesthetic problems often appear simultaneously on the skin. Marzia de Servi has created a new cosmetic line that inhibits excessive melanin formation and leaves skin visibly brighter and evetonted. It also acts on fine lines, reducing them and smoothing skin appearance. All Marzia de Servi Clearing Line natural formulas products contain highly effective key ingredients, and respect skin’s delicate physiological balance.
marzia de servi The Clearing Line – Skin without Dark spots and fine lines, naturally

The Clearing Line Skin without Dark spots and fine lines, naturally The Marzia de Servi Clearing Line is designed to target two skin concerns: dark spots resulting from an excessive production of melanin, and wrinkles. These aesthetic problems often appear simultaneously on the skin. Marzia de Servi has created a new cosmetic line that inhibits excessive melanin formation and leaves skin visibly brighter and eventoned. It also acts on fine lines, reducing them and smoothing skin appearance. All Marzia de Servi Clearing Line natural formulas products contain highly effective key ingredients, and respect skin’s delicate physiological balance. Dark Spots Marzia de Servi Clearing Line targets dark spots often resulting from an excessive production of melanin in localized skin areas. Pigment-producing melanocytes cells start over-producing melanin resulting in localized unwanted dark spots. Clearing Line focuses on this type of problem by inhibiting melanin production. Hence the products can only be used on hyperpigmentation spots and are therefore absolutely non-effective on all other types of skin spots; i.e. spots resulting from microscopic skin lacerations, burns, surgery involving the use of an electric needle, etc.

Anna S. Ranti, Martha Tilaar, Wong Li Wih, Maily, Suryaningsih; Whitening agent derived from combination of plants; Personal Care September 2010, pp. 21-23

Whitening products have shown tremendous growth in recent years. This is especially true of tropical places like Indonesia where the local women strive to have a lighter skin complexion. There are many harsh whitening products in the market; however, consumers are now shifting towards the safer, naturally derived whitening agents. Several aspects should be considered when utilising plant materials in cosmetic, such as, the quality of the plant materials, process, its stability, biological activity, and safety consideration. The aim of this study is to look for a whitening agent from an Indonesian botanical resource. This paper will describe a stable natural complex ingredient (SWC now referred to as the new whitening agent) extracted with ethanol from several plants.

Nima Ostovari, Nelda Saadat, Soheila Nasiri, hamideh Moraweg, Parviz Toossi; The 308-nm excimer laser in the darkening of the white lines of striae alba

To evaluate the true efficacy of the 308-nm excimer laser for darkening striae alba using a modified approach. Methods: ten subjects were treated using the excimer laser on the white lines of striae, while the normal skin near to and between the lines was covered with zinc oxide cream. Assessment of efficacy was performed by colorimetric scores based on mexameter measurement and also digital photographs showing before – after laser therapy, which were compared by two independent dermatologists. The mexameter-based data analysis showed that the excimer laser was weakly effective in the repigmentation of the lines of striae.

Anthony C. Dweck; The role of natural ingredients in anti-ageing of the skin; Australian Society of Cosmetic Chemists

The skin ages for a number of reasons. It will naturally age with increasing loss of flexibility and ageing as collagen and elastin within the epidermis slowly cross-links and become less elastic. To a degree this is part of the genetic inheritance present within all of us, since do not seem to age at the same rate, nor share identical lifestyles. It has been extensively proven that sunlight hastens the degradation of the skin by the bombardment of tissue with high energy photons present in UV-A and UV-B wavelength of sunlight. This high energy has sufficient power to cleave molecules into free radicals, which are then available to react, modify and sometimes destroy healthy cellular chemistry.

Haejun Yim, Yong Suk Cho, Cheong Hoon Seo, Boungh Chul Lee, Jang Hyu Ko, Dohern Kim, Jun Hur, Wook Chun, Jong Hyun Kim; The use of AlloDerm on major burn patients: AlloDerm prevents post-burn joint contracture; BURNS, Vol. 36, Issue 3, pp. 322-328

A total of 64 patients received AlloDerm graft selectively on joint areas during the study period from March, 2005 to July, 2007. From January to March, 2008, a total of 31 patients returned to our
burn center to examine the functional results by measuring range of motion of joints. Additionally, the quality of grafted skin condition criteria of skin elasticity, scar thickness, trans-epidermal water loss, melanin and erythema level was measured in a total of 11 patients among them. By analyzing the limitation level of 55 joints excluding hand areas, we found that 24 joints (43.6%) showed no limitations, 12 joints (21.8%) showed limitations below 10%, 16 joints (29.1%) showed limitations between 10 and 19% and 3 joints (5.5%) showed limitations over 20%. The scar thickness of non-AlloDerm applied areas was 2.5 ± 0.9 mm and AlloDerm applied areas was 1.8 ± 0.7 mm (p = 0.396). Trans-epidermal water loss for non-AlloDerm applied areas was 20.9 ± 7.7 g/h/m² and AlloDerm applied areas was 10.8 ± 3.4 g/h/m² (p < 0.001). Erythema value for non-AlloDerm applied areas was 436.1 ± 65.8, whereas AlloDerm applied area was 394.4 ± 61.2 (p < 0.001). Acellular dermal matrix is a good option for treating major burns to prevent scar formation after burn and loss of joint function.

Choi, Mira; Choi, Jee-Woong; Lee, Sun-Young; Choi, Sun-Young; Park, Hye-Jin; Low-dose 1064-nm Q-switched Nd:YAG laser for the treatment of melasma; Volume 21 (4) Informa Healthcare – Jul 1, 2010

Abstract Background: Melasma is a common acquired pigmented disorder which is sometimes hard to treat with conventional methods. Various kinds of modalities have been applied for the treatment of melasma but none shows constantly good results. Objectives: In this study, we would like to know the effect of low-dose 1064-nm Q-switched Nd:YAG laser (QSNYL) on melasma and want to evaluate the changes of skin after laser treatment. Methods: Twenty melasma patients were enrolled. Two regions were evaluated from each patient; a total of 40 sites. The 1064-nm QSNYL at fluences of 2.0–3.5 J/cm² was used to treat the whole face, including the melasma lesions. The fluence was adjusted individually and increased until erythema was developed on the laser-treated area. The treatment was performed five times with a 1-week interval. Non-invasive measuring methods, including a chromatometer, mexameter, cutometer, visioscan and a corneometer, were used before and after treatment.

Norbert: A LIPOSOMAL ENCAPSULATED BLEND OF CITRUSFLAVONOIDS FOR SKIN LIGHTENING, IFSCC 2010 Buenos Aires, Argentina

Melanin, the substance responsible for the pigmentation of skin, is produced to protect the nucleus from harmful UV radiation and results in visible darkening of the skin. Freckles, age spots and melasmas are frequent undesired consequences of stimulated melanin production. Many cosmetic ingredients are used to lighten the skin, by inhibition of melanin production or stimulation of melanin decomposition. The use of flavonoids as cosmetic ingredients has long been known and is well established. The aim of this study was to find the ideal composition of flavonoids from various citrus fruit extracts for a skin lightening cosmetic ingredient. The subsequent liposomal encapsulation of the active ingredients enhances penetration of the active substances into deeper layers of the skin and produces a deposition effect due to film formation on the skin surface. Various citrus extracts were analyzed by HPLC-UV, with a C18 column (Uptisphere ODB) and isocratic elution mobile phase of 75% water, 10% methanol, 10% acetonitrile and 5% acetic acid.

Balogh, Tatiana S; Pedriali, Carla A; Gama, Robson M; Pinto, Claudinéia ASO; Bedin, Valcinir; Villa, Ricardo T; Kaneko, Telma M; Velasco, Maria VR; Baby, André R, STUDY OF SUNLESS TANNING FORMULATIONS USING SHED SNAKE SKIN AS ALTERNATIVE MEMBRANE MODEL, IFSSC 2010 Buenos Aires, Argentina

Sunless tanning formulations promote a secure and effective tan. The temporary pigmentation provided by these formulations resembles an UV-induced tan. The great majority of these formulations present dihydroxyacetone (DHA). This study evaluated the sunless tanning effect of carbomer gels and cold process self emulsifier base emulsions with different concentrations of a system constituted for DHA and N-acetyl tyrosine applied in the shed snake skin by Mexameter® MX 18. Eight sunless tanning formulations were developed, four gels and four emulsions (base, base plus 4.0, 5.0
and 6.0% w/w of a system constituted for DHA and N-acyetyl tyrosine). Artificial tanning was induced in the shed snake skins (2.0 x 3.0 cm) by the application of the 30 mg/cm² of each formulation. Mexameter® MX 18 was used to evaluate the shed snake skin tanning index, in the following intervals: \( T_0 \) (before the application) and after 24, 48, 72, 168, 192 and 216 hours. It was verified that shed snake skins are promising substratum for in vitro sunless tanning efficacy tests, due to their similarity to the human stratum corneum.

**Posternak, Maria E.1, 2, 3; Perez Damonte, Silvia H.** **INFLUENCE OF ISOPROPYL MYRISTATE IN THE ACTION OF EXTERNALLY APPLIED VITAMIN K ON THE SKIN PH AND ON THE COLOR OF ERYTHEMA IN SKINS WITH ROSACEA, IFSSC 2010 Buenos Aires, Argentina**

In this work, it was evaluated the influence of topical 5% vitamin K on the skin pH and on the color of erythema in patients with rosacea and the influence of replacing the mineral oil contained in the formulation with an enhancer of dermal penetration, isopropyl myristate, in 5% vitamin K creams on the skin pH and on the color of erythema. Four types of cream were prepared, all with pH 5 ± 0.1:

1) Base cream with mineral oil
2) Base cream with isopropyl myristate
3) 5% vitamin K cream with mineral oil
4) 5% vitamin K cream with isopropyl myristate. After 45 days of treatment, the statistical analysis of the measurements obtained with the MexameterR MX18 instrument shows that the two creams with 5% vitamin K reduce the color of erythema significantly. After 30 days of treatment, the cream with isopropyl myristate proved to be more effective than the cream with mineral oil as regards erythema treatment. Using the equipment Minolta ChromameterRCR-200, on the other hand, no significant reduction was observed in the color of erythema with neither of the creams with 5% vitamin K.

**TURNA I˙ LKNUR 1 , MEHTAP Ü NL Ü BI Ç AK 1 , PINAR EKER 1 , H Ü LY A ELL I˙ DOKUZ 2 & S¸ EBNEM Ö ZKAN 1 ; Effects of the 810-nm diode laser on hair and on the biophysical properties of skin; Journal of Cosmetic and Laser Therapy, 2010; 12: 269–275**

**Introduction**: Laser therapy is clinically effective in hair removal; however, despite the development of various strategies, laser procedures still present a risk of adverse effects due to the overheating of the skin. **Objective**: To investigate the effects of 810-nm diode laser treatment on hair and on the biophysical properties of skin by using various non-invasive techniques on various parameters, including hair analysis, surface color changes, integrity of skin barrier, sebum production rate and pH level. **Methods**: In this randomized, right–left comparison study, 35 women with axillary hair received single-session diode laser therapy. Hair analysis and biophysical properties of the skin were assessed before treatment and at weeks 2, 4 and 6 after the therapy. **Results**: Hair density and thicknesses statistically significantly decreased after the first post-treatment evaluation. Regarding comparison of the biophysical properties of the skin, there was no statistically significant change in the assessments, except for the increase determined during the second week in the erythema index in the laser-treated areas. **Conclusion**: The findings of this study showed that the diode laser can perform a significant reduction in the hair amount without significant epidermal damage, at least for a short period.

**G. Dell’Acqua*, K. Schweikert, G. Calloni; Stimulating and Protecting Skin Immunity to Decrease UV-Induced Skin Erythema; SOFW Journal 11-2010**

Skin is permanently exposed to stress from the external environment. In order to defend itself and to increase its repairing capacity, skin possesses molecules that are part of the innate immunity system. These molecules are expressed by the keratinocytes and also present on Langerhans cells. They are highly conserved through evolution and represent the first line of defense against foreign antigens and environmental stress. Although during the early response these molecules act locally, they may trigger eventually a more systemic immune response if the aggression can not be resolved rapidly. These molecules also called innate immunity markers can be considered, together with the Langerhans cells, the skin immune sentinels (1) making sure that a pro-inflammatory aggression is
detected and controlled (1-4). Among the skin immunity markers we can list anti-microbial peptides like cathelicidins and defensins that directly kill invasive microbes (5, 6); heme oxygenase 1 (HO-1), involved as an anti-oxidant and wound healing agent (7, 8); S100 proteins, with both anti-microbial (9) and skin barrier properties (10); and Toll like receptor-2 with signaling function (10) but also important in anti-microbial defense (11,12).

Benevenuto, Carolina G.; Di Matteo, Miguel A.S²; Maia Campos, Patrícia M.B.G; Gaspar, Lorena R., INFLUENCE OF THE PHOTOSTABILIZER IN THE PHOTOPROTECTIVE EFFECTS OF A FORMULATION CONTAINING UV-FILTERS AND VITAMIN A, IFSSC 2010 Buenos Aires, Argentina

Retinyl palmitate has been used in daily use moisturizing, antiageing and protective formulations since it acts on epithelization in dry and rough skin, as well as on keratinization considered being abnormal. However, some studies report that this substance shows some photoreactivity and can form photoproducts, which can lead to the impairment of safety and efficacy of cosmetic products containing this vitamin. Consequently, cosmetic formulators have been doing many efforts to stabilize formulations containing vitamin A derivatives and other photounstable substances such as searching for new UV-filters or using photostabilizers to increase their photostability and consequently their safety and effectiveness. Thus, the objective of this research was to evaluate the influence of different photostabilizers on the photoprotective effects of a cosmetic formulation containing UV-filters and a vitamin A derivative.


This paper focuses on the characterization of Sphagnum Magellanicum peat, its properties and the different uses in cosmetic products. Studies were conducted to analyze the organic, inorganic and microbiological content of this material. The results determined that it is an important source of poliphenols with antioxidant capacity. It has anti-inflammatory action and is safe in contact with skin. It has germicide properties. Humic substances have a large capacity to retain multivalent ions forming metalorganic complexes acting as a natural organic sequestrant. Because the intensity of UV light absorption it can be used in the formulation of coloured sunscreen emulsions and taking into account the other properties tested in the development of others cosmetic products. Considering the results obtained we found that Sphagnum Magellanicum peat has interesting properties for being used in the cosmetic industry coupled with the benefit of this raw material which has the important property of being natural and organic.

Sinerga Srl.; Tyrostan – Wasserlöslicher Bräunungbeschleuniger; Biesterfeld Spezialchemie GmbH, LifeScience –Cosmetic; Nr. 11-November 2010


Hydroquinone, which is extensively used in the treatment of hyperpigmentary disorders is associated with known side effects. Safer, natural depigmenting actives are therefore being explored.
A randomized, placebo controlled study in 50 human subjects, showed that the depigmenting effects of 0.25 percent tetrahydrocurcumin cream and 4 percent hydroquinone cream were comparable in a four week trial. No adverse reactions were noted from 0.25 percent tetrahydrocurcumin cream, while mild to moderate adverse effects were observed with 4 percent hydroquinone cream. 0.25 percent tetrahydrocurcumin cream is therefore an effective and safe alternative to 4 percent hydroquinone cream in depigmenting formulations.

Razvigor Darlenski, Theresa Callaghan, Joachim W. Fluhr; Antiaging and Antiwrinkle Products; J.W. Fluhr (ed.), Practical Aspects of Cosmetic Testing; Springer-Verlag Berlin Heidelberg 2011

The chronological (intrinsic) and extrinsic aging demonstrate typical macroscopic, histological and functional characteristics. The relative improvement in different parameters characterizing aging skin can be used in efficacy proof of antiaging and antiwrinkle cosmetic products. Different approaches to investigate the efficacy of antiaging products exist such as clinical evaluation and objective assessment with non-invasive methods and invasive procedures. A multiparametric approach is useful in the assessment of antiaging products efficacy. There is no uniform consensus on the protocol and the design of studies aiming efficacy proof of antiaging cosmetics.


Quantification of disease severity is a prerequisite for the development of evidence-based therapy. Today, there is no international consensus on guidelines for assessment of skin colour, and the majority of assessment methods are not standardized. Today, patient history and clinical scoring are the main tools for dermatologists when when attempting to assess the morbidity of patients with various skin diseases. These methods however have their limitations; as they frequently show poor inter- and intra-observer reproducibility, due to the different ways doctors assess, for example, erythema or dry skin. In addition many of the scoring systems include assessment of disease extent, which has been shown to be difficult.

Yan Tian, Y.X. Wang, W. J. Gu, P. Zhang, Y. Sun, Y.E.and W. Liu; Physical measurement and evaluation of skin color changes under normal condition and postultraviolet radiation: a comparison study of Chromameter CM 2500d and Maxmeter MX18; Skin Research and Technology 2011, 17: pp. 304-308

Skin color, erythema and melanin are the words that are usually used by dermatologists to describe skin lesions or to record the changes of skin lesions. However, individual observation of skin color by naked eyes is considered more complex and subjective. As subjective color expression seems impossible to give a correct description, some objective measurements are needed. The limitations of visual observations may be overcome by instrumental measurements, such as Chromameter CM2500d recommended by CIE (Commission International de l'Eclairage) and reflectance spectrophotometers (e.g. Maxmeter MX18) specialized in erythema and pigmentation measurements. These two kinds of instrument are commonly used by professionals in dermatology and cosmetic surgery fields in recent years.

Giorgio Dell'Acqua, Christian Wagner, Lightening and Illuminating Skin With Acetylated Hydroxystilbenes from Rheum rhaponticum; Cosmetics & Toiletries, Vol, 126, No.9 / September 2011, pp. 634-642

Increased melanin pigmentation is a physiological mechanism that the skin adopts to protect itself from the damaging effect of sustained and prolonged UV light exposure. Melanin pigment, produced by melanocyte cells in the basal layers of the epidermis, is transferred to the keratinocytes in the epidermis and sits on the top of the keratinocyte’s nucleus to protect the cell’s DNA. However, in some conditions (i.e., inflammation or a hormonal imbalance) and with increasing age, the
deposition of melanin in the epidermis increases. This is particularly evident in extreme cases such as melasma, where patchy melanin formation on skin is observed.

P. Kleesz, R. Darlenski, J.W. Fluhr; Full-Body Skin Mapping for Six Biophysical Parameters: Baseline Values at 16 Anatomical Sites in 125 Human Subjects; Skin Pharmacol Physiol 2012; 25; pp. 25-33

The skin, as the outermost organ, protects against exogenous hazards (outside-in barrier) and prevents the loss of essential parts of the body (inside-out barrier). The epidermal barrier exerts several functions with specific morphological elements. Regional differences in skin functions are well known. The aim of the present study was to assess and compare skin physiological parameters in vivo at 16 anatomical sites: Barrier function in terms of transepidermal water loss (TEWL), stratum corneum (SC) hydration (assessed by capacitance), skin surface pH, skin surface temperature, erythema index and skin pigmentation were quantified at 16 anatomical sites under basal conditions.

Tiffany Oliphant, Robert A. Harper; Advantages of jojoba esters in nonwovens; Personal Care, February 2012, pp. 94 – 96

Jojoba (Simmondsia chinensis) is a perennial shrub most commonly found in Arizona, California, and Northwestern Mexico. Jojoba seed oil, the oil produced by this plant, is a wax ester that has been used in the past as a folk remedy for renal colic, sunburn, chaffed skin, hair loss, headache, wounds, sore throats, prosiosis, and acne (e.g., sulphurised jojoba). The ester is composed of long-chain linear fatty alcohols, 20 to 24 carbons in length and long-chain linear fatty acids, 18 to 22 carbons in length. Nearly all of the acid and alcohol moieties are 9-mono-unsaturated. Hydrolysis of this wax ester produces a very unique ingredient that can be used in various commercial cosmetic and personal care formulations such as creams, body washes, hand sanitisers, and multiple nonwoven wipe applications.


α-lipoic acid or the reduced form dihydrolipoate are potent scavengers of hydroxyl radicals, superoxide radicals, peroxyl radicals, singlet oxygen and nitric oxide with anti-inflammatory properties. Previously, we have demonstrated in vivo the effect of α-lipoic acid (0.5%) and ascorbic palmitate (0.2%) in the improvement of he skin barrier and diminished the redness is a sensitive skin. The aims of this study were to analyze the clinical efficacy of formulations containing α-lipoic at 2.5% and 5.0% by measuring in vivo the biochemical parameters of transepidermal water loss (TEWL) and the color oft he skin initially and after the application.

Neti Waranuch, S Maphanta, W Wisuitiprot; Effect of microparticles containing green tea extract on facial skin improvement, ISBS Copenhagen 2012

To clinically evaluate an effectiveness of skin cream containing green tea extract loaded chitosan microparticles for facial wrinkle treatment. Method: Twenty-nine volunteers were randomly assigned to apply skin cream containing 1% green tea extract loaded chitosan microparticles (GT-Cs) and a placebo cream on each of their half faces for 8 weeks. Skin elasticity was evaluated by using Cutometer and the photographs of each half faces were also compared. Skin moisture and skin irritation were determined by Corneometer and transepidermal water loss (TEWL) respectively.

Christiane Uhl, Diana Khazaka, C+K electronic GmbH; Techniques for globally approved skin testing; Personal Care April 2013

In efficacy testing and claim support for cosmetic products, objective measurement systems became indispensable long ago, especially since subjective clinical assessments are often prone to bias and inter-observer variation. Without suitable instrumentation it is close to impossible to determine what a product is really doing for the skin. Those objective measurement methods and
subjective evaluations are mutually dependent. No measurement can be performed without the subjective evaluation of the results by the user of such instrumentation. However, a pure subjective evaluation of the skin without appropriate measurement techniques is not able to achieve accurate results either. This relationship becomes clearer when looking for example at skin colour measurements. Subjectively, the human brain cannot process slight changes in colour, especially when the colours are not viewed side by side, but at different points in time. Instrumental measurement however will clearly detect such slight changes. The achieved result must then be interpreted in context with the expected outcome or the hypothesis. For this, you will always need a knowledgeable and experienced person because ‘a fool with a tool is still a fool’, as the late Albert Kligman used to say. This relationship between objective measurement and subjective evaluation is not only true for the determination of differences in skin colour, but also for all other skin measurement parameters important for the cosmetic industry.

A. Thibodeau, PhD – Innovas Corp. US; Luminescence increased by plant-derived lipophilic active; Personal Care März 2013

Skin ageing is commonly revealed by the appearance of wrinkles and loss of tone. Those cutaneous signs of ageing are predominantly caused by an excessive exposure to UV radiations – actinic ageing – and thus more apparent on skin sites exposed to the sun. In addition to an obvious change in surface topography, skin ageing in UV-exposed skin areas is also betrayed by the appearance of age spots that are characterised by a localised hyperpigmentation. It is important to mention that, even though they are associated to ageing by connotative definition, age spots are more related to the effect of UV radiation rather than the chronological ageing itself – intrinsic ageing.

L. Marini, G. Crisman, V. Trashlieva, A. Krunic, P. Polizos, A. De Faveri; Using photobiomodulation to treat premature ageing; Prime March 2013

Abstract: Background and objective: Facial skin shows signs of ageing earlier than other anatomical areas. Predominantly non-thermal infrared A (IR-A) light emitting diode (LED) photobiomodulation has proven effective in triggering intracellular photobiochemical reactions leading to new collagen synthesis and reduction of matrix metalloproteinase-1 (MMP-1). The objective of this study was to assess the effectiveness, safety, and tolerability of a sequentially combined, continuous (CW) 835 ± 5 nm and pulsed emission (PW) 875 ± 5 nm LED facial mask array in the treatment of facial premature ageing.

www.floratech.com; Reduced erythema with Floraesters 20, Floraesters 30, and Floraesters 60; In-Cosmetics, Paris 2013

A lotion containing 2% Floraesters 20, 2% Floraesters 30, or 2% Floraesters 60 decreased erythema (redness) better than the vehicle lotion at 24 hours. Baseline (pre-shave) Mexameter measurements were taken on normal forearms. The forearms were then dry shaved followed by 30 minute post-shave Mexameter measurements. The test articles were then applied to each test site (2.5mg/cm²). Measurements were repeated 4 and 24 hours post test article application. An additional test article application was made following the 4 hour measurements.

www.floratech.com; Reduced erythema with Floraesters K-100 jojoba and Floraesters K-20W jojoba/Nonwoven wipes; In-Cosmetics, Paris 2013

A baby wipe containing 0.2% Floraesters K-100 jojoba or 1% Floraesters K-20W Jojoba decreased erythema (redness) better than the vehicle baby wipe and better than the baby wipe containing 0.5% of the known anti-irritant bisabolol. Baseline (pre-shave, pre test article treatment) Mexameter (erythema) measurements were taken on normal forearms. The forearms were then dry shaved followed by post-shave (30 minutes post-shave, pre test article treatment) measurements.
J.W. Jung, Y.W. Lee, Y.B. Choe, K.J. Ahn, **An 8-week face-split study to evaluate the efficacy of cosmeceuticals using non-invasive bioengineering devices**; Skin Research and Technology 2013; 19; 324-329

Background/aims: Even with the increasing demand for functional cosmeceuticals in the recent years, objective standard criteria for assessing their efficacy are currently incomplete at best. In this 8-week face-split study, in which we topically applied high-priced cosmeceuticals on one side and more affordable cosmeceuticals on the other side of face, we compared the efficacy of these two products using non-invasive bioengineering technology. Methods: We assessed the efficacy of a skin-whitening and an anti-wrinkle cosmeceutical product on 25 and 19 healthy female volunteers, respectively. In a single blind split setting, each participant received an 8-week topical application of high-priced cosmeceuticals to the left side of face, and cheaper cosmeceuticals to the right side. Then, the subjects' biophysical parameters were measured for an objective evaluation of the results. This was followed by a questionnaire to obtain a subjective assessment.

C. Galzote, R. Estanisla, M.O. Suero, A. Khait, M.I. Mangubat, R. Moideen, H. Tagami, X. Wang; **Characterization of facial skin of various Asian populations through visual and non-invasive instrumental evaluations: influence of age and skincare habits**; Skin Research and Technology 2013;19; 454-465

Background/purpose: We aimed to evaluate the impact of age and skincare habits on facila skin of different Asian ethnicities by comparing skin properties and skincare habits among various Asian populations of varying age groups. Methods: We evaluated approximately 100 female subjects each from a total of eight Asian cities in China, Indian, South Korea, Japan and the Philippines grouped according to age ranging from 14 to 75 years during a summer season. Facial skin was characterized using dermatological examinations of the cheek. Information regarding personal skincare habits was collected using a questionnaire.

X. Li, C. Galzote, X. Yan, L. Li, X. Wang; **Characterization of Chinese body skin through in vivo instrument assessments, visual evaluations, and questionnaire: influences of body area, inter-generation, season, sex, and skin care habits**; Skin Research and Technology 2014; 20: 14-22

Background/Purpose: The varying influence of mutiple factors (e.g., aging, sex, season, skin care habits) on skin structure and function necessitates study within ethnic groups to fully characterize their skin. Methods: Men and women aged 40-50 years (n=43) and their consanguineous same sex children, aged 18-25 years (n=43), living in Chengdu, China were enrolled in this single center, non-interventional study. Volunteers attended two study visits (summer, 2010 and winter, 2011) at which dermatologists measured transepidermal water loss (TEWL), skin hydration, sebum secretion, fine lines/roughness, melanin/erythema, temperature, and color, and clinically graded participants' skin.

N. André, E. Doridot, O. Peschard, P. Criton, O. Gracioso, P. Mondon; **The benefits of TCM**; SPC April 2014

Traditional Chinese Medicine (TCM) is more than just medicine. It combines complementary treatments such as acupuncture, phytotherapy, massage and, less well known, moxibustion and cupping. In his book Tao Te Jing, Confucius’ contemporary Lao-Tseu revealed TCM’s basic philosophy of promoting health and prosperity through understanding and adhering to tao. Tao represents the absolute principle underlying the universe. It emphasises the existence of two equivalent but opposing forces, yin and yang, between which a natural energy, ‘qi’, flows.

S. Shin, E. Jung, D. Park; **“Afzelin” A Novel Skin Protective Phytochemical against UV radiation**; IFSCC 2014 Paris

Introduction: Ultraviolet (UV) radiation induces DNA damage, oxidative stress, and inflammatory processes in human keratinocytes, resulting in skin inflammation, photoaging, and photocarcinogenesis. Adequate protection of skin against the harmful effects of UV irradiation is essential. Natural
substances from plant source have been considered as potential sunscreen resources because of their ultraviolet ray absorption in the UV region and their anti-inflammatory and antioxidant activity. Afzelin (Afz) is one of the major flavonol glycoside derivative which has been reported to have anti-inflammatory, and anti-cancer activities [1]. However, it has rarely been applied in skin care. This study aimed to explore the roles of afzelin in protection against UV-induced damage in in vitro conditions, ex vivo epidermal equivalent model and in vivo clinical trial. Results showed that afzelin has UV-absorbing property with no phototoxicity and attenuate UV-induced damage to skin.