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Proceedings | *Resumos*

IV National Conference on Dermatocosmetic Sciences

IV Congresso Nacional de Ciências Dermatocosméticas

March | *Março* **15/03/2013**
Lisboa – Universidade Lusófona

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Programm / Programa

Open Session | *Sessão de abertura*

Magnífico Reitor da Universidade Lusófona, Mário Moutinho
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1st Session | *Sessão 1*
Cosmetics and Society | *Cosméticos e Sociedade*

Moderator / Moderador- **Ligia Reis**,
Impact of the new regulation for Cosmetics | *Impacto da entrada em vigor do novo Regulamento de Cosmético***s – Ana Maria Couras**,
The industry "in Portuguese" | *Cosmética em Português* **– Rui Vilas Boas**
Education for Health | *Educação para a Saúde* **– Leonor Girão**
Effect of antioxidants in sunscreens| *Fotoestabilidade de filtros solares: estudo do efeito de antioxidantes* **– Sara Afonso**

keynote lecture | *Conferência Magistral*
Photoaging, skin cancers and sunscreens: what's Hot and what's Not? – Toni Ionescu

2nd Session | *Sessão 2*
State of the Art I | *O estado da arte I*

Moderator | Moderador- **Joachim Fluhr**
Preparations containing dermocosmetic geomaterials from the island of São Miguel | Preparações dermocosméticas contendo geomateriais da Ilha de São Miguel - Arquipélago dos Açores **– Marilene Estanqueiro**
The possibility of applicability of the extracts of the Ginja in the wellness of the human skin | *Estudo do potencial de aplicabilidade dos extractos de Ginja na promoção da saúde e bem-estar cutâneos* **– Elisabete Mauricio**
Topical formulations: from concept to market | Formulações tópicas: do conceito ao mercado **– Sara Raposo,** FFUL

3rd Session | *Sessão 3*
State of the Art II | *O Estado da Arte II*

Moderator | *Moderador*- **Isabel Almeida**,
Cutaneous impact of dietary consumption of water | *Impacto cutâneo do consumo dietário de água* **– Lidia Palma**
Cosmetics in aesthetics recovery | *Papel da Cosmética na recuperação estética* **– Vitor Figueiredo**
Novel scientific approaches to the discovery of new actives – Liliana Vilas
Technology and innovation/ safety in cosmetics development | *A tecnologia dos cosméticos: desenvolvimento e inovação/ segurança* **– Joana Marto**, FFUL

keynote lecture | *Conferência Magistral*
What's new with the epidermal barrier? – Joachim Fluhr

Open Session

From Left to Right | *Da direita para a esquerda*:
Ema Paulino (Ordem dos Farmacêuticos),
L. Monteiro Rodrigues (SPCC President and Conference President),
Mário Moutinho (Rector of Lusofona University),
Conceição Soeiro (Lusofona University Administration Board Member)
Ana Maria Couras (President of the Portuguese Cosmetic Industrials Association)

1st Session | Sessão 1
Cosmetics and Society | *Cosméticos e Sociedade*

Moderator / *Moderador*

Ligia Reis

Résumé / *Curriculo Resumido*

Em Junho de 1988 obtém a Licenciatura em Ciências Farmacêuticas – Ramo de Farmácia de Oficina e Hospitalar na Faculdade de Farmácia da Universidade Clássica de Lisboa e integra os quadros técnicos da Associação Nacional das Farmácias exercendo a função de Delegada Farmacêutica. Em 1990, passa a exercer a função de Adjunta do Secretário Técnico e de Chefe de Sector a Formação Contínua, entre 1995 e Setembro de 2005.

A partir de Setembro de 2005 assume a Coordenação Técnica do Serviço iSaúde (Informação Saúde) no Centro de Informação e Documentação de Medicamentos – CEDIME – da Associação Nacional das Farmácias e as funções de Gestora de Informação de Medicamentos.

Em Novembro de 2010 conclui o Grau de Mestre em Saúde e Desenvolvimento no Instituto de Medicina Tropical da Universidade Nova de Lisboa, com a tese intitulada "O conhecimento do medicamento e a literacia em saúde: um estudo em adultos, utentes de farmácias do conselho de Lisboa".

Entre 2010 e 2013 exerceu as funções de Secretária Geral na Ordem dos Farmacêuticos.

É autora de inúmeros artigos, posters científicos e comunicações orais em Congressos nacionais e internacionais.

C.01 - Impact of the new regulation for Cosmetics
Impacto da entrada em vigor do novo Regulamento de Cosméticos

Speaker / *Prelector*

Ana Maria Couras

Résumé / *Curriculo Resumido*

Ana Maria Proença Fonseca Couras nasceu em Lisboa em 1959. Licenciou-se em Engenharia de Produção Industrial – ramo de Engenharia Química pela Universidade Nova de Lisboa – Faculdade de Ciências e Tecnologia.

Desde 1994: Directora Geral da FIOVDE – Federação Portuguesa das Indústrias de Óleos Vegetais, Derivados e Equiparados. Nesta Federação estão filiadas 4 associações, das quais por inerência do Cargo que desempenha na FIOVDE é também Secretária Geral. Essas Associações são:

- Associação dos Industriais de Cosmética, Perfumaria e Higiene Corporal (AIC)
- Associação dos Industriais de Sabões Detergentes e Produtos de Conservaçã Limpeza (AISDPCL)
- Associação Portuguesa de Óleos e Gorduras Vegetais, Margarinas e Derivados (APOGOM)
- Associação Portuguesa de Aerossóis

1993 – 1994:Secretária Geral da Associação dos Industriais de Sabões, Detergentes e Produtos de Conservação e Limpeza (AISDPCL)

Desde 1997: Presidente da Direcção da Associação dos Industriais de Cosméticos, Perfumaria e Higiene Corporal (AIC)

Desde 1998: Membro da CAGERE – Comissão de Acompanhamento da Gestão de Embalagens e Resíduos de Embalagens, representando os sectores não-alimentares da CIP.

Abstract / *Resumo da Comunicação*

A legislação dos cosméticos em vigor há trinta anos na UE é reconhecida como uma forma eficaz para o enquadramento destes produtos, garantindo a harmonização das disposições legais no que respeita os elevados princípios de segurança desejáveis a estes produtos.

As alterações introduzidas pelo Regulamento 1223/2009 são uma evolução lógica da Directiva 76/768/CEE, no sentido de uma melhoria efectiva de harmonização no espaço europeu, de clarificação de requisitos e de actualização de acordo com o progresso técnico e científico.

Das alterações introduzidas destacam-se pelo impacto que podem ter para o sector:

- A clarificando das obrigações e responsabilidades dos fabricantes, dos importadores e dos distribuidores.
- A identificação do circuito comercial.
- O reconhecimento das normas harmonizadas aplicáveis em termos de boas práticas de fabrico.
- O estabelecimento dos requisitos e formato do relatório de avaliação de segurança de produto.
- A notificação centralizada de produtos cosméticos, para as autoridades competentes nacionais e para os centros anti-venenos.
- Os requisitos aplicáveis aos produtos que contenham nanomateriais, incluindo os novos requisitos de rotulagem.
- A determinação de critérios relativos a alegações publicitárias.
- A comunicação de efeitos indesejáveis graves.
- O estabelecimento das regras harmonizadas relativas à fiscalização do mercado e cooperação administrativa.

1st Session | Sessão 1
Cosmetics and Society | *Cosméticos e Sociedade*

C.02 - The industry "in Portuguese"
Cosmética «em Português»

Speaker / *Prelector*

Rui Vilas Boas

Résumé / *Curriculo Resumido*

Experiência Profissional
· Administrador Edol
· Diretor de Marketing/Comercial- Edol Produtos Farmacêuticos, S.A
· Gestor de Produto- Edol Produtos Farmacêuticos, S.A
· Chefe De Visita Médica/Divisão- Oftalder Produtos Farmacêuticos, S.A
· Area Manager- Yamanouchi
· Supervisor Vendas- Gist-Brocades
· Delegado de Informação Médica- Gist-Brocades
· Delegado de Informação Médica- Laboratório Roussel (Diamant)

Formação Académica
·Frequência de economia – Instituto Português de Economia (ISE)
·Pós Graduação Marketing Farmacêutico - ISCTE

Formação Complementar
·Frequência de diversos cursos de pós-graduação na área da gestão, Ttcnicas de vendas, gestão de recursos humanos, comunicação e marketing.

Abstract / *Resumo da Comunicação*

- Alguns dados internacionais – mercado cosmética
- O mercado Farmacêutico Português
- A aposta nos cosméticos
- Dados mercado em Portugal
- Canais distribuição
- Influenciadores
- Principais companhias
- O caso ATL /Edol

C.03 - Education for Health
Educação para a Saúde

Speaker / *Prelector*

Leonor Girão

Résumé / *Curriculo Resumido*

Licenciada em Medicina pela Faculdade de Medicina de Lisboa e especialista em Dermatologia e Venereologia desde 2000. Desde 2006, exerce actividade médica nos serviços públicos e privados na área da Dermatologia Geral, Pediátrica, Dermocosmética e Dermatologia Cirúrgica
Tem mais de 65 comunicações/posters em Congressos nacionais e internacionais e várias participações em acções de formação ministradas a médicos de Clínica Geral, Pediatras, Enfermeiros e Farmacêuticos.
Publicação de 10 artigos em Revistas Médicas Portuguesas e 9 em Revistas Médicas Internacionais
OUTRAS QUALIFICAÇÕES:
1995/2004 – Participação e orientação das equipas médicas no Instituto Nacional de Emergência Médica no Centro de Orientação de Doentes Urgentes, Lisboa
2003/2006 – Consultora Médica na área de Dermatologia na Novartis Farma, Lisboa
2004/2006 – Consultora e Responsável Clínica na área de Dermatologia na

Abstract / *Resumo da Comunicação*

Com a entrada no século XXI deparamo-nos com alguns fatos importantes na área da Saúde: a melhoria dos cuidados médicos prestados, o maior acesso a medicamentos inovadores, o aumento da esperança média de vida, particularmente no mundo ocidental, com reflexo no envelhecimento generalizado das populações. Mas viver mais não é sinónimo de viver melhor e a melhoria da "quantidade" de vida a ser usufruída nem sempre vem associada a melhoria da sua qualidade.
Daí que a promoção para a saúde seja um dos fatores fulcrais a desenvolver pelos diferentes intervenientes na área da Saúde. E esse tem sido um dos principais objectivos da Associação Portuguesa do Cancro Cutâneo (APCC), associação sem fins lucrativos que celebra este ano os seus 26 anos de existência na Prevenção do Cancro da Pele.
A associação tem dedicado a sua atividade primordialmente a duas áreas: prevencão primária e prevenção secundária do Cancro de Pele.
Na prevenção primária tem sido feito uma divulgação abrangente dos sinais e sintomas do cancro cutâneo assim como as medidas essenciais a uma fotoproteção eficaz, divulgadas por toda a sociedade civil (escolas, jardins de infância, associações de bombeiros, centros de saúde,praias, televisão, jornais, revistas, cartazes de exterior, panfletos, CDs informativos).
Na prevenção secundária tem sido responsável pela implementação em Portugal do dia do Euromelanoma, no qual é feito um rastreio médico do cancro de pele nos diferentes Hospitais públicos do país.
A APCC tem também promovido nos últimos 10 anos reuniões de Fotoeducação quer no Porto quer em Lisboa dirigidas a todos os profissionais de saúde e educadores, com o objectivo de esclarecer, ensinar e transmitir conhecimentos dentro desta temática, ajudando a modificar comportamentos, a promover uma exposição solar responsável e conseguir inverter a tendência para o aumento de mortes por cancro cutâneo.
Porque é sempre melhor prevenir e educar do que remediar e tratar.
Educação para a saúde precisa-se!

1st Session | Sessão 1
Cosmetics and Society | *Cosméticos e Sociedade*

keynote lecture | *Conferência Magistral*

C.04 - Effect of antioxidants in sunscreens
Fotoestabilidade de filtros solares: estudo do efeito de antioxidantes

Speaker / *Prelector*

Sara Afonso

Résumé / *Curriculo Resumido*

Aluna do 5º ano do Mestrado Integrado em Ciências Farmacêuticas na Faculdade de Farmácia da Universidade do Porto (2008-2013)
Projeto de investigação "Filtros solares: Fotodegradação e Estabilização" (Março de 2011-Setembro de 2012)
Participação no IJUP'12- 5º Encontro de Jovens Investigadores da Universidade do Porto- na reitoria da Universidade do Porto com a comunicação oral "Sunscreens: Photodegradation and stabilization"
Participação no IJUP'13- 6º Encontro de Jovens Investigadores da Universidade do Porto- na reitoria da Universidade do Porto com o poster "Jellyfish Pelagia noctiluca Forsskal: more than a threat"

Abstract / *Resumo da Comunicação*

Atualmente, é necessário desenvolver filtros solares cada vez mais eficazes para assegurar uma fotoproteção adequada. Alguns filtros são fotoinstáveis, o que reduz a sua capacidade fotoprotetora e pode conduzir a reações de fotossensibilização. O objetivo deste estudo consistiu em avaliar a fotodegradação do filtro UVA 4-terc-butil-4'-metoxidibenzoilmetano (avobenzona) após a exposição à radiação UV e também aumentar a sua estabilidade utilizando antioxidantes tais como a vitamina C, a vitamina E e a ubiquinona.
Numa fase preliminar, foram preparadas soluções de avobenzona (5 µg/mL) em dimetilsulfóxido (DMSO) juntamente com os antioxidantes em diferentes concentrações. Posteriormente foram preparados protetores solares contendo o filtro (4 %) e os antioxidantes nas concentrações que revelaram maior eficácia. Tanto as soluções como as formulações foram irradiadas a 750 W/m2 durante 1 hora no Atlas Suntest CPS+. Para medir o decréscimo de absorvância da avobenzona na região UVA foram traçados espetros antes e 2 horas após a irradiação e foram calculadas as respetivas áreas. A partir destes valores calculou-se o efeito fotoestabilizante. No caso das formulações fotoprotetoras foi também calculado o fator de proteção solar (FPS).
Os resultados mostraram numa primeira fase que as concentrações de 10 µg/mL de vitamina E, de 2,5

C.05 - Photoaging, skin cancers and sunscreens: what's Hot and what's Not?
Fotoenvelhecimento, câncer de pele e protetores solares

Speaker / *Prelector*

Toni Ionescu

Résumé / *Curriculo Resumido*

Dermatologist. Polyclinic of Dermatology and research unit INSERM U. 728. Saint-Louis Hospital, Paris, France
Dermatology Board Certification - University Paris 5 (1995). Doctorate (PhD) - University Paris 7 (2003). Diploma Lasers in Dermatology – Poitiers and Versailles Universities (2009)
Publications (first author) in: Journal of American Academy of Dermatology, Archives of Dermatology, Journal of Immunology, Annales de dermatologie, Acta Dermatovenerologica, Eur J Acne, Oral diseases.
Communications at: American Academy of Dermatology annual meetings (2004, 2005, 2006, 2008, 2009, 2012), Chili (RADLA 2006), Croatia (Italo-Croatian Psoriasis Day 2008), European Academy of Dermatology and Venerology annual meetings (1997, 2004, 2005, 2006, 2008, 2009), Egypt (2004, 2008), France (Journées de Dermatologie de Paris 2000, 2002, 2004, 2008, 2010), Greece (pan- Hellenic congress 2003), Italy (SIDAPA 2005, 2008, 2010; Acne Day Milano 2010), India (Dermacon 2007), Japan (Japanese Dermatology Association annual meetings 2003, 2004, 2006), Jordan (Jordan Derma 2003), Malaysia (7th pan-Asian Congress 2005), Mexico (2000, Pediatric Dermatology World Congress 2001, RADLA 2009), Russia (2005, 2006), Singapore (Asian Society for Pigment Cell Research 2006), South Africa (Egoli 2000, 2001, 2008), Taiwan (2001), Ukraine (2006, 2008, 2010), Venezuela (2001), World Congress of Dermatology (Paris 2002, Buenos Aires 2007).
Member of: French Society of Dermatology, American Academy of Dermatology, European Society for Photodermatology, Laser Group of French Society of Dermatology.
Investigator / participant to clinical trials for: PsoBioTeq, Abbott®, Pfizer®, Janssen®.
Scientific Board - Laboratoires Dermatologiques d'Uriage®, France.

Abstract / *Resumo da Comunicação*

Biological effects of the solar radiation are well known and described as short-term effects (immediate pigmentation or « Meirowsky reaction », the vitamin D synthesis, the solar erythema, the delayed pigmentation or « tanning »), and long-term effects (photoaging, immunosuppression and photocarcinogenesis). Sunscreens' correct use is an important part of the « global » approach of the prevention against photoaging together with: ultraviolet (UV) protection by clothes, an adapted behavior (avoid intentional sunbaths), and "early" protection against UV (children education, organize shaded playgrounds). Sunscreens' composition was dramatically improved during last decades, from the sixties' formulas based on mineral screens and providing "kabuki-like" look (very white and with thick textures), to UV filters with more transparent textures and an important improvement in their stability to UV and their water resistance. In the lasts years were published many controversies on sunscreens based on mineral micronized particles ("nanoparticles") and on the allergic potential of some chemical UV filters as octocrylene.
The amount of sunscreen applied on the skin is another key element of sunscreen use different in laboratory (2 mg/cm2 of skin) compared to real amount applied by consumers (around 0.8 mg/cm2). This is decreasing dramatically the real protection against UV negative effects.
Learning objectives: at the end of this lecture the participants should be able to:
1. understand the mechanism of action of sunscreens (mineral and chemical);
2. correctly prescribe/advice an adapted UV protection (taking in account that the outdoor SPF is considerably lower that laboratory tested SPF).
3. avoid the prescription of sunscreens at risk (mineral nanoparticles and chemical filters with high allergy risk).

2nd Session | Sessão 2
State of the Art I | *O estado da arte I*

Moderator / *Moderador*

Joachim Fluhr

Résumé / *Curriculo Resumido*

Priv.-Doz Dr. Joachim W. Fluhr studied medicine in Mainz and Strasburg. He received his residency training in dermatology in Karlsruhe. He worked as a research fellow in Pavia, San Francisco and Rome before joining the Department of Dermatology in Jena. Before joining the Department of Dermatology at the Charité - Universitätsmedizin Berlin he worked in industry as medical director for a CRO.
His research interest is focused on non-invasive techniques for assessing skin physiology, characterization of diseased skin, spectroscopic analysis of skin physiology and penetration pathways of topically applied substances. He is the President of the "International Society of Skin Pharmacology and Physiology".

C.06 - Preparations containing dermocosmetic geomaterials from the island of São Miguel

Preparações dermocosméticas contendo geomateriais da Ilha de São Miguel - Arquipélago dos Açores

Speaker / *Prelector*

Marilene Estanqueiro

Résumé / *Curriculo Resumido*

2011 – Mestre em Ciências Farmacêuticas pela Faculdade de Farmácia da Universidade do Porto
2009 – Licenciatura em Estudos Básicos de Ciências Farmacêuticas pela Faculdade de Farmácia, Universidade do Porto

Atividade actual:
Professor Assistente Convidado do Laboratório de Tecnologia Farmacêutica, Departamento das Ciências do Medicamento, Faculdade de Farmácia da Universidade do Porto. Docente de aulas práticas laboratoriais das disciplinas Tecnologia Farmacêutica II, Tecnologia Farmacêutica III e Tecnologia Farmacêutica IV (ano lectivo 2012/2013).

Interesses:
Desenvolvimento e caracterização tecnológica de formulações dermocosméticas. Avaliação da eficácia e segurança de produtos cosméticos por técnicas de biometria cutânea.
Produção científica:
Autora e co-autora de dois artigos científicos, quatro comunicações em poster e três comunicações orais, em congressos/reuniões nacionais e internacionais.

Abstract / *Resumo da Comunicação*

Desde há muitos anos que a pedra-pomes, rocha de origem vulcânica, é utilizada sem qualquer tipo de tratamento para remover calosidades e a pele endurecida dos pés, deixando a pele suave e sedosa.
No presente trabalho, desenvolveram-se formulações com propriedades esfoliantes, quer sob a forma de gel, quer sob a forma de sabonetes, contendo pedra-pomes previamente pulverizada, proveniente da Ilha de São Miguel. Tendo em vista a aplicação em diferentes zonas anatómicas foram utilizadas diferentes granulometrias, nomeadamente, 125-250 µm e 250-500 µm, para possível utilização na face e no corpo, respectivamente. Para estudar a estabilidade e as características físicas e químicas das preparações procedeu-se ao estudo da textura, reologia e avaliação do pH. Para verificar a eficácia esfoliante das preparações desenvolvidas e o seu efeito nos parâmetros biométricos procedeu-se à avaliação da hidratação, pH, conteúdo lipídico e relevo cutâneo, antes e após a utilização de ambas as formas de apresentação. De um modo geral, as formulações esfoliantes apresentaram boa estabilidade ao longo do tempo, sendo que os geles apresentaram melhores características para aplicação cosmética, assim como maior eficácia esfoliante.
Uma vez que a pedra-pomes é extremamente rica em dióxido de silício e através de análises de termografia constatou-se que um gel contendo 5% (m/m) de pedra-pomes de granulometria <63 µm provocou um alívio duradouro da inflamação do joelho. Na sequência destes resultados procedeu-se ao desenvolvimento de formulações para aplicação cutânea em situações de eritema cutâneo, como por exemplo, após a exposição solar.

2nd Session | Sessão 2
State of the Art I | *O estado da arte I*

C.07 - The possibility of applicability of the extracts of the Ginja in the wellness of the human skin
Estudo do potencial de aplicabilidade dos extractos de Ginja na promoção da saúde e bem-estar cutâneos

Speaker / *Prelector*

Elisabete Mauricio

Résumé / *Curriculo Resumido*

É Directora Técnica da empresa produtora de dermocosméticos Elisa Câmara, Lda, e responsável e pelo Departamento de Desenvolvimento e Investigação da mesma empresa.
Professora auxiliar convidada na Universidade Lusófona na área da biologia celular e microbiologia desde 1996.
Desde 1995- Desenvolvimento de formulações no ramo da dermocosmética para empresas nacionais e Internacionais.
Consultora reconhecida pelo Infarmed para a Avaliação da Segurança Toxicológica para a Saúde Humana de produtos Cosméticos e de Higiene Corporal.
Doutoranda em Biomedicina em Alcalá Henares em associação com o CBIOS e a Unidade de dermatologia experimental da Universidade Lusófona.
Licenciada (1993) e Mestre (2003) na Universidade Nova de Lisboa em Tecnologia / Faculdade de Ciências e Tecnologia na Àrea da Engenharia e Tecnologia Alimentar/Química.
Pós-graduada em análises químico -biológicas Universidade Nova de Lisboa (1995).
2006-2007- Curso de Pós-graduação em Ciências dermatológicas, Departamento de Ciências da Saúde da Universidade Lusófona, Grupo de Ciências Farmacêuticas da Universidade Lusófona.
2012 – Curso de Fundamentos de cultura celular. Programa de actualização/Formação avançada. Faculdade de Ciências e tecnologias da Saude da Universidade Lusofona de Humanidades e Tecnologias.

Abstract / *Resumo da Comunicação*

Nos últimos anos, muitos estudos têm sido efectuados relativamente ao poder antioxidante e anti-inflamatório de alguns frutos vermelhos atribuindo-lhes características únicas de protecção contra os radicais livres, prevenindo o envelhecimento prematuro e prometendo maior longevidade e juventude. A Ginja de Óbidos (Prunus cerasus L., Rosaceae), fruto autóctone da região de Alcobaça e Óbidos possui características únicas sendo chamada frequentemente de "folha no pé" por apresentar uma diferença ao nível do comprimento dos pedúnculos dos frutos, e apresentar folhagens junto aos pedúnculos. São destas Ginjas que surge o famoso licor "ginjinha de Óbidos", de sabor único produzido industrialmente em diversas unidades industriais desta região. Contudo, na produção do licor são gerados sub-produtos como as folhagens, pedúnculos e as películas e caroços resultantes da operação da prensagem do fruto que não são valorizados. Pretende-se apresentar nesta comunicação os principais métodos aplicados no estudo da valorização e transformação destes sub-produtos em extractos com propriedades biológicas para aplicabilidade em produtos dermocosméticos. Serão apresentados os principais resultados referentes a sua capacidade antioxidante, antimicrobiana e segurança, com o objectivo de seleccionar os melhores extractos tendo em conta a sua aplicabilidade Industrial e a obtenção da certificação de extractos biológicos. Este estudo pretende apresentar um produto inovador, de baixo custo, com características únicas para o desenvolvimento de uma linha de dermocosmética portuguesa.

C.08 - Topical formulations: from concept to market
Formulações tópicas: do conceito ao mercado

Speaker / *Prelector*

Sara Raposo

Résumé / *Curriculo Resumido*

Mestre Integrada em Ciências Farmacêuticas pela Faculdade de Farmácia da Universidade de Lisboa em 2008.
Frequentou, em 2009 o programa europeu intensivo em skin barrier fuction na Universidade Claude Bernard em Lyon, França. Em 2012, frequentou com aproveitamento o curso Pós-graduado em "Safety assessment of cosmetics in the EU" na Vrije Universiteit Brussels, Bélgica, bem como, o Programa Ecaterina Merica Cosmetic Education: Formulation strategies for skin disequilibrium and troubled skin and Sensory strategy in cosmetic formulation, Universidade Lusófona, Lisboa.
Entre 2008-2009 foi técnica especialista do departamento de Investigação e desenvolvimento do Laboratório Edol e actualmente está a desenvolver a sua tese para obtenção do grau de doutor (último ano) no Research Institute for Medicines and Pharmaceutical Sciences" (iMed.UL) no departamento Nano Drug Delivey System, da Faculdade de Farmácia da Universidade de Lisboa, na área de Tecnologia farmacêutica, no Desenvolvimento e optimização de novos veículos para aplicação tópica de corticóides. Colaborou na docência nas aulas laboratoriais de Tecnologia farmacêutica no ano lectivo de 2009 do Mestrado Integrado em Ciências Farmacêuticas da FFUL e é Professora assistente de Farmácia Galénica desde 2011 na ERISA. É co-inventora do pedido de patente Português nº105982. É autora e co-autora de vários artigos científicos publicados em revistas nacionais e internacionais. É autora e co-autora de mais de 20 trabalhos apresentados em conferências nacionais e internacionais sob a forma de comunicação oral e painel. Foi oradora convidada de dois cursos pós graduados na área da dermofarmácia e segurança de cosméticos na FFUL e Ordem dos Farmacêuticos do Porto. Foi avaliadora convidada do I International Symposium on Cosmetology, Brasil.

Abstract / *Resumo da Comunicação*

Considering the increase on the complexity and competitive markets it is mandatory the development of new alternatives pharmaceutical forms.
The subject of this work is the development of fluid emulsions decreasing the production costs and, at least with the same efficacy of the commercial emulsions intended for corticoids delivery though the skin.
The emphasis of the experimental work relied on the development of emulsions containing safe ingredients and with suitable characteristics for cold process emulsification. Secondly the final emulsions were characterized in terms of structure and a full stability study was conducted. The efficacy and safety of the emulsions were accessed in vitro and in vivo.

3rd Session | Sessão 3
State of the Art II | *O estado da arte II*

Moderator / *Moderador*

Isabel Almeida

Résumé / *Curriculo Resumido*

Licenciada em Ciências Farmacêuticas pela Faculdade de Farmácia da Universidade do Porto. Mestre em Tecnologia Farmacêutica, área de farmacotecnia e Doutorada em Tecnologia Farmacêutica pela mesma instituição de ensino. Professora Auxiliar no Laboratório de Tecnologia Farmacêutica, Departamento de Ciências do Medicamento da Faculdade de Farmácia da Universidade do Porto desde Julho de 2009. Desenvolve atividades de investigação na área da formulação de preparações de aplicação cutânea e avaliação da sua qualidade, segurança e eficácia, e caracterização da bioatividade de ingredientes cosméticos. Orienta trabalhos de investigação do 2º e 3º ciclo de estudos. É autora ou coautora de diversas publicações em revistas científicas na área farmacêutica e cosmética. Membro da Sociedade Portuguesa de Ciências Cosmetológicas.

C.09 - Cutaneous impact of dietary consumption of water
Impacto cutâneo do consumo dietário de água

Speaker / *Prelector*

Lidia Palma

Résumé / *Curriculo Resumido*

Licenciada em Ciências Farmacêuticas pela Faculdade de Farmácia da Universidade Lisboa.
Doutoranda em Biomedicina na Universidade de Alcalá Henares.
Pos-graduação em Ciências Dermato-Cosméticas, Universidade Lusófona de Humanidades e
Tecnologias, Lisboa.
Pós-graduação em Farmacoterapia de Não Prescrição – Faculdade de Farmácia da Universidade de Lisboa.
Directora do Curso de Farmácia da ERISA.
Directora do Curso de Bacharelato de Informação Médica e Farmacêutica, do ISHT.
Membro da Sociedade Portuguesa de Ciências Cosmetológicas.
Membro Sociedade Portuguesa de Fitoquímica e Fitoterapia
Responsável de Formação e Desenvolvimento pessoal na Roche Farmacêutica e Química.
Responsável de marketing na Roche Farmacêutica e Química.
Responsável de marketing nos Produtos Sandoz Lda.

Abstract / *Resumo da Comunicação*

Há muito que vem sendo sugerido que o aumento da ingestão de água beneficia as funções e aparência da pele. Considerando o aporte total de água ingerida (bebida e da dieta) e produzida pelo metabolismo, podemos avaliar a importância que a variação do aporte de água tem sobre a fisiologia da pele, reconhecida que é a sua importância na dinâmica celular. No presente trabalho de investigação fomos avaliar em grupos saudáveis com diferentes consumos de água total o impacto de 2L/dia de água, na hidratação e nas propriedades biomecânicas da pele in vivo.
Os resultados mostraram um impacto positivo no aumento da hidratação cutânea tanto superficial como profunda sobretudo nos indivíduos que, por hábito, consomem menor quantidade de água por dia, o que demonstra benefícios semelhantes aos obtidos em estudos anteriores em pele seca. Não foi observado impacto significativo na TEWL, confirmando dados de estudos anteriores. Os resultados obtidos nas variáveis biomecânicas indicam uma relação positiva com a hidratação cutânea, embora com menor expressão.

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State of the Art II | *O estado da arte II*

C.10 - Cosmetics in aesthetics recovery
Papel da Cosmética na recuperação estética

Speaker / *Prelector*

Vitor Figueiredo

Résumé / *Curriculo Resumido*

Nasceu em 1974 e licenciou-se em Medicina na Faculdade de Medicina da Universidade de Coimbra. Desde sempre que esteve interessado na Medicina Estética, área em que trabalha desde 1999.
A sua formação foi feita em vários países, sendo de salientar o Master Universitário em Medicina Anti-Aging pela Universidade de Sevilha – Espanha - o Master Universitário Internacional de Medicina Estética e Anti-Aging pela União Internacional de Medicina Estética (UIME), o Master Pan-americano de Medicina Estética, o Certificado Internacional em Medicina Anti-Aging pela Anti-Aging Medicine International Society e o Curso Nacional de Medicina Estética pela Sociedade Argentina de Medicina Estética. É o primeiro médido português a ser diplomado pela UIME.
Actualmente dedica-se apenas à medicina «privada», na Clínica Milénio, em Lisboa, sob direcção do Dr. Ângelo Rebelo, onde é responsável pela Unidade de Medicina Estética.
As principais técnicas com que trabalha são: toxina botulínica (Botox®), peelings (incluindo full-face profundos de fenol), fillers, bioestimulação, aplicação de plasma rico em plaquetas e fatores de crescimento (para rejuvenescimento e reparação de tecidos), lipofilling (enxerto de gordura), mesoterapia, lipólise, laser, mesoglow e mesoplastia, radiofrequência (ablativa e não ablativa), carboxiterapia, microdermoabrasão,

Abstract / *Resumo da Comunicação*

Desde sempre que a prática da estética médica está intimamente ligada ao cosmético, entendido, nesta área, como uma substância que, quando colocada em contacto com a epiderme, de alguma forma «modifica» o seu aspecto.
É uma certeza que a utilização de cosméticos em cirurgia e medicina estética permite alcançar melhores resultados. O cosmético pode ser utilizado de forma isolada (como o tratamento em si) ou então na preparação ou complementação de um determinado tratamento médico específico.
È acima de tudo na área não cirúrgica que o cosmético encontra o seu principal campo de atuação. A grande maioria dos procedimentos invasivos como peelings (superficiais a profundos), lasers e despigmentantes carecem sempre de um período de preparação cosmética adequada da pele e de um outro de consolidação, após a sua execução. Em alguns tratamentos minimamente invasivos, como a mesoplastia, os «preenchimentos» ou bioestimulação, o cosmético como que permite ativar os «produtos» infiltrados na pele.
No âmbito cirúrgico, os processos cicatriciais são mais simples se houverem bons cuidados cosméticos, designadamente no que diz respeito à aceleração da cicatrização, ao restabelecimento dos tecidos após a intervenção e á prevenção de complicações.
Relativamente ao seu uso per si recorre-se ao cosmético para controlar casos ligeiros de acne, melasma, rugas superficiais e elastose solar.
Há cada vez mais moléculas que vêm sendo conhecidas e compreendidas e que se juntam ao vasto número das já existentes de forma que hoje é possível utilizar dezenas e dezenas de substâncias. A tendência actual é, pois, para a existência uma autêntica cosmética «personalizada» de forma que para cada situação clínica se utilize exactamente o mais apropriado, de forma individualizada.

C.11 - Novel scientific approaches to the discovery of new actives
Abordagens científicas na descoberta de novos activos cosméticos

Speaker / *Prelector*

Liliana Vilas

Résumé / *Curriculo Resumido*

Liliana Vilas é Licenciada em Química pela Universidade do Minho, é responsável pela unidade de negócio de Life sciences em Portugal na Zeus Química Lda. Trabalha na área das matérias-primas para os mercados de cosmética, farmácia, alimentar e dietética desde 2000. A Zeus Química, Lda representa a Lipotec no mercado Português desde 2006.
Além disso, é responsável pela Qualidade, Ambiente e Segurança Alimentar na mesma empresa desde 2003. Possui pós-graduação em Engenharia da Qualidade pelo IEP – Instituto Electrotécnico Português.

Abstract / *Resumo da Comunicação*

Os activos cosméticos são ingredientes fundamentais na fórmula de um creme. Conferem actividade biológica que se traduz numa acção cosmética, desta forma, suportam as alegações de eficácia do produto final. A ciência de descoberta dos ingredientes activos cosméticos envolveu, nos últimos anos, o empréstimo de metodologias de alta tecnologia tais como péptidos e química combinatória, modelagem molecular assistida por computador (CAMM) ou biotecnologia. O uso destas tecnologias permite a descoberta de potentes ingredientes com mecanismos biológicos de acção bem definidos e composição química conhecida ou de produção sustentada.
A Lipotec é uma empresa especializada na descoberta e comercialização de ingredientes activos cosméticos. Esta apresentação irá focar diferentes abordagens científicas empregadas pela Lipotec para a descoberta de novos ingredientes activos cosméticos. Vai ser apresentada a técnica de química combinatória, exemplificado pela descoberta do AdifylineTM, é um péptido que estimula a diferenciação dos adipócitos e o crescimento do volume do tecido adipócito. De uma forma similar, a modelagem molecular assistida por computador será revista através da descoberta do Inyline®, um péptido que combate as rugas de expressão. Finalmente, Hyadisine TM, um exopolissacárido Hyaluronic-like de origem marinha, será apresentado como exemplo de produção de activos cosméticos através da biotecnologia.

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keynote lecture | *Conferência Magistral*

C.12 - echnology and innovation / safety in cosmetics development
A tecnologia dos cosméticos: desenvolvimento e inovação / segurança

Speaker / *Prelector*

Joana Marto

Résumé / *Curriculo Resumido*

Mestre Integrada em Ciências Farmacêuticas pela Faculdade de Farmácia da Universidade de Lisboa em 2010.
Actualmente, aluna de Doutoramento do Research Institute for Medicines and Pharmaceutical Sciences" (iMed.UL) no departamento Nano Drug Delivey System, da Faculdade de Farmácia da Universidade de Lisboa, na área de Tecnologia farmacêutica, no Desenvolvimento e optimização de novos veículos para aplicação tópica. Colaborou na docência da Unidade Curricular Optativa de Dermofarmácia e Cosmética, do Mestrado Integrado em Ciências Farmacêuticas. Frequentou, em 2012, o curso Pós-graduado em "Safety assessment of cosmetics in the EU" na Vrije Universiteit Brussels, Bélgica, bem como, o Programa Ecaterina Merica Cosmetic Education: Formulation strategies for skin disequilibrium and troubled skin and Sensory strategy in cosmetic formulation, Universidade Lusófona, Lisboa.
É co-autora de vários artigos científicos publicados em revistas nacionais e internacionais. É autora de mais de 20 trabalhos apresentados em conferências nacionais e internacionais sob a forma de comunicação oral e painel. Foi oradora convidada do curso pós graduado na área de segurança de cosméticos na FFUL
Avaliadora convidada do I International Symposium on Cosmetology, Brasil.

Abstract / *Resumo da Comunicação*

A indústria cosmética tem investido fortemente na pesquisa e no desenvolvimento de novos produtos, para melhor atender as exigências do consumidor, sendo um factor importante para se manter no mercado, visto tratar-se de um sector dinâmico que exige inovação contínua e investimentos constantes no desenvolvimento de novos produtos. Os requisitos de sucesso para um produto cosmético prendem-se com um processo ágil e inovador de desenvolvimento, assegurando simultaneamente óptimas propriedades de estabilidade, eficácia e segurança. Nos últimos anos tem aumentado o interesse pela introdução de novas tecnologias, desde a nanotecnologia (nanomateriais, nanoemulsões, lipossomas, emulsões estabilizadas por partículas sólidas), assim como, a inclusão de novos excipientes em produtos cosméticos. De facto, a introdução de inovação confere aos cosméticos propriedades únicas e enriquecedoras na produção de um produto cosmético. Como consequência, novos desafios surgem em virtude destas características, que exigem desafios no sentido de garantir a segurança dos produtos e do consumidor. A segurança do produto não pode ser apenas avaliada no final do seu ciclo, mas cabe ao formulador durante o desenvolvimento ter em consideração os requisitos legais (Regulamento CE nº 1223/2009 e as Guidelines publicadas). No entanto, a aparência apelativa do produto final para o consumidor e os efeitos reeinvidicados são também fundamentais para o sucesso do desenvolvimento de produtos cosméticos.

C.13 - What's new with the epidermal barrier?
Últimas descobertas na pesquisa da função de barreira cutânea

Speaker / *Prelector*

Joachim Fluhr

Résumé / *Curriculo Resumido*

Priv.-Doz Dr. Joachim W. Fluhr studied medicine in Mainz and Strasburg. He received his residency training in dermatology in Karlsruhe. He worked as a research fellow in Pavia, San Francisco and Rome before joining the Department of Dermatology in Jena. Before joining the Department of Dermatology at the Charité - Universitätsmedizin Berlin he worked in industry as medical director for a CRO.
His research interest is focused on non-invasive techniques for assessing skin physiology, characterization of diseased skin, spectroscopic analysis of skin physiology and penetration pathways of topically applied substances. He is the President of the "International Society of Skin Pharmacology and Physiology".

Abstract / *Resumo da Comunicação*

The epidermis is the outermost part of the human body representing the interface to the potentially harmful environment and exogenous stressors like chemicals, UV radiation other physical impacts. The epidermal barrier has been recognized as a key player in skin diseases such as atopic dermatitis and in cosmetical approaches. The bases of an impaired barrier and dry skin (e.g. in atopic dermatitis) have been elucidated on the molecular level.
As an external organ skin can be assessed with non-invasive biophysical instruments. Molecular mechanisms and their modulation are classically studied in vitro (e.g. in cell culture models) or using invasive biopsy techniques and subsequent immune-histochemistry coupled with different light microscopy techniques. Recently non- or minimal-invasive methods have been introduced in different cutaneous research areas. These methods include multidimensional imaging, in vivo multiphoton spectroscopy, optical coherence tomography, atomic force microscopy, near-infrared spectroscopy (NIR), in vivo Raman Micro-Spectroscopy and in vivo Reflectance-Raman-Spectroscopy.
The lecture will give an overview on the origin and regulation of the epidermal barrier. Furthermore new technologies in studying epidermal barrier function compared to established methods e.g. transepidermal water loss will be presented. Finally practical aspects for cutaneous studies with these techniques will be discussed.

Panel Comunicatios | *Comunicações em Posters*

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P.02 **FORECAST THE BEHAVIOR OF A NEW TOPICAL TREATMENT FOR ACNE USING NANOTECHNOLOGY -** A. Gomes, L. Ascensão, S. Candeias, Pedro Pinto, Catarina Reis

P.03 **AVALIAÇÃO DA EFICÁCIA DE CONSERVANTES EM PREPARAÇÕES COMERCIAIS PARA HIGIENE ÍNTIMA -** Ana Jorge, Rita Palmeira-de-Oliveira, José Martinez de Oliveira, Ana Palmeira-de-Oliveira

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P.05 **LYCOPENE FROM TOMATOES: VESICULAR NANOCARRIER FORMULATIONS FOR DERMAL DELIVERY** - Andreia Ascenso, Sónia Pinho, Carla Eleutério, Fabíola Garcia Praça, Maria Bentley, Helena Oliveira, Conceição Santos, Olga Silva, Sandra Simões

P.06 **ETHOSOMES AS CARRIERS FOR RIFABUTIN TOPICAL APPLICATION –** Beatriz Gaspar; A. Khan; Manuela Gaspar, Sandra Simões

P.07 **ESTUDO COMPARATIVO DA EFICÁCIA DE MÁSCARAS DE LIMPEZA CONTENDO BENTONITE E PEDRA POMES DA ILHA DE SÃO MIGUEL- AÇORES** - Carina Herman, Helena Amaral, D. Santos, J. Baptista Silva, J.M. Sousa Lobo

P.08 **DEVELOPMENT OF A MATHEMATICAL MODEL TO QUANTIFY THE WATER CONTENT OF HUMAN SKIN IN THE ENTIRE INDIVIDUAL -** Carla Monteiro, Liliana Tavares, Osvaldo Santos, Lídia Palma, Luís Monteiro Rodrigues

P.09 **TOP 10 DOS ANTIOXIDANTES UTILIZADOS EM COSMÉTICOS COM ATIVIDADE ANTI-ENVELHECIMENTO** – Carina Magalhães, Isabel Almeida, JM Sousa Lobo

P.010 **CUTANEOUS BENEFITS OF ORAL SUPPLEMENTATION WITH COLLAGEN** - Catarina Rosado, Catarina Silva, Luis Monteiro Rodrigues, Nelson Tavares

P.011 **BACTERIAL CELLULOSE MEMBRANES AS DRUG DELIVERY SYSTEMS: FURTHER INVESTIGATIONS -** Nuno Silva, Inês Eduardo, Isabel Almeida, Paulo Costa, Carmen Freire, Armando Silvestre, Carlos Pascoal Neto, Catarina Rosado

P.012 **FISH OIL SUPPLEMENTATION SEEMS TO FAVOUR *IN VIVO* RAT'S SKIN PHYSIOLOGY -** Raquel Barcelos, Cristina Mello-Sampayo, Hecson Segat, Caren Antoniazzi, Henrique Silva, M Bürger, Luis Rodrigues, Beatriz Silva-Lima

P.013 **ANTIOXIDANT ACTIVITY FROM POMACE OF "GINJINHA" LIQUOR FOR USE IN TOPICAL FORMULATIONS** – Elisabete Maurício, Catarina Rosado, Mário Bordalo, Inês Iria , A. Casimiro, Ana Diaz

P.014 **STUDY OF STEMS AND LEAVES EXTRACTS FROM ÓBIDOS SOUR CHERRY AS A SUBSTITUTE FOR SYNTHETIC ANTIOXIDANTS IN SKIN FORMULATIONS** - Elisabete Maurício, Catarina Rosado, Mário Bordalo, Inês Iria , A. Casimiro, Ana Diaz

P.015 **STUDY OF THE ANTIOXIDANT CAPACITY OF SEVEN HYDRO-ALCOHOLIC EXTRACTS OF *MEDICAGO* FOR APPLICATION IN COSMETIC FORMULATIONS** - F. Rodrigues, J. Santos, M. H. Amaral, M.B.Oliveira

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P.018 **CARATERIZAÇÃO DAS FORMULAÇÕES FOTOPROTETORAS COMERCIALIZADAS NAS FARMÁCIAS PORTUGUESAS** – J Ventura, IF Almeida, MH Amaral, PA Lobão, P Sousa e Silva, PC Costa, JM Sousa Lobo

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P.025 **EFFECTIVENESS OF TWO HYDRATING AND MOISTURIZING LOTIONS, DOUBLE-BLIND TRIAL** – Lidia Palma, Liliana Tavares, A Geraldo, J Gonçalves, S David, J Mendes, MJ Alpender, M Santos

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P.027 **CORNEOMETER OR MOISTUREMETER? -** Liliana Tavares, Maria Lídia Palma, Osvaldo Santos, Mª Angélica Almeida, Luís M Rodrigues

P.028 **CHARACTERIZING OBESE SKIN HYDRATION** - Liliana Tavares, Maria Lídia Palma, Osvaldo Santos, Mª Angélica Almeida, Luís M Rodrigues

P.029 **CHARACTERIZING OBESE SKIN BIOMECHANICS** - Liliana Tavares, Maria Lídia Palma, Osvaldo Santos, Mª Angélica Almeida, Luís M Rodrigues

P.030 **EVALUATION OF IRRITANT POTENTIAL OF AN AFTER SUN FORMULATION CONTAINING PUMICE FROM AZORES ARCHIPELAGO** - Marilene Estanqueiro, M. Helena Amaral, Delfim Santos, João Batista Pereira Silva, Jaime Conceição, José Manuel Sousa Lobo

P.031 **EVALUATION OF ULTRASOUND, ULTRASONOPHORESIS AND HOMEOPATHIC MESOTHERAPY ON CELLULITE TREATMENT** - Andreia Noites, Miram Couto, Ana Nunes, Josiane Nobre

P.032 **PRODUTOS DE HIGIENE ÍNTIMA FEMININA: ANÁLISE CRÍTICA DA COMPOSIÇÃO QUALITATIVA –** M Rocha, A. Palmeira de Oliveira, J Martinez de Oliveira, R Palmeira de Oliveira

P.033 **TRANSCUTOL-CONTAINING NLCS AS POTENTIAL CARRIERS FOR MOMETASONE FUROATE** – Sara Raposo, S. Machado, M. Urbano, Helena Ribeiro, António Almeida

P.034 **EVALUATION OF SENSORY PROPERTIES OF COSMETIC FORMULATIONS CONTAINING GREEN COFFEE OIL** - Tais Wagemaker, Catarina Rosado, Ana Sofia Fernandes, Patricia Rijo, Patricia Maia Campos, Luis M. Rodrigues

P01 . A Plectranthus madagascariensis extract as a new bioactive ingredient for skin formulations

Ana Fernandes[1,2], M. Prazeres[1], M. Baptista[1], M. Nicolai[1], M. F. Simões[2], C. Reis[1], C. Rosado[1], L.M. Rodrigues[1] & P. Rijo[1,2]
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Plectranthus plants have been reported to possess different medicinal properties and about 20 different species are traditionally used for skin conditions. Among those species, *P. madagascariensis* is used in the treatment of scabies and small wounds[1]. However, to properly understand the interest of this plant as a source of bioactive compounds for skin products, investigations on its efficacy and safety are still needed.
An aqueous extract of *P. madagascariensis* was prepared by a microwave-based procedure, with a yield of 16 mg dry extract/mL. The chemical composition of the extract was studied by HPLC-DAD where phenolic acids were found as the main components. This extract was also investigated for its antioxidant activity. An IC_{50} value of 41.7 µg/mL was found using DPPH assay. The antimicrobial activity of the extract was evaluated by the microdilution method and the minimum inhibitory concentration (MIC) value against *Staphylococcus epidermidis* was 40 µg/mL. The cytotoxicity profile of the extract was characterized in the human keratinocyte cell line HaCaT using the MTT assay. For concentrations up to 500 µg/mL and an incubation period of 24 h, no considerable cytotoxic effects were observed (decreases in cell viability lower than 10%). In summary, the microwave aqueous extract of *P. madagascariensis* studied herein exhibited antibacterial and antioxidant activities, which are desired properties for the healing of a variety of skin conditions. Furthermore, the extract did not show cytotoxicity for human keratinocytes. This extract should thus be further studied as a bioactive ingredient to be used in skin products.

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P02. Forecast the behavior of a new topical treatment for acne using nanotechnology

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Background: *Acne vulgaris* is a multifactorial disease that affects the majority of young adults [1-2]. It affects the pilosebaceous units and is promoted by several follicular alterations [3] and inflammatory reactions [4]. However, many of the treatments for acne foster bacteria resistance [5] and cause significant side effects [6]. Azelaic acid is commonly applied for acne treatment [7] and has both antibacterial [8] and anti-inflammatory properties [4]. Moreover, azelaic acid has been reported not to elicit bacteria resistance [9]. However, some side effects and low patient compliance have been associated with topical formulations of azelaic acid [10]. Thus, nanotechnology presents an innovative strategy that might overcome these problems by controlling drug release and reducing local drug toxicity [11].
Objectives: To evaluate and forecast the behavior of a new topical treatment for acne using PLGA nanoparticles containing azelaic acid.
Methodology: Nanoparticles were produced by a modified spontaneous emulsification solvent diffusion method and then included in gel of carbopol 940. Several parameters were characterized such size and zeta potential, morphology, drug-polymer interactions, drug release from nanoparticles and formulation excipients safety. Size and zeta potential were determined by photon spectroscopy and electrophoretic mobility, respectively. Loaded nanoparticles morphology was observed by SEM. Drug-polymer interactions and thermal characteristics were evaluated by DSC. *In vitro* drug release studies were performed. Excipients safety was accessed by occluded patch tests in humans (empty nanoparticles). **Results:** The range of nanoparticle size was from 250 to 350 nm and zeta potential was -11.13 mV. Monodispersed and spherical loaded nanoparticles were observed by SEM. DSC analysis suggested an interaction between the polymer and the drug. *In vitro* drug release studies suggested a controlled, pulsatile and complete release up to 3 days. Occluded patch test seemed indicate that all formulation excipients were safe.
Conclusion: Azelaic acid-loaded nanoparticles forecast to be an efficient and reliable treatment for acne. Further studies, now in progress, include evaluation of the long-term bacteria efficacy tests and efficacy tests with human volunteers.

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P03. Avaliação da eficácia de conservantes em preparações comerciais para higiene íntima

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Introdução: O ácido hialurónico (AH) é o componente maioritário da matriz extracelular da derme e uma das moléculas mais higroscópicas da natureza[1,2]. Este efeito é particularmente relevante ao nível da pele, pela sua capacidade hidratante, o que contribui para a sua utilização em produtos anti-envelhecimento.
Objectivos: O trabalho desenvolvido teve como objectivo a preparação e a caracterização física e mecânica de um creme O/A e de um gel hidrófilo de Aristoflex® AVC, contendo 0,1% de ácido hialurónico. Pretendeu-se ainda avaliar a capacidade hidratante das preparações desenvolvidas, mediante a realização de ensaios de biometria cutânea.
Métodos: Para avaliar a estabilidade acelerada por centrifugação, os cremes e géis com e sem AH foram submetidos a 2 ciclos de centrifugação de 30 min a 5000 rpm. Foi avaliada a firmeza e a adesividade das amostras armazenadas a 20ºC e a 40ºC ao fim de 8, 30 e 90 dias. Foram também avaliados o pH e a hidratação cutânea antes e 2 horas após a aplicação das amostras em 10 voluntários humanos.
Resultados: O geis apresentaram maior estabilidade física que os cremes. Após 90 dias de armazenamento a 20 ºC verificou-se uma diminuição ligeira da firmeza e da adesividade do creme com AH, enquanto a 40 ºC este se apresentou significativamente mais consistente e mais adesivo devido à perda gradual de água da fase externa. O gel com AH apresentou diminuição da firmeza após 90 dias de armazenamento, tanto a 20 ºC como a 40 ºC. Todavia, o mesmo gel armazenado a temperatura mais elevada apresentou aumento da adesividade.
Não se verificou uma influência significativa do AH no efeito hidratante e na variação do pH da pele, 2 horas após a aplicação única dos produtos desenvolvidos.
Conclusões: O gel de Aristoflex® AVC apresentou melhor estabilidade física e mecânica pelo que poderá constituir uma base dermatológica mais adequada para a incorporação do AH. Todavia, seria necessária a aplicação continuada, durante vários dias, dos produtos em creme e em gel com AH para se poderem obter resultados mais conclusivos relativamente à sua capacidade hidratante.

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P04. Mechanical characterisation of topical anti-psoriatic medicines containing betamethasone

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Objective: Textural and rheological characterisation of commercial semi-solid topical products containing betamethasone and discussion of the implications for adherence to topical treatment in psoriasis.
Methodology: Four semi-solid formulations (F1 cream, F2 gel and F3, F4 ointments) were analysed regarding their mechanical properties. The textural analysis was performed in the compression mode in a texturometer. From the graphic force *vs* distance obtained, the parameters maximum force (correlated with firmness) and negative area (correlated with adhesiveness) were calculated. Measurements were performed in quadruplicate at 20ºC. Rheological measurements were performed in a viscometer fitted with concentric coaxial cylinder geometry. Flow curves were obtained at 20º C in the shear rate range from 0.1 to $500s^{-1}$ with a delay period of 60s between measurements. Measurements were performed in triplicate and the results were fitted to the Power Law model.
Results: Ointments presented higher firmness (5x higher) and adhesiveness (7x higher) than the cream and the gel. All formulations presented shear-thinning behaviour. Ointments exhibited a hysteresis area (characteristic of thixotropic behaviour) which was not found on the other semi-solid formulations. Power law indexes (n) were similar among ointments and cream while the gel presented a less shear-thinning behaviour (higher n).
Conclusions: A relationship between rheological *in vitro* and sensorial *in vivo* results has been established for anti-psoriatic medicines showing that variations in mechanical properties may have an important influence on non-adherence and treatment failure. It has been reported that one of the reasons for non-adherence to topical treatment is the high products' adhesiveness[1]. Following this principle, adherence to treatment is expected to be higher for betamethasone gel and cream than for the ointments tested in this study. However, it must be noted that the vehicle should be selected according to the location and type of lesions besides its acceptability.
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P05. Lycopene from Tomatoes: Vesicular Nanocarrier Formulations for Dermal Delivery

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Purpose: The aims of this experimental work were to develop a novel simple, fast, economic and environmental friendly process for the extraction of lycopene from tomato and incorporate this lycopene-rich-extract in vesicular nanocarriers suitable for topical application.
Methods: The lycopene extraction was carried out without a co-solvent, for 30 min at room temperature, protected from light. The extracts were analyzed by different techniques and incorporated in ultradeformable vesicles: transfersomes and ethosomes. Formulations were evaluated for vesicle size, zeta potential, entrapment efficiency, vesicles' deformability. The cellular uptake of the vesicular formulation, stained with Rhodamine, was observed by confocal microscopy. Dermal delivery of lycopene formulations after topical application was tested *in vitro* and *in vivo* using an experimental anthralin-induced dermatitis inflammation model in mice ears mediated by reactive oxygen species.
Results: The little number of steps involved in lycopene extraction may have improved the yield of the lycopene extract and exerted a beneficial role in the stability of the pigment. Cytotoxic data demonstrated that extracted and commercial lycopene showed similar performances of low cytotoxicity at 10 μM, and were similarly affected by environmental conditions. The formulations results showed a good incorporation efficiency of lycopene in transfersomes and ethosomes. The vesicles presented 150 nm ± 50 nm in size and the deformability of the carries was assessed, being lycopene-loaded transfersomes more flexible than the ethosomal system. The vesicular formulation was uptaken by the cells being more concentrated around the nucleus. Finally, lycopene-transfersomes and lycopene-ethosomes epicutaneous application decreased anthralin-induced ear swelling by 97% and 87%, in a non-statistically different manner from the positive control.
Conclusion: The lycopene extraction process was rapid, single-step, safe and economically advantageous, providing a highly rich lycopene-extract. These results support that the lycopene-rich extract may be a good alternative to the expensive commercial lycopene to be incorporated in advanced delivery systems for topical application, namely transfersomes and ethosomes.

P06. Ethosomes as Carriers for Rifabutin Topical Application

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Introduction: Ethosomes are interesting and innovative vesicular nanosystems presenting features correlated with its ability to permeate through the human skin, due to their deformability, and to promote the dermal pharmacological action of several drugs [1]. Rifabutin (RFB) is an antibiotic from the class of rifamycins with hydrophobic characteristics and with important therapeutic application on mycobacterial infections [2]. Considering the well-known and urgent need for new treatment options for Buruli ulcer cutaneous lesions, a nontuberculous mycobacterial infection, we are especially interested in exploring opportunities making use of existing drugs formulated in new carrier systems developed for topical application.
Aim: We attempted to prepare a new RFB formulation for topical application using ethosomes, deformable lipid based nanosystems, to characterize incorporation parameters and to study *in vitro* release of RFB through synthetic and biological membranes.
Methods: Ethosomal systems basically composed of soy bean phosphatidylcholine, ethanol and water were prepared for incorporating RFB, as previously described [1]. Physicochemical characterization of the systems was performed and the drug incorporation parameters, vesicles size and charge were determined. Penetration of ethosomal systems driven by an external driven force was evaluated and release studies through both synthetic and biological membranes using Franz diffusion cells were conducted.
Results and Discussion: Ethosomal vesicles had mean sizes ranging from 120 to 140 nm. The quantities of ethanol and phospholipid present in the composition were studied and determined the use of an ethosome formulation made of 5% (w/v) soy bean phosphatidylcholine and 25% (v/v) ethanol to carry out the subsequent experiments. Penetration and release assays revealed that RFB-ethosome systems have adequate profile to be used in a topical application approach.
Conclusion: The overall results suggest that a suitable developed ethosomal formulation of RFB can be of actual value for improving its clinical effectiveness in topical treatment of antimycobacterial infections.

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P07. Estudo comparativo da eficácia de máscaras de limpeza contendo bentonite e pedra pomes da Ilha de São Miguel- Açores

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Introdução: A eficácia de produtos cosméticos pode ser avaliada através de testes de biometria cutânea, os quais permitem determinar caraterísticas biológicas, mecânicas e funcionais da pele [1]. Nesse contexto, as máscaras de limpeza têm como função melhorar determinados parâmetros cutâneos sem alterar as caraterísticas fisiológicas da pele [2].
Objetivos: Avaliar a eficácia de máscaras faciais contendo diferentes geomateriais através da medição não invasiva de determinados parâmetros cutâneos.
Métodos: Foram preparadas três máscaras de limpeza facial, a primeira contendo pedra pomes, a segunda com bentonite e a terceira com a associação de bentonite e pedra pomes (50:50). Além destes geomateriais as máscaras eram constituídas por uma mistura hidroalcoolicoglicérica (0.5:2:1), polietilenoglicol 400 e dióxido de titânio. A avaliação da eficácia das máscaras foi realizada através da aplicação e avaliação de parâmetros biométricos em voluntários humanos de ambos os sexos. Os parâmetros analisados foram a hidratação, o sebo e o pH cutâneo, utilizando as sondas Corneometer®, Sebumeter® e *skin-pH-Meter®,* respectivamente. Os valores foram avaliados antes e 30 minutos após a aplicação e remoção das máscaras nos voluntários.
Resultados: Evidenciou-se uma diminuição do sebo cutâneo nos indivíduos testados após a aplicação dos três tipos de máscaras avaliadas. Contudo, a associação da bentonite com a pedra pomes provocou uma diminuição mais significativa neste parâmetro. Não houve alterações significativas no que se refere à hidratação e pH cutâneo.
Conclusões: A associação da bentonite com a pedra pomes (50:50), apresentou uma capacidade de limpeza e ação desengordurante mais satisfatória do que as máscaras contendo cada um dos tipos de geomateriais isoladamente.
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P08. Development of a Mathematical Model to quantify the water content of human skin in the entire individual

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Introduction: Most of the skin functions depends on its water content. Furthermore, changes in the epidermal water content may indicate an on going pathophysiological process. Therefore, to accurately measure the skin's water content is a major objective, despite the many difficulties and limitations implied.
Objective: To create a mathematical model, based on the most often used related to characterize the water content in the human skin.
Material and Methods: Data from 89 female volunteers, ages between 20 and 46 years (31.8 ± 7.0 years old) was collected after informed consent. BMI ranged between 18.7 and 52.10 (28.95 ± 9.26) 2% of the volunteers have normal weight (BMI $\leqslant$ 24.9), 16.9% overweight (BMI 25 to 29.9) and 35.9% obese (BMI $\geqslant$ 30). All procedures complied with the ethical guidelines for research on human, provided by the Helsinki Declaration and subsequent amendments. The variables were registered from 4 different anatomical regions (forehead, zygomatic, breast, abdomen) and included the transepidermal water loss (TEWL), and superficial and deep hydration. The results of treatment involved descriptive statistics (SPSS 20.0) and central tendency and dispersion calculation, with Pearson correlations in order to find meaningful relationships with a confidence level of 95%.
Results: The first approach was to construct a mathematical linear model choosing the superficial hydration as the dependent variable while the transepidermal water loss, body mass index and age were considered as independent variables. We've found, in all anatomical regions, a strong and positive relationship (Rp_ zygomatic = 0695; Rp_forehead = 0751; Rp_breast = 0681; Rp_abdomen = 0792) and in addition, that for all the variables in each model, the value of "Variance Inflaction Factor" (VIF), was always lower then 5 (VIF's_ zygomatic <1.6; VIF's_ forehead <1.71; VIF's_ breast <1.4; VIF's_abdomen <1.5). This means we may not have estimation problems, due to multicollinearity between independent variables. Regarding the individual, there is the need to construct first a single variable to transepidermal water loss and to superficial hydration of the skin. These new variables were constructed by calculation of averages. These were similar to those found in different anatomical areas, observing an Rp = 0.80 and values of VIF's in all the variables <1.5.
Conclusion: These results suggest that it will be possible to build a mathematical model representing the human skin hydration. Not only because it was possible to find significant statistical relationships in each anatomical part but also because the study group has distinct characteristics that allow us to build an approximation to the studied population.

P09. Top 10 dos antioxidantes utilizados em cosméticos com atividade anti-envelhecimento

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Introdução Atualmente sabe-se que o envelhecimento cutâneo se encontra intimamente relacionado com o stress oxidativo, potenciado sobretudo pela exposição a agentes externos como a radiação UV1. Por manifestar os primeiros sinais visíveis de envelhecimento, a pele do rosto revela-se o principal alvo da indústria cosmética. Com o intuito de reduzir a concentração de espécies reativas presentes na pele e assim preservar os seus constituintes, prevenindo a sua degradação e o dano celular, muitos produtos cosméticos têm sido complementados com antioxidantes1,2.
Objetivo Avaliação da frequência de uso dos antioxidantes utilizados em produtos cosméticos com ação anti-envelhecimento, atualmente comercializados nas farmácias portuguesas.
Métodos Registo fotográfico das cartonagens de produtos cosméticos anti-envelhecimento, direcionados para a aplicação na zona facial ou especificamente na zona periocular e comercializados em 4 farmácias nacionais. Criação de um registo com 171 produtos cosméticos pertencentes a 25 marcas comerciais e análise da sua composição quanto ao uso de ingredientes anti-envelhecimento na generalidade e especificamente, de antioxidantes.
Resultados Os antioxidantes constituem a categoria prevalente (39%, Fig.1), entre os ativos com ação anti-envelhecimento, verificando-se a sua presença em 83% das formulações analisadas. O tocoferol e o ácido ascórbico e respetivos derivados, a niacinamida, a ubiquinona, os extratos de uva e o extrato de mirtilo, representam os dez ingredientes com atividade antioxidante mais utilizados nas preparações anti-envelhecimento (Fig.2).
Discussão/Conclusão Os antioxidantes mais utilizados são o tocoferol e principalmente o seu derivado acetato de tocoferilo. O uso preferencial da forma esterificada pode dever-se à sua maior estabilidade química, contudo o seu efeito antioxidante in vivo está limitado pela reduzida capacidade de hidrólise cutânea2. O uso de extratos vegetais com atividade antioxidante é cada vez mais expressivo3, justificando a sua presença no top 10 dos antioxidantes mais utilizados.
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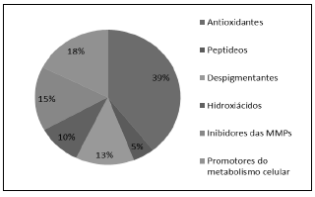

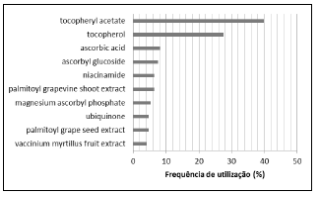

Figura 1 – Categorização dos ingredientes ativos com propriedades anti-envelhecimento. Fig. 2 – Avaliação da frequência de uso de antioxidantes em preparações anti -envelhecimento

P010. Cutaneous benefits of oral supplementation with collagen

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INTRODUCTION: Nutraceutics are often marketed with claims associated with skin benefits, but there is often little research to support their efficacy. Hydrolyzed collagen from fish, porcine or bovine origin is currently used in various fields including functional food, beverages and dietary supplements. These peptides can be easily attacked by proteolytic enzymes and more than 90% of the hydrolysates are digested and quickly absorbed after oral ingestion[1]. *In vitro* studies have shown that collagen peptides may act as messengers and trigger the synthesis and reorganization of new collagen fibers by stimulating fibroblast cells[2]. *In vivo* animal studies have established that ingestion of collagen peptide induces increased fibroblast density and enhances formation of collagen fibrils in the dermis[3]. This study aimed to establish *in vivo* and in humans the cutaneous effects of oral supplementation with a collagen hydrolisate.
METHODS: 18 female volunteers, mean age 52.3 years old, participated in the study. A placebo-controlled trial was chosen, where subjects were blinded as to which group they belong. All procedures respected the Declaration of Helsinki and respective emmendments. Supplementation consisted in 2.5 g of hydrolysed collagen or placebo each day for 28 days. Basal and post-supplementation measurements were taken of transepidermal water loss (TEWL), hydration, ultrasonography and skin elasticity in four anatomical sites - mid forehead, lateral forehead, neck and lower leg. Hydration status of the volunteers was assessed by plasma osmolality.
RESULTS: The marker of hydration status was within the range of normality for all volunteers. In the group supplemented with hydrolysed collagen, a significant increase in skin hydration (p=0,000) and elasticity (p=0,000) was observed. No statistically significant variations in TEWL were established. The control group maintained all the measured variables throughout the study.
CONCLUSIONS: A 2.5 g per day oral hydrolysed collagen supplementation improved skin hydration and elasticity. The efficacy of the oral intake of collagen peptides in the improvement of skin condition has, thus, been established.
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P011. Bacterial cellulose membranes as drug delivery systems: further investigations

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INTRODUCTION: Bacteria cellulose (BC), also known as biocellulose, is produced by some bacteria like *Gluconacetobacter sacchari* as a highly swollen membrane (>90% water content), which presents unique physical and mechanical properties, arising from its tri-dimensional and branched structure. Its high purity and biocompatibility triggered considerable interest on this material, particularly in products for the regeneration of damaged or diseased organs, including skin. Previous studies confirmed that BC can be successfully applied to modulate the bioavailability of drugs (1). Such systems could be particularly advantageous in the design of delivery systems that have, simultaneously, the ability to absorb exudates and adhere to irregular skin surfaces. Additionally, since most transdermal patches are manufactured by superimposing different materials, a system composed of fewer layers could simplify the preparation procedure and lower production costs.
AIM: The aim of this study was to further investigate the potential of BC membranes as systems for topical or transdermal drug delivery. The permeation through human epidermis of two drugs in BC and other formulation systems was compared, to assess its therapeutic applicability and feasibility.
METHODS: Caffeine and diclofenac were chosen for this study. A drug loading process in BC membranes was developed for both molecules, and the drug distribution was evaluated by Scanning Electron Microscopy. Each system was also compared with conventional formulations already in the market, like gels or patches. *In vitro* diffusion studies with Franz cells were conducted, using human epidermal membranes. Equivalent doses of the different formulations were placed in the donor compartment of the diffusion cells. The multiple steady-state fluxes of caffeine and diclofenac in each formulation system were determined.
RESULTS: A uniform distribution of both drugs into the BC membranes was achieved. Diffusion studies showed that the permeation rate of the drugs in BC membranes was similar to that obtained with the conventional systems.
DISCUSSION: These results confirm the findings in previous studies and show that this technology can be successfully applied to modulate the bioavailability of several drugs for topical and transdermal administration, since the drugs in BC had a similar performance to the conventional formulations. Further studies will be conducted to establish biocompatibility and stability of the BC-caffeine and BC-diclofenac systems.
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P012. Fish oil supplementation seems to favour in vivo rat's skin physiology

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The lipid composition of the skin may be influenced by the dietary lipid profile and the preservation of an healthy skin is related to its lipids composition [1], which plays an important role in skin's physiological functions and determines its morphology, and histology [2]. Fish oil (FO) is a source of polyunsaturated fatty acids omega-3, mainly eicosapentaenoic acid (EPA, 20:5 n-3) and docosahexaenoic acid (DHA, 22:6 n-3) [3]. They can be metabolized by the epidermal enzymes producing metabolites with anti-inflammatory and anti-proliferative properties suggesting potential benefits in some inflammatory skin disorders [4]. The effect of FO supplementation on *in vivo* rat's skin hydration was investigated in the present study. Male Wistar rats (mean 447±14g) were randomly assigned to 2 experimental groups (n=10) and daily administered by gavage, for 30 days, with water (control) or with FO (Herbarium®, PR, Brazil) 3 g/kg [5]. On day 30, rats were sedated (inhaled ether ~5min) to avoid additional stressing stimulus and allow measurements. The anatomical area was the dorsum previously (24h) shaved using a soft hair-removal preparation. Measurements involved non-invasive techniques allowing to quantify (1) epidermal hydration (Corneometer CM825), (2) transepidermal-water-loss (TEWL, by the Tewameter TM300) and (3) cutaneous microcirculation (by Laser Doppler Flowmetry, using the Periflux8000). Statistical comparisons between groups were performed using T-test (Statistica 10.0) and a confidence level of 95% adopted. Results indicate an improved skin hydration (p=0.02) and a decrease of TEWL (p=0.02) in the FO supplemented group when compared with control. In addition a significant increase on cutaneous microcirculation (p=0.032) was observed in the FO treated animals. These results suggest that FO supplementation may improve the skin hydration and promote skin physiological functions, justifying further developments.
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P013. Antioxidant activity from Pomace of "ginjinha" liquor for use in topical formulations

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Introduction: Pomace is a by-product of the industrial production of Obidos liquor "ginjinha" (Prunus cerasus L., Rosaceae), typical from Portugal. Cherry pomace is made up of the leftover skins and seeds of the cherry after industrial pressing, which are normally discarded without any valorization. Two different samples of pomace were screened for their potential exploration by determination of their phenolic content and antioxidant activity.
Objectives This study aims to demonstrate the applications of phenolic compounds as possible skin-protecting additives in topical or cosmetic formulations.
Methods: The two samples of pomace (with and without seeds) were extracted by maceration with ethanol, methanol and acetone during 24 h and by decoction in boiled water for 15 minutes. The resulting extracts were evaporated or lyophilized. The Total Phenolic Content was determined with the Folin-Ciocolteau method. The antioxidant activity was confirmed by determination of their free radical scavenging activity DPPH and FRAP assay. Statistical analysis was made by ANOVA and t Test.
Results: In all extraction methods the pomace extracts without seed showed a higher concentration in polyphenols and antioxidant activity than those from pomace with seed. The best extraction solvent was methanol.
Conclusions: The tested cherry pomaces are a promising agro-industrial by-product as a low-cost antioxidant source, with potential to be added to functional cosmetics formulations.

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P014. Study of Stems and Leaves extracts from Óbidos Sour Cherry as a substitute for synthetic antioxidants in skin formulations

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Introduction: The green by-products Stems and Leaves of the sour cherry (*Prunus cerasus L., Rosaceae*) used in the Óbidos liquor "ginjinha" from Portugal, were screened for industrial exploitation by determination of their phenolic content and antioxidant activity.
Objectives: This study aims to demonstrate their potential as novel bioactive dermocosmetic ingredients, mainly as substitutes for synthetic antioxidants.
Methods: The sour cherry by-products stems, leaves and mix (stems and leaves) were extracted by maceration with different solvents: ethanol and ethanol/water 70:30, during 24 h. All the extracts were evaporated and suspended in propylene glycol and water. The Total Phenolic Content was determined with the Folin-Ciocolteau method. The antioxidant activity was confirmed by determination of their free radical scavenging activity through DPPH and FRAP assay.
Results: Stems and mix extracts showed a higher concentration in polyphenols and antioxidant activity than those obtained from leaves. The best solvent was ethanol/water 70:30 with the highest phenolic content for stems 41,14 mg GAE/g plant, mix 35,75 mg GAE/g plant and leaves 16,04 GAE/g dry plant. The antioxidant activity of hydroethanolic and ethanolic stems and mix extracts was similar to the obtained for the synthetic antioxidant BHT in the same conditions.
Conclusion: The tested sour cherry green waste (stems and mix) is a promising agro-industrial by-product to be employed as a low-cost antioxidant source. Further studies will be conducted to address their potential use as functional dermocosmetic ingredients.

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P015. Study of the antioxidant capacity of seven hydro-alcoholic extracts of Medicago for application in cosmetic formulations

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Introduction: Several plants have been studied as potential sources of natural antioxidants and various compounds have been isolated, many of them polyphenols [1-2]. Plant extracts are being increasingly used in skin care products. Topical natural antioxidants are a useful strategy for the prevention of photo aging and oxidative stress mediated skin diseases [3]. The scavenging activity for pro-oxidant reactive species is a primary requirement for the screening and the development of new topical antioxidant formulations based in natural plant extracts [3]. *Medicago* species are from the botanical family of *Leguminosae* and the genus includes about 56 species mainly distributed in Mediterranean climatic conditions [4-5]. In this context, we want to study different species of *Medicago* and evaluate their antioxidant capacity (AA).
Aims: Hydro-alcoholic extracts of seven species of *Medicago* were screened for antioxidant activity with perspective to be use as functional ingredient in skin formulations.
Methods: The AA of the extracts was assessed by standard methods such as DPPH and FRAP. IN this study was also evaluated the total phenolic content by Folin-Ciocalteu assay, and the total flavonoid content.
Results and Conclusions: All species have high antioxidant activity as well as high amounts of polyphenols and flavonoids. Thus, Medicago extracts can be considered as promising antioxidants in cosmetic formulations.

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P016 . Lipid nanoparticles-containing gel as a carrier to improve skin biological effects

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Introduction: Traditionally, dry skin treatments were based on rehydration of the epidermis, through the use of emollients and/or an occlusive emulsion[1].. According to previous studies lipid nanoparticles (LNP) can act as enhancers of skin moisture due to their occlusive effect [2].
The aim of this study was to evaluate the skin biological effects of a LNP-containing gel with moisturizing proprieties.
Methods:Two polymeric hydrogels were prepared: LNPGel containing nanoparticles and BlankGel prepared without LNP. Both formulations were evaluated for the epidermal capacitance (Corneometer CM 820), transepidermal water loss (TEWL; Tewameter TM210) and skin surface lipids (Sebometer SM 810; C+K Electronics GmbH), a on a panel of uniform volunteers for 28 days.The volunteers had given their written and informed consent before the evaluation (n=10, young healthy females - 18-25 y.a., same professional activity). The formulations were applied in the forearm and the results were compared with a defined control area (anatomically equivalent) on the same forearm. Measurements were performed under standardized conditions, at room temperature.
Results and discussion: The effect of the formulations on the skin hydration and on the maintenance of the intactness of the lipid lamellae was studied in 10 selected volunteers. After 28 days into the study, both gels were non-irritating to the skin, as it was expected due to the selected components. The results obtained showed that LNPGel and BlankGel were significantly different ($p<0.01$) from the control area. The BlankGel showed the lowest epidermal capacitance and the highest TEWL when compared to the formulation containing lipid nanoparticles, showing that the LNP influenced the moisturizing proprieties of the skin.
Conclusions: An enhancement on skin moisture and reduction on transepidermal water loss was observed after the application of LNP particles on the skin.

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P017 . About determinants of in vivo microcirculation – data from a pilot study

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Introduction - The study of the relationships between transcutaneous variables, especially microcirculatory flow by Laser Doppler Flowmetry (LDF), transcutaneous gas pressures (tcpO2 and tcpCO2) and transepidermal water loss (TEWL) has provided new directions for the exploration of knowledge in view of its practical application, now that these are very easy-to-use *in vivo* techniques and with very good reproducibility [1-2].
Objective -This study aims to explore the impact of changes in local perfusion in the lower limb, on the epidermal "barrier" function.
Methods - A group of seven young healthy volunteers (24.3 ± 0.8 years old) was studied after informed consent. All procedures complied with the ethical standards for human research by the Declaration of Helsinki and subsequent amendments. Three protocols were designed involving postural change maneuvers (protocol I - sitting with the leg to 90° relative to the body axis; protocol II - supine with elevation of the leg 30°) and an occlusion test with application of a tourniquet-cuff (protocol III). Studied variables in distal locations of the lower limb (dorsal and ventral areas of the second finger) involved microcirculatory blood flow by LDF (PeriFlux PF5000, PF5010 System, Perimed, Sweden), tcpO2/CO2 by transcutaneous gasimetry (Periflux PF5000, PF5040 tcpO2/CO2 System, Perimed, Sweden) and TEWL (Tewameter TM300, CK electronics, Germany). All variables were assessed before, during and after these maneuvers. Descriptive and nonparametric statistics were applied and a 95% confidence level was adopted.
Results and Discussion
Protocol I – there was a significant increase in the values of LDF and tcpCO2, an equally significant decrease in tcpO2 during the elevation of the lower limb, but no significant change in the TEWL values. When the lower limb returned to the starting position the values returned to baseline after some minutes. In **Protocol II** there was a statistically significant decrease of LDF and tcpO2 values during the elevation of the lower limb, accompanied by an equally significant increase of tcpCO2 but no significant changes were found for TEWL. Once resuming the starting position, values returned to baseline after some minutes. With **Protocol III**, there was a statistically significant decrease in the values of LDF and tcpO2 during the occlusion, accompanied by a statistically significant increase of TEWL and tcpCO2 values, which returned to baseline when the tourniquet was removed.
Conclusion - Confirming previously published results [3], the present data suggests that local perfusion conditions might influence the epidermal skin "barrier".
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P018 . Caraterização das formulações fotoprotetoras comercializadas nas Farmácias Portuguesas

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Introdução: O conhecimento dos efeitos nocivos causados pela exposição solar excessiva motivou um consenso na importância da utilização de protetores solares. A comunidade científica tem desenvolvido filtros solares cada vez mais eficazes e com amplo espetro de proteção, existindo no mercado um extenso leque de opções para os consumidores.
Objetivos: Caraterização dos protetores solares comercializados no mercado Português, incidindo particularmente na análise da frequência de uso de filtros solares.
Métodos: Efetuou-se a análise da rotulagem de protetores solares de 23 fabricantes de produtos cosméticos (n=174) comercializados em Farmácias e Parafarmácias do Norte do País. A informação coligida foi categorizada relativamente ao FPS, resistência à água, filtro solar (orgânico/inorgânico; anti-UVA/ anti-UVB), forma de apresentação e segmento de mercado (infantil).
Resultados: Os filtros orgânicos mais utilizados são o Butilmetoxidibenzoilmetano (anti-UVA, 75,4%); o Octocrileno (anti-UVB, 70,9%) e o Bis-etil-hexiloxifenol metoxifeniltriazina, (amplo espetro, 70,1 %). A associação de filtros mais frequente é a associação exclusiva de filtros orgânicos. O dióxido de titânio ocupa o 5º lugar (46,3%) dos filtros mais usados, embora nos protetores solares infantis seja utilizado com uma frequência de 90,2%. Nestes, a associação dos filtros inorgânicos com orgânicos é a predominante (75 %). Os filtros de amplo espetro são os mais utilizados, seguidos dos filtros anti-UVA. As preparações emulsionadas surgem como principal forma de apresentação, seguidas dos sprays. O FPS mais frequente é o 50+, representado em 90% dos fotoprotetores infantis. Estes são descritos com elevada frequência como muito resistentes à água (44 %).
Discussão/Conclusão: Com o crescente conhecimento dos efeitos lesivos da radiação UVA, a inclusão de filtros anti-UVA na composição dos protetores solares foi reforçada, bem evidente no fato de o filtro mais usado pertencer a esta categoria. É bem patente o uso preferencial de filtros inorgânicos em fotoprotetores infantis associado ao seu menor risco de sensibilização cutânea. A compilação desta informação permite caraterizar as tendências emergentes na área da fotoproteção e providenciar dados que poderão ter utilidade na avaliação dos riscos ambientais, tais como os associados à presença de ingredientes cosméticos nos ecossistemas aquáticos.

P019 . Evaluation of the antioxidant activity of a chestnut extract in human keratinocytes

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Objective: The skin represents a major target of oxidative stress since it is continuously exposed to external oxidizing agents. Several factors may contribute to changes in the skin redox balance being the exposure to sunlight one of the most important. Antioxidants are used in topical formulations to attenuate the oxidative stress. In previous studies, a *Castanea sativa* leaf extract has been found to scavenge several reactive species that have been implicated in the skin oxidative stress. The aims of this study included the optimization of a method with fluorescence detection to evaluate the antioxidant activity in human keratinocytes (HaCaT) and the study of the antioxidant activity of a *Castanea sativa* leaf extract (ECS) using the optimized methodology.
Methodology: The methodology implemented is based on the use of the ROS-sensitive probe 2,7-dichlorodihydrofluorescein diacetate (DCFH-DA), which enables the intracellular detection of reactive species. For the implementation of this methodology, the optimization of the experimental conditions was initially carried out by establishing the more adequate density of cells, the incubation time with the DCFH-DA probe and the H_2O_2 concentration. The DCFH-DA (50 μM) probe concentration was chosen based on reports from the literature. From the results obtained on the optimization phase, it was possible to determine that the most appropriated conditions were: cell density of 2,0 x 10^4 cells/well, H_2O_2 concentration of 1000 μM and DCFH-DA probe concentration of 50 μM and probe incubation time of 1 hour. **Results:** ECS exhibited a marked antioxidant activity, denoted by a reduction of the fluorescence emitted by the DCFH oxidized form, which was dependent on the ECS concentration. The maximum protection (corresponding to 100%) afforded by ECS was observed for the concentration of 100 μg/mL. The studied extract contains several phenolic compounds that are able to scavenge reactive species including H_2O_2, which was used in this work as the oxidant agent.
Conclusions: The methodology based on fluorescence detection in the presence of DCFH-DA probe developed in this study, allowed the assessment of the ECS antioxidant activity in HaCaT keratinocytes. Considering the marked activity exhibited in this cell model, this extract can be a promising protective agent against cutaneous oxidant factors. The phenolic compounds present in the ECS can be at least partially responsible for the observed antioxidant activity.

P020 . Food supplements with anti-aging activity: A market overview

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Introduction: Skin aging is one of the principal concerns of the modern society, where everyone wants to look younger. The development of products which are able to counteract the signs and symptoms of cutaneous aging has fostered in the last years. Active ingredients with anti- aging effect are conventionally used in topical formulations. Food supplements are a recent anti-aging approach thus it is important to increase the knowledge about the market in order to better substantiate advice to consumers.
Objective: Characterization of the food supplements with anti-aging effect commercialized in Portugal.
Methodology: In this study, 30 food supplements with anti-aging effect were analyzed, which were selected from various internet sites and Portuguese pharmacies. Their composition was evaluated regarding the most important categories of active ingredients, the daily intake, and the dosage form.
Results: The results showed that the most important category of active ingredients is Antioxidants. The most representative actives were grape seed extract (53 %), vitamins C (47 %) and E (40 %) and lycopene (33 %). Despite the scientific evidence (1), vitamin C and E appeared most frequently isolated, but nearly 70% of the food supplements have one of these active ingredients. Recommended daily intake is more commonly 1 per day during 2-3 months (50 %). Finally, the majority of the food supplements comprise between 2 and 5 active ingredients (40 %), and the most representative dosage form is capsules (70 %). **Discussion/Conclusion:** Several benefits can be pointed out to food supplements such as simplicity of use, dose accuracy and improved stability whilst poor availability represents their downside. The supplements with anti-aging effect presented on the Portuguese market are mainly based on antioxidants which is in accordance with the strong rational regarding implication of oxidative stress in skin aging (2) Vitamin C regenerates the oxidized form of vitamin E providing synergic effects (1). Interestingly, this association was not frequently found in the supplements analyzed which can be a reflex of poor scientific substantiation. The data obtained in this study can help pharmacists provide more effective consumer counseling regarding anti-aging food supplements.

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P021 . *In vivo* evaluation of the skin irritation potential of bacterial cellulose membranes

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Objective: Biocellulose (BC) is a highly pure form of cellulose, produced in the form of a swollen membrane. Previous studies demonstrated that BC membranes were able to modulate the skin release of model drugs (1). In this study, their skin irritation potential was evaluated in human subjects.
Methodology: Fifteen healthy individuals participated in this study. BC membranes with and without glycerin (acting as plasticizer) were tested. SLS (2 % w/v) was the positive control. The patch test was performed with aluminum chambers fixed with adhesive tape. An empty chamber was used as negative control. The products were applied in the inner forearm and after 24 h the patches were removed. The visual assessment of the degree of irritation was made 2 and 24 h after patch removal and graded by a dermatologist according to a 5-level reference scale. In the same time intervals TEWL measurements were performed with a Tewameter and erythema was evaluated with a Colorimeter. Skin moisturizing effect was assessed with a Corneometer. Statistical analysis was performed with IBM SPSS Statistics 21 (α=0.05). The study was approved by the ethics committee of the Faculty of Pharmacy, University of Porto.
Results: Significant differences were observed for TEWL and erythema for the positive control and the irritation scores were different from zero for all volunteers, for both measuring times. Regarding BC membranes, no significant differences were observed for TEWL measurements in comparison with negative control 2 and 24 h after patch removal, which is an indicator of an absence of barrier disruption. Similar results were found for erythema. Clinical scores were zero at both times for all volunteers, with the exception of four volunteers that exhibited weak reactions (score 1 or 2). BC with glycerin provided a skin moisturizing effect statistically higher than the negative control ($p=0.044$) which was not observed for BC alone.
Conclusions: The good skin tolerance found after single application under occlusion reinforces the putative interest of BC membranes as supports for drug topical delivery. The inclusion of glycerin besides modifying the mechanical properties results in a skin moisturizing effect, which could be clinically relevant for the treatment of skin diseases characterized by dryness such as psoriasis and icthyiosis.
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P022 . Sensorial assessment of the non-ionic emulsions: the first step to select the best formulation

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Introduction: Topical emulsions are complex multiple-phase systems which may contain a number of excipients, including, surfactants. The first step to select the correct surfactant can be driven by sensorial identity of the emulsion. The choice of excipients in a formulation will affect its textural and sensorial properties. This type of analysis, called sensorial analysis, enables the fine optimization of a formulation to improve the patients' sensorial experience.
This study was developed in order to optimize the formulation and to verify which sensory parameters are the main driving forces in the decision of acquirement the product.
Methods: Two non-ionic emulsions, hot processed, were prepared differing on the surfactant (A and B) and the perfume:

Emulsion	Without perfume	Perfume1	Perfume2	Perfume3	Perfume4	Perfume5	Perfume6
A	A0	-	A2	A3	-	-	-
B	B0	B1	-	-	B4	B5	B6

To evaluate the acceptability of all formulations, a inquiry was answered by each volunteer, by the assessment of sensory attributes such as texture, odor, after feel, greasiness, softness, film residue, penetration, spreadability and probability of acquiring the product using a hedonic scale from 1 to 5.
Data were analysed by using a two-way ANOVA and were expressed as mean ± SD. Statistical significance was considered at a probability level of $p<0.05$.
Results and discussion: The results obtained from the sensory evaluation done by 70 volunteers showed that the panelists did not detect the differences between emulsions A0 and B0. Emulsion A presents the highest score for all parameters, except for the greasiness. The main difference detected by panelists between emulsions A and B was the film residue. It was clearly shown that perfume and texture were the attributes with the most significant influence in the decision in acquiring the product.
Conclusions: We can conclude that the sensorial analysis is the missing tool between product development and the marketing phase and this type of analysis is suitable for identifying any kind of formulation problems and for the analysis of consumers' requirements.

P023 . Antimicrobial safety of a preservative-free system for topical application

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Introduction: Emulsions are thermodynamically instable systems exposed to physical, chemical and microbiological influences during manufacture, transport, storage and use [1].
Topical emulsions are complex multiple-phase systems, which may contain a number of excipients and have great potential for microbial contamination and growth, often demanding the use of good preservatives, which must not interfere with the physical properties of emulsions. However, when added to emulsions preservatives may affect the long-term physicochemical stability of the system by changing pH and viscosity [2]. Therefore, a self-preserving topical emulsion formulation presents obvious pharmaceutical, technological and economic advantages.
The present study was conducted in order to evaluate the antimicrobial safety of a preservative-free w/o emulsion intended for topical application.
Methods: Stability studies included the storage of the w/o emulsion at room temperature and 40ºC (stress test). The antimicrobial activity was performed according to a modification of membrane filtration method described in the Ph.Eur. (6.1.3.). In parallel, the spreading method was also performed. Briefly, the 8 samples of 20 mL were prepared separately, and afterwards contaminated with an inoculum of 10^8 cfu of Pseudomonas aeruginosa, Staphylococcus aureus, Candida albicans and Aspergilus niger. The antimicrobial activity of the emulsion was evaluated during 28 days. Results were expressed as the log reduction of the cfu at 0h, 48h, 7 days, 14 days and 28 days.
Results and discussion: Although the antimicrobial activity was dependent on the type of microorganism and temperature of storage, all samples complied with the Ph.Eur. specifications The storage temperature at 40ºC was unsuitable for microbial growth.
Conclusions: The study confirm that the w/o emulsion presents auto-preservation properties avoiding the use of preservatives.
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P024 . Optimization of in vitro skin release by AINEs from gel formulations

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Introduction: The release of a therapeutic agent from a formulation is dependent upon the physico-chemical properties of both the drug and the vehicle. The aim of this research was to study the effect of preservative on the release patterns of AINE from topical gels and compare the formulation's drug releases to the commercial formulation.
Methods: Ethanol was used in different concentrations (25% – GA - and 30% - GB) and we compare both formulations with the commercial formulation (R). The rheological characterisation and apparent viscosity was evaluated by Brookfielfd viscometer (Model DV II, SSA, SPD nº 7 at 25 °C). *In vitro* permeation profile was determined using vertical Franz diffusion cell apparatus through hydrophilic polysulfone membranes filters (Tuffryn®-0,45µm) and silicone membrane (diffusion area of $1cm^2$) during 12 hours. The receptor phase contained a mixture of 3:2 buffer phosphate/ethanol. The amount applied was 200 mg for either formulation. Data was expressed in cumulative amount of AINE released/permeated per cm^2 in order to time. A repeated measures design using 12 replicated cells per formulation was used to establish Two-way analysis of variance (ANOVA) with replication was done ($p<0.05$) to detect differences among the formulations.
Results and discussion: All the gels showed a pseudoplastic profile. GB presented the lower apparent viscosity. This decrease in viscosity was due to the addition of 5% more of ethanol. In the release studies in Tuffryn® we verified that the amount of ethanol affected the drug release when comparing GA to GB ($p<0,05$ and $Fexp>Fcrit$). From the two formulations tested only GB presented a release profile similar to R ($p>0,05$ and $Fexp<Fcrit$). This result was confirmed in a second release study using silicone membranes for GB and R ($p>0,05$ and $Fexp< Fcrit$). After 12 hours both formulations had released around 18.6% ± 1.1 of inicial concentration.
Conclusion: The results showed that the AINEs released was influenced by the amount of ethanol on gel.

P025 . Effectiveness of two hydrating and moisturizing lotions, double-blind trial

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Introduction: It is widely recognized the contribution of application of cosmetic formulations containing hygroscopic components and emollients to maintain the level of skin hydration (1,2) and maintaining the dermal barrier. Nevertheless, the relationship between moisture content, and biomechanical properties of skin in vivo are poorly studied (3). The present study aims to compare the efficacy of two cosmetic formulations. Furthermore, it intends to help relate the hydration and biomechanical properties of human skin in vivo. **Material and Methods** : In a double-blind trial were studied for 1 month, 11 healthy female volunteers without cutaneous pathology, with a mean age 25.1 ± 6.2 years. During the study the volunteers kept their daily hygiene habits and applied 1 ml / day of two lotions (Eucerin pH5 and Loción Xérial 10). The anatomical areas analyzed were arm and leg. The evaluation occurred at T (0), T (15) and T (30). The skin hydration was assessed by MoistureMeterSC and MoistureMeterD Delfin Technology Ltd of Kuopio, Filand. The transepidermal water loss (TEWL) was assessed by TewameterTM 300 (CK electronics Germany). The elasticity was evaluated by the biomechanical descriptors: Uf, Uf-Ua, Ua / Uf, Ur, Ur / Ue, Uv / Ue, Ua (Cutometer SEM 575 electronics CK Germany). Statistical analysis was performed at SPSS 20.0, using nonparametric, with a confidence level of 95%. **Results and Discussion** :This study showed a significant improvement in moisture content of the superficial two anatomical locations with both creams, vs. the untreated areas, however the increase of deep hydration was only significant in the arm. It was also observed an improvement of skin barrier function by a significant decreased on TWEL values in both groups, but highest impact on Xerial 10 Locion. For biomechanical descriptors (Uf/Ua, Ua/Uf) with, it was observed a significant improvement.
Conclusions: The results allowed to identify the importance of applying moisturizers on skin hydration and the results obtained in terms of biomechanical descriptors suggest that the ability to return to the initial phase (Uf-Ua) and the total elasticity (Ua / UF) may be related to increased hydration.

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P026 . The increase in water intake benefits functions of the skin?

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Introduction. : It is generally stated that increased water intake has a positive influence in functions and appearance of skin. Considering the total contribution of water intake (diet and drink) and the produced via metabolism (1)We can assess the importance the effects of additional dietary natural mineral water uptake has on the physiology of the skin, which is recognized its importance in cellular dynamics (2) in the present study we want to evaluate in healthy groups with different intakes of total water the impact of dietary uptake of water in the hydration and biomechanical properties of skin in vivo.
Material and Methods : 48 healthy female volunteers with a mean age of 25.1 ± 6.2 years was asked to drink 1 month 2L/day apart from there normal dietary habits and were evaluated on days zero, fifteen and thirty. Beyond the Body Mass Index (BMI), were measured the Total Body Water (TBW), Extra Cellular Water (ECW) and Intra Cellular Water (ICW) through the system Bodystat QuadScan 4000. The skin surfasse hydration was assessed with the MoistureMeterSC and MoistureMeterD (Delfin Technology Ltd Kuopio, Filand), the transepidermal water loss (TEWL) was assessed with the TewameterTM 300 (CK electronics Germany), and biomechanics was studied through indicators: Uf, Ua / Uf, Ur , Ur / Ue, Uv / Ue, Ua with the Cutometer SEM 575 (CK Electronics Germany) The univariate descriptive statistacal analyses were performed using SPSS 20.0 with a confidence level of 95%.
Results and Discussion: The add-on administration of (2L/day) natural mineral doesn´t change the blood volume or the weight of the individuals but increased the skin hydration both superficial and deep especially in individuals which consume less water per day, like it were demonstrated in previous studies on dry skin(3). No significant effect was observed in the TEWL, confirming data in previous studies. The results obtained in biomechanical variables indicate a positive relationship with skin hydration, although to a lesser extent.
Conclusions: This study demonstrates the impact of dietary intake of water in hydration and behavior biomechanics skin in vivo.

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P027 . Corneometer or Moisturemeter?

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Introduction: Moisturemeter SC® and Corneometer CM825® are "capacitance" based devices used to measure epidermal hydration within the same frequency range (1.3 MHz and 0.9-1.2 MHz, respectively). Corneometer seems to measure in the first 10-20 µm depth in the Stratum corneum, but no indication is given regarding the Moisturemeter measuring depth. Since skin hydration changes with overweight, when compared with normal subjects, we have tested both devices in these two populations.
Objective: To evaluate the reproducibility of two different devices based on the same principle, to measure skin hydration.
Methods: This observational, transversal study involved 89 female volunteers (convenience sample), between 20 - 46 (32±7) years old, no pathologies, except eventual or declared obesity. The study respected the Declaration of Helsinki and subsequent ethical guidelines. A single measurement of epidermal hydration took place in different anatomical areas, under standard, controlled conditions. We've used two different equipments - the Moisturemeter-SC® (Delfin Thecnologies) and the Corneometer CM825® from Courage-Khazaka electronics (FRG, Germany). Results were statistically treated (descriptive) by SPSS 20. A confidence level of 95% was adopted.
Results: Adjusted for age, no significant differences between Corneometer and Moisturemeter mean values, were found Nevertheless, a higher standard deviation and variance values on Moisturemeter results were clearly evidenced. This comparison allowed to find lower variation results with Corneometer, and confirms previously observations. But additional studies are needed to understand this difference's meaning
Conclusion: Corneometer seems to be a more reliable equipment for measuring epidermal surface hydration.

P028 . Characterizing obese skin hydration

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Introduction: Overweight affects normal skin's physiology and might lead to several skin disorders. Only a few studies aimed to characterize obese skin functions, mostly to minimize unsightly skin changes after massive weight loss.
Objectives: to identify an overall indicator of skin hydration that would allow an full characterization and follow up of skin conditions during recovery.
Methods: Our convenience sample involved 89 female volunteers, 20 - 46 (32±7) years old, without any relevant pathologies except overweight, obesity and morbid obesity. The study respected the Declaration of Helsinki and subsequent ethical guidelines. Volunteer's weight and height were obtained by anthropometric measurements and the Body Mass Index (BMI)calculated. Single measurements obtained under standard and controlled conditions in different anatomical sites included epidermal hydration and barrier function.
z-scores were obtained from the biometrical variables transformation. Since some of the indicators were distributed in reverse scale (the higher the absolute value, the worse the performance of skin) the z-score of these variables became its symmetrical. The global indicators (for each anatomic region) were calculated using the arithmetic mean between these altered partial indicators.
Results: A negative correlation was found between these global indicators of hydration and BMI for the abdominal region. These hydration global indicators were also inversely related with other variables in the same region.
Conclusion: The developed indicator seems to reveal an association between skin hydration and BMI in all the body although more pronounced in the abdominal area.

P029 . Characterizing obese skin biomechanics

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Introduction: Overweight and obesity greatly modify the envelope function. However, there's a lack of information regarding skin's pathophysiological modifications determined by weight gain or weight loss. **Objectives:** This study aims to characterize skin's biomechanical behaviour changes related with weigh disorder.
Methods: The experimental sample included 89 female volunteers, 20 - 46 (32±7) years old, without any relevant pathologies except overweight, obesity and morbid obesity. All procedures respected the Declaration of Helsinki and respective amendments. Volunteer's weight and height were obtained by anthropometric measurements and the Body Mass Index (BMI)calculated. Single measurements obtained under standard and controlled conditions in different anatomical sites included cutometry and reviscometry (CK electronics) which provide several biomechanical descriptors. Z-scores were obtained from these biometrical variables transformation. Since some of the indicators were distributed in a reverse scale (the higher the absolute value, the worse the performance of skin) the z-score of these variables became its symmetrical. The global indicators (for each anatomic region) were calculated using the arithmetic mean between these altered partial indicators. A significance level of 95%. was adopted.
Results: Results suggested a negative correlation between global biomechanical descriptors and BMI specially in the abdomen and breast areas. This correlation was adjusted to age. Furthermore, this global indicator seems to well describe the effect of overweigh in skin's biomechanical +properties, no matter the anatomical region involved.
Conclusion: This global descriptor reveals a general association between skin's biomechanics and BMI. The negative influence expected from ageing is also depicted, which suggests an interesting application potential for this indicator.

P030 . Evaluation of Irritant Potential of an After Sun Formulation Containing Pumice from Azores Archipelago

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Introduction : Pumice is a volcanic rock formed during explosive volcanic eruptions of acidic and highly viscous magma; it is an extremely vesicular, frothy, natural glass having high (60-75%) silica content and very low density that in some cases float on water. Pumice consists of fragile acicular glass and minerals (in particular, feldspars). Due to their high content of silica dioxide, which has anti-inflammatory activity, formulations with particle sizes smaller than 63 µm are being studied.
Aim: The aim of this work was the evaluation of the irritant potential of a gel with pumice (5%, w/w), through an exposure test to a Sodium Lauryl Sulphate (SLS) solution (2%, w/v), under occlusion.
Material and Methods : Irritant potential of a PFC gel with (5%, w/w) pumice with grain size < 63 µm was evaluated after application in the forearm of seven volunteers. In the first day, three circular sites were marked on the forearm of each volunteer and skin hydration, pH, erythema and trans-epidermal water loss were evaluated. Subsequently, the products were applied in each site, chosen randomly: gel with pumice, positive control (SLS solution (2%, w/v)) and negative control (absence of product). Then, occlusion was induced, through Finn Chambers, during 24 hours. In the second and third test day the biometric parameters listed above were again evaluated.
Results and Discussion : Regarding the hydration, pH and erythema there were no significant differences between negative control, positive control and gel, during the three days of study. In the case of trans-epidermal water loss, there was an increase in all sites 24 h after the occlusion, but in the third test day there was a decrease in the site of gel application, in contrast with the results of negative and positive controls. The trans-epidermal water loss is an important indicator of functional barrier of skin and relates directly with the irritation grade of the skin.
Conclusions : It can be concluded that the gel formulation containing pumice does not cause skin irritation because the values of trans-epidermal water loss of site corresponding to gel application did not differ significantly from the results of the negative control.
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P031 . Evaluation of ultrasound, ultrasonophoresis and homeopathic mesotherapy on Cellulite treatment

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Introduction: Cellulite is a complex architectural disorder with multifactorial etiologies that is prevalent in 98% of the women (1). Nowadays several aesthetic treatments are being used: surgical, cosmetic, physical, mechanical, and thermal. (2) Most treatments lack a substantial proof of efficacy.
Objective: The purpose of this study was to test and evaluate the efficacy of Ultrasound, Homeopathic Ultrasonophoresis, and Homeopathic Mesotherapy versus control in cellulite in a population of women from ESTSP.
Methods: Female volunteers (n=23), Caucasian, aged between 18-31 years, with BMI 19-27 kg/m2 with clinical cellulite gradation on the Cellulite Grading Scale of 1 to 4 were included in a control controlled study. Subjects were assigned in four different groups: Group I (Control, n=6), Group II (Ultrasound, (n=5), Group III (Homeopathic Ultrasonophoresis, n=6), Group IV (Homeopathic Mesotherapy, n=6). Groups II to IV were treated 3 times per week, for a total of 10 sessions. Cellulite gradation was evaluated at the beginning and the end of the trial by means of clinical photography, using a Canon IXUS 65 (6 mega pixels). For homeopathic treatments Dr. Reckeweg® Rekin® 59, 13 and 42 – Dietmed were used. The rating of perceived pain during Homeopathic Mesotherapy was evaluated by a visual analogic scale (VAS). The equipment Sonopuls 692, Enraf-Nonius was used for Ultrasound and Ultrasonophoresis treatments.
Results:The higher number of participants with improvement in cellulite graduation occurred in group II (80%), followed group III (50%) and by group IV (33%). The group in which more changes in cellulite gradation occurred was group II, 20% of the individuals improved their score in 2 points. Results were statistically different between Group I and Group II, p=0,015. During the treatments of homeopathic mesotherapy the pain diminished 1 value in VAS scale.
Discussion and Conclusion: Although all the three interventions groups were effective in the improvement of cellulite, as expected from previous works described in the literature, (2) only the ultrasound group was statistically different from control. These preliminary results point to the need of a new study using a higher number of participants and the same methodology.
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P032 . Produtos de Higiene Íntima Feminina: análise crítica da composição qualitativa

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Introdução: A utilização de produtos de higiene intima feminina visa a limpeza sem agressão genital, mantendo o pH ácido vulvovaginal. Características como o pH ou a concentração de estrogénios são condicionadas por fatores fisiológicos (gravidez, menopausa ou menstruação), podendo justificar a utilização de produtos específicos. O uso de produtos inadequados pode originar alteração de pH, mau odor, irritação e promoção de infeções por desequilíbrio da flora protetora. A utilização de detergentes suaves em fórmulas equilibradas é fundamental para obtenção de um efeito de limpeza sem agressão física e química[1].
Objetivo: Identificar e classificar produtos de higiene íntima feminina disponíveis em farmácias comunitárias portuguesas, com base nos seus diferentes constituintes e, particularmente, nos tensioativos.
Métodos: Recolha de composição qualitativa de produtos de higiene intima feminina em farmácias e distribuidores farmacêuticos. Classificação com base nos tensioativos utilizados: Classe 1 – produtos constituídos por tensioativos anfotéricos, Classe 2 – tensioativos aniónicos e Classe 3 – mistura de tensioativos (anfotéricos e aniónicos).
Resultados: Foram estudados 32 produtos: 9 foram classificados como produtos da Classe 1, destacando-se os derivados da Betaína, 10 são produtos da Classe 2, ressaltando o LaurilSulfato, e 13 pertencem à Classe 3. No que respeita a outros constituintes: 11 contêm ácido lático; 6 são isentos de perfume; 5 contêm glicina, trimetilglicina, glicerina ou betaína; 18 contêm extratos de plantas, entre os quais, *Calendula, Malva, Camomila, Aloé Vera* e *Thymus Vulgaris;* 8 contêm Bisabolol isolado; 19 alegam pH ácido; 3, pH neutro e 3 pH alcalino; 9 não contêm parabenos na sua constituição (hipoalergénicos).
Discussão/Conclusão: A maioria dos produtos contém uma mistura de tensioativos anfotéricos e aniónicos (combinação associada a um efeito detergente equilibrado) e apresenta pH ácido devido ao ácido láctico (produzido naturalmente pela flora vaginal). Formulações com pH neutro ou alcalino são mais raras e destinadas a situações mais específicas (*menopausa e pós-parto*, produtos de pH neutro; situações de acidez excessiva, produtos de pH alcalino). A maioria dos produtos é constituída por extratos de plantas com propriedades calmantes, protetoras e refrescantes.
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P033 . Transcutol-containing NLCs as potential carriers for Mometasone Furoate

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Introduction Nanostructured lipid carriers (NLC) have been tested as effective carriers for a variety of drugs for topical therapy of skin diseases. These systems combine good local tolerability, a high inclusion rate for lipophilic substances and small particle size providing close contact to the *stratum corneum*. The present work reports the first nanoencapsulation studies of MF in NLC formulations intended for dermatological use, including the influence of the type of surfactant on nanoparticle characteristics and on the release of MF from the vehicles
Materials and Methods The NLC were produced by an emulsification-solvent evaporation method whereby a pre-dispersion obtained using ultrasonication (Branson, Sonifier 250) was subsequently high-shear homogenized (Silverson, UK). Three formulations containing 0.25mg/ml of MF were prepared: A – 1% (w/v) polyvinyl alcohol (PVA); B – 3.5 % (w/v) PEG-40 hydrogenated castor oil (Tagat® CH40) and 0.6% (w/v) colate and C – 2.5% (w/v) Tagat® CH40; 0.6% (w/v) colate and 0.5% (w/v) sorbitan monolaurate (Span® 20). Two gels were prepared by dispersing hydroxylpropyl methylcellulose (HPMC), 1.5 % (w/v) in B and C NLC suspensions. Particle size analysis was performed by dynamic light scattering (Zetasizer Nano S, Malvern Instruments, UK) in NLC suspensions and by laser light scattering using a Malvern Mastersizer 2000 (Malvern Instruments, UK) coupled with a Hydro S accessory in NLC suspensions after gelification. Drug entrapment efficiency was determined indirectly in the NLC supernatants after ultrafiltration (Amicon® Ultra, Millipore), using a HPLC. *In vitro* release profiles were determined using vertical Franz diffusion cells through hydrophilic polysulfone membranes (Tuffryn®). The receptor phase contained a mixture of 1:1 water/ethanol. The concentration of MF in the receptor phase was analysed by HPLC.
Results and Discussion The NLC prepared with PVA showed the highest particle size and NLC prepared with Tagat® CH40, collate and Span® 20 the lowest particle size. The NLC B seems to be the more stable, size the PI value does not significantly changed during 30 days ($p<0.05$). Particle size analysis performed after gellification of particle suspensions with HPMC, reveals three major populations in NLC B and C, indicating the coexistence of polymer particles and NLC particles.
The MF entrapped is highest in NLC A, PVA forms a strong surface layer entrapping the drug in a more efficient way that non ionic surfactants. The drug release profiles showed that the release is higher for gels when compared to NLC suspensions. These results can be explained by the fact that polymers such as HPMC, inhibit the crystallization of the drug increasing the drug release.
Conclusion The incorporation of HPMC into NLC suspensions is a suitable strategy for the formulation of semi-solid dosage forms. Relevant characteristics depend on complex physicochemical interactions between polymer and nanoparticles.

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P034 . Evaluation of sensory properties of cosmetic formulations containing green coffee oil

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Green coffee oil (GCO) is a well-known ingredient with cosmetic properties like: keeping the skin hydration, improving the sun protection factor and maintaining the skin barrier function. Sometimes it is used as emollient. The emollients, humectants, rheology modifiers and emulsifiers are mainly responsible for modifying sensory properties in skin care formulations. Thus the aim of this study was to evaluate the influence of the addition of a considerable amount of GCO (15%) in the sensory properties of a cosmetic formulation.
The sensory panel consisted of nineteen female volunteers aged between 19 and 43 years old. Sensory attributes were assessed on a 25 cm2 defined region in the internal side of the forearm. The volunteers were instructed to evaluate the sensory properties that they felt of each formulation, instantly and 5 minutes after application.
The perception of undesirable sensory properties such as oiliness and tackiness were hardly increased. At the same time, the perception of desirable characteristics was reduced: fast absorbency, spreadability and smoothness. The perception of an oily residue on the skin was the main effect of the formulation containing GCO. The perception of moisturized and smooth skin after application of both formulations was almost the same. Based on the sensory results obtained in the study, we can conclude that the total amount of GCO used was excessive and had a negative effect on the skin.

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