



SWISS SCC – 30th Winter Seminar

in Champfèr the 29th of January
to 2nd of February 2012

Part II

The second part of the Winter Seminar started on Wednesday morning with an interesting subject of dental care. Not only skin is ageing, however also our teeth are ageing and might lose some of their power. Prevention is the key word that already helps in younger years.

Tooth erosion – A new indication in dentistry

Dr. Cornelia Scheffel
Gaba International AG

Tooth erosion is a new challenge of our time. In case of caries there are bacteria in the plaque that change sugars into acids. They attack the tooth starting beneath the dental enamel surface and erode it more and more. Erosions develop when the tooth comes into contact with acids directly at the clean tooth surface without any impact of bacteria. Once an under-saturation of tooth minerals in saliva have arrived the decomposition of the tooth surface starts. This loss of tooth enamel is irreversible. Generally acid food demineralises

tooth enamel at low calcium concentrations in the saliva. In case of a calcium oversaturation at low pH, the tooth minerals do not decompose. Acid milk products like yoghurt or fruit juices with added calcium are therefore not erosive. A further factor is the saliva. In case of an acid attack saliva protects by acid dissolution, acid neutralization (buffering), diminishing of enamel decomposition and pellicle formation.

For the diagnosis of erosions within the framework of an expert workshop 2007 (GABA Forum) a consistent evaluation system (**Basic Erosive Wear Examination**) for a clinical examination has been developed. On the one hand it is a simple tool for a dentist, but it is also the first index for a clinical documentation, coordinated by experts.

Will the erosion be diagnosed in an early stadium, a primary prevention will be sufficient. It includes concrete actions to control the eating and tooth caring habits. If by erosion the first lesions appeared additional secondary

prevention steps must be taken. The tooth enamel must be protected against further substance loss with polyvalent metal ions like titanium or zinc ions in combination with fluorides. They form relative acid resistant precipitates.

Patients with a risk for erosions must still clean their teeth as everybody else too. They need a product that protects against erosions on the one hand as also against abrasions of the acid softened enamel on the other hand. Here to an erosion tooth rinse with zinc chloride and fluoride has been developed by Elmex that reduced under strong erosive conditions the erosion up to 67% in an in situ study. During an acid attack zinc ions are implemented into the softened enamel. The enamel becomes more acid resistant. A toothpaste development with ChitoActive-technology is based on the active ingredient combination of amine fluoride, zinc chloride and chitosan. The regular use of the new toothpaste reduced enamel loss by erosion up to 47% in comparison with a sodium fluoride toothpaste.



Team work during a lecture

From dentistry into the online marketing is a big step. We learned that there are »no-limits« on the internet, however that some rules might be very useful to follow.

Some rules of the online Marketing »without« limits

Gero Bruckmann
BBF-Basel AG

The internet and mobile devices have changed the marketing environment. A few examples will be given, how since iPhone, Facebook and Twitter changed the possibilities and techniques of communication.

There are companies that use the PIM (Product Information Management) for Tablet and Laptop in combination with ERP (SAP) and Websites for the communication in their company. The marketing control with HTML5 Intranet and WebApp for Tablet and Laptop make the sales force more flexible and enables them to constantly obtain the newest data for the next customer or supplier visit.

Worldwide 1.8 Billion people use the internet. 450 Million people in Europe and 5.4 Million in Switzerland make use of it. The mobile internet is used by 1.8 Million Swiss and 1 Million of them use it daily. In March 2011 1.56 Million Swiss had a domain name. The shares of search engines were Google 89.1 %, Bing 3.5 %, Yahoo 2.5 %. 95% of 5.13 Million user use just 1% of the websites (16.000 Websites). 270.000 Swiss use the other 99% of the internet. The distribution of Social Network user in Switzerland is 2.4 Million Facebook user, 350.000 for Netlog, 150.000 for LinkedIn and 140.000 Xing user.

There are internet websites and intranet sites incl. E-Commerce, PIM, online-presentations and webcast, SEM (Search Engine Marketing), that deal with Search Engine Optimization SEO and paid services like AdWords, specialized portals, directories and email marketing like newsletters.

The SMM (Social Media Marketing) is standing for social networks like Facebook, Twitter, LinkedIn and Xing, but also for music and video portals like YouTube and Vimeo. The use of Smartphones and Tablet PC's is enriched by mobile marketing with Apps and WebApps. Besides still other tools like banner, maps, Wikipedia etc. The online marketing does not only offer chances, it contains also risks in the boundless media of the internet. Chances are provided in a company internally by optimization of communication, a more simple realization of a consistent appearance and conservation of knowledge. Externally it offers a high coverage, a fast and effective market analysis in the customer dialog for the optimization of processes

and products (customer intimacy) and hence resulting also in new business ideas and personal marketing for the establishment or optimization of the employer brand.

Limitations and risks persist first in technical constraints of e.g. existing systems. Administrative processes can hinder by limited approval of the IT-security. Resource problems and constraints could occur by local regulations and law as well as copyright laws. An only limited communication at national admissions of products disables and a loss of control specifically at the social media can occur.

It is not that long ago that small bacteria caused huge troubles and unfortunately many victims. What these bacteria are about and how they can be controlled is the subject of the next presentation.

EHEC – kleine Bakterien grosse Probleme

Jürg Schmid

Gesundheitsdepartement des Kanton St. Gallen, Abteilung Biochemie

Escherichia coli (E. coli) is an intestine bacteria. Many non pathogenic *E. coli* strains are part of each normal intestine flora of human beings. Albeit there are some strains that can cause ailments in humans. Except of the here discussed entero-haemorrhagic *E. coli* (EHEC) that were first described

in 1977, there are many other pathogenic *E. coli*. the name prefix entero-haemorrhagic (entero from ancient greek enteron – Intestine and haemorrhagic for bleeding) indicates that EHEC causes bleeding diarrhoeal diseases in men (entero-haemorrhagic colitis). They have some peculiarities increasing their pathogenic potency: they can adhere to the epithelial cells of the intestine wall via a special coating protein (Adhesin). At the same time they contain a gene for the production of a toxin that has similarity with the neurotoxic and necrotizing toxin of the bacterium *Shigella dysenteriae* and is named Shiga-Toxin or also Vero-Toxin. The cells will be destroyed by the toxin.

The main reservoir of the pathogens form ruminants, above all cattle, but also sheep and goats in which gut they are often found without causing diseases in them. The communication takes place in many different ways, mainly by direct or indirect oral intake of fecal traces. The pathogens can be taken up with food, specifically with raw meat or raw milk. An infection is also possible via contaminated potable water or bath water. A communication between humans takes place e.g. in families, crashes, retirement homes and hospitals. Less than 100 germs can be enough for an infection.

Two major outbursts were one in 1982 in the US caused by hamburg-



Beata Hurst (left), one of the organizers

ers which were not sufficiently heated and in 1996 in Japan 900 school kids got it after the consumption radish sprouts. From May 2011 a new outburst happened in Northern Germany. An increased number of cases of the haemolytic uraemic syndrome (HUS) developed into an epidemic. An infection can be symptomfree, otherwise after an incubation time of typically three to four days a gastroenteritis occurs that can develop into a entero-haemorrhagic colitis. The toxins destroy the intestine wall and the blood vessel membranes, specifically in brain and kidneys. The differently caused disease patterns are multi factorial processes.

A serious complication of a EHEC intestine infection is the haemolytic uraemic syndrome. A HUS can be traced back to a EHEC-/STEC infection in approx. 85 percent of all cases. The consequence is a massive kidney damage. They can only be treated with long term dialysis or kidney transplantation.

The excretion of the bacteria ensue typically in a time frame of five to twenty days, in children, however, it can take even several months. During this time the infection of other people is possible. A treatment with antibiotics does not lead to success, because the excretion of the bacteria is prolonged or the disease pattern exacerbates through an increased toxin formation.

Small Companies Big Markets – Tips and Tricks for a Successful Internationalisation

Thomas Foerst
OSEC

How can small and medium sized companies expand into new markets? Which internal challenges must be overcome? Can small and medium sized companies today admit not to export goods? The entrance into new markets requires professional preparation.

However, if the first step into the market is done, the export journey only begins. A good analysis of the internal resources and skills and the right ex-

port model smoothen the way to a successful expansion. How Swiss small and mediums sized companies' structure and handle this way methodically will be presented with practical examples and strategic recommendations. Thereby the network of the OSEC and its international partners will also be presented that support the build-up and expansion of international projects.

The OSEC informs, advises and accompanies Swiss and Liechtenstein SME at their international business proposals. For this purpose it connects companies, know-how supporter and private and public organisations worldwide and therefore provides powerful export business assistance. Beside the export support OSEC perceives national location promotion of Switzerland and import and investment funding in favour of selected development and transition countries. Within the scope of stabilization measures, decided by the federal government, additional funding to setup specific export platforms will be applied.

After a versatile morning session the lunch break was welcome and let the delegates take on some energy for the afternoon session, starting with branding and packaging.

The one who wants a boost must try to overcome borderlines with the right profile

Dorothea Perroud-Biehler
Profil Design & Communication GmbH

Similarities of skin to packaging in the cosmetic industry are fascinating. The skin, the interface between inside and outside, should show how humans are resp. how they would like to be. It is the same task that the packing of cosmetics have. The packaging is the interface between inside and outside, protecting shell for the product inside. The packaging can show what is inside. The inside turns to the outside. It can, like skin, transport emotions above the pure protective function, can tell stories and cause emotions. The turnover of cos-

metics in Europe increased from approx. 16.4 Billion Mark in 1997 to more than 40 Billion EUR in 2010.

The packaging must have profile, must be distinctive, shows personal character. A packaging reflects the soul of the product, but also the wishes and desire of the buyer. A packaging with profile convinces by distinctive design, language and haptic. At the customer it causes during the act of buying a sense of wellbeing in the best case.

What makes a successful packaging? A brand needs a strong identity. It requires the development of a consistent brand presence and at the same time single segments must visually and clearly differentiate.

The way to a successful packaging first needs a shape, function and fitting to the image of the brand. For a brand criteria must be fixed depending of the identity and the history. Which image should be transported, who is the target group and who are the competitors?

The brand stands ideally for far more than just a product and its company. A brand should provide sense of life, tells its own story. The product needs a clear architecture/structure of information. The image motif visualizes the content and the scent. At the same time it underpins the attractiveness and the high quality of the product.

The result is the packaging, the outside shell that provides a crucial part of the product's success. The packaging is like a business card of a product. The clear and consequent design language connects the single products to a product line. Design is the most effective medium to market a brand. It needs time and enough financial resources, to work in an optimized manner.

The product itself must keep, what it promises. The packaging can be very appealing and successful. If the consumer is disappointed by the quality of the product, he doesn't buy it a second time. Ideas and technical possibilities are nearly boundless, but one should during the development not lose sight for the final aim.



The moderating team *Maria Lueder and Fred Zuelli*

The last lecture of the second day goes into the extremes. We heard what extremophile microorganisms can do for us.

Extremophiles: Microorganisms with big potentials in pharma, biotechnology and cosmetics

Dr. John Marugg
Swissaustral Biotech SA

Most extremophiles are microorganisms that are well adapted to live in environments with extreme conditions. These include boiling or freezing temperatures, high salt or sugar concentrations, acid or alkaline pH values, high pressure, low water availability and high radiation among others. Typical environments where extremophiles can be isolated from are Antarctic deserts, permanent glacier ice-sediment mixtures, boiling mud pools, geothermal vents, thermal springs, desiccated dry valleys, saline lakes and acid fumaroles. To survive these harsh conditions, extremophiles have developed specific and novel metabolic tools, such as highly efficient enzymes or ultrastable biomolecules.

Application of extremophiles range from environmental uses, such as bioremediation, to industrial processes, including paper industry, mining, food processing, pharmaceuticals and, last but not least, cosmetics. At molecular (research) level, applications range from light sensing to molecular genetics. For certain industri-

al applications, there is a great interest in efficient enzymes that are stable and able to catalyze their specific reaction under difficult conditions of for example, high temperatures, high pH levels, presence of bleach chemicals, and chelating agents. On the other hand there is a growing demand from manufacturers for enzymes that are highly active at ambient or refrigerated conditions, such as food processors (whose products often require cold temperatures to avoid spoilage), or producers of cold-wash laundry detergents.

The large potential for extremophile applications in cosmetics has only recently been recognized with the discovery that osmolytes, like ectoin, exhibit novel and beneficial dermatological effects. It allows making further projections on the utilisation of other natural stress-protection biocompounds produced by extremophiles, that provide unique biological defense mechanisms against a range of harmful environmental influences, like UV-radiation, dehydration, or strong temperature fluctuations. Particularly, enzymes with antioxidant properties (superoxide dismutases and catalases) produced from UV-resistant extremophiles may prove highly effective. Alternatively, freeze-resistant extremophiles may be applied for skin care products aimed at low temperatures, as they contain a whole range of protective biocom-

pounds (antioxidants, osmolytes, cold stress resistance properties) within their cells. The potential of extremophiles for cosmetics and skin care is still largely untapped, and based on the initial studies and applications we foresee a great future in a growing market. The philosophy of Swissaustral Biotech is to develop distinctive and innovative solutions for industrial applications, providing novel technologies to improve and optimize bioprocesses based on specialized enzymes and novel biocompounds derived from extremophiles. The last day of the seminar give the word to three raw material manufacturers and their specialties.

Innovative approach in Hair Care: New mechanisms of action and perspectives for new hair care applications

Eric Calmon
Lucas Meyer Cosmetics

Graying and hair loss are obvious signs of human aging. Although causes of hair loss and graying are still not yet fully understood, it can be the result of several factors. Major causes of hair loss in genetically predisposed individuals include hormonal dysfunction, loss of extracellular matrix (ECM) proteins in the follicular bed, and localized micro-inflammation. Few options are yet available to correct the problem and, to our knowledge, none that simultaneously addresses multiple facets of this challenging question. The objective of our work is the study of a specific and unique active, CAPIXYL™, in eliciting biological responses in hair loss mechanisms. This active is composed of a bio-mimetic peptide derived from a signal peptide which has potent tissue protective properties and stimulates tissue renewal for a better hair anchoring. The second ingredient is Biochanin A known to be an effective inhibitor of 5 α -reductase type I & II activity. The 5 α -reductase is known to modulate the conversion of testosterone into DHT causing hair follicle miniaturization.

The peptide stimulates extracellular matrix proteins (type III and VII colla-

gen, laminin) favoring a better hair anchoring for a direct effect on hair follicle integrity. On the other hand, biochanin A found in the red clover extract inhibits the 5- α reductase activity responsible for androgenic alopecia. It was demonstrated that hair follicle growth is stimulated by 47% in comparison with Minoxidil after 7 days culture.

The efficacy of CAPIXYL™ is based on the combined action of its two ingredients, allowing direct action on DHT preventing the hair cycle to shorten and hair follicle miniaturization, improving the ECM proteins in dermal papilla surrounding hair papilla for better anchoring and promoting increase of follicle size.

Yet little known about the causes of hair graying, several recent papers provide compelling evidence that the graying is due to incomplete melanocytes cells maintenance and resulting poor hair follicle pigmentation. We put in evidence that a biomimetic peptide, Melitane®, regulates the melanin synthesis of hair bulb and also favors melanin transfer from melanocytes into keratinocytes that will constitute hair shaft. Moreover, the active demonstrated outstanding results in ex vivo experiments on human hair, decreasing the number of white and low pigmented cells and increases significantly the number of moderate and highly pigmented cells in hair bulbs.

Both active ingredients offer new innovative ways in modulating ageing of hair for cosmetic industry.

Plant search at all cost – between Ethic, Morality and Legal Obligations

Regula Stäheli
Cosmetochem AG

Long before Asterix und Obelix – good known users of herbal magic cure – extracts and infusions of medicinal herbs were produced and used as medicines in different cultures worldwide and also in cosmetics. Depending of the ingredients the use concentrations and claim possibilities are very versatile. Plant extracts are used e.g. as skin soothing, cleansing, moisturizing, anti-inflammatory or Anti-Aging actives

The cosmetic market is always focused to satisfy the needs of the consumers. Beside classically used plants there is also the use of exotic plant an unsurpassed marketing tool to provide cosmetic products with unique selling arguments. In order to deliver this kind of plants it needs a good network of suppliers that provide well documented, qualitatively high raw materials in sufficient quantity. Since plants are offered worldwide it is of high importance to conduct respective clarifications where the origin of the plant materials is located and how it was supplied.

It must be taken into account that not every arbitrary plant can be worked

into a plant extract. There are international legal obligations to take care of like the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES¹, the IUNC Red List² and soon also the Nagoya-Protocol³. Convention on International Trade in Endangered Species of Wild Fauna and Flora that like the CITES, aim to control the international trade of wild living and wild growing endangered species in a way that they will not extirpated. In the CITES database are listed those endangered plants and animals which fall under this trade protection. These plants may only be accepted if they have a trade certificate or are coming from cultivation.

It is not enough anymore to produce plant products from biological cultivation. Furthermore it is paid attention whether further environmental and social aspects are connected. The whole added value is indulged with a bigger importance. An example of further environmental aspects is the RSPO⁴ requirements. The environment difficulty developed by the extensive use of palm oil, palm kernel oil and its derivatives will be limited by the positioned palm oil politics und a sustainable added value.

The probably best known example in the social aspects is for sure Fair Trade. For Fair Trade products a sales price above the world market price is set to allow the producer to earn a



Participants in the seminar room



Group photo of all participants

fair and reliable pay. Fair Trade organizations increasingly include environmental aspects. At a multitude of organizations in the area of Fair Trade and the natural cosmetics sector trust is an important decision factor. We found partners in Ecocert and the Outback Spirit Foundation whom we trust. The Outback Spirit Foundation in Australia campaign for the minority of the Aborigines and takes care to preserve their culture.

Sensory – Research on the borderlines of instrumental measurement engineering

Dr. Susann Wiechers
Evonik Industries AG

When it comes to sensory evaluation of cosmetics or additives for this market, the human being is the center of all efforts. Pure physico-chemical data can help to understand how an additive can influence the sensory properties of a product, but often enough people can sense more complex differences. No matter how good one or several notional machines will imitate the human senses of smelling, hearing, seeing, tasting and touching – people will and have to be the compass to name and calibrate all the properties, scores and data.

In the moment a skilled and well trained person is more reliable and flexible than any machine out there. Tools are often limited to a certain range of sensory properties. Even if

the measurements result in different data sets for different samples – the human being still has to give actual meaning to them.

At Evonik, both paths are followed. Well aware, that sensory panels and instrumental evaluation do not exclude each other but can be used side by side in a fruitful way. The use of pre-screening tools to save resources of sensory panels is just one way. Visual evaluation of skin surface properties is another good example for the application of optical instruments.

Touch however is one of the most challenging senses to mimic. One way is to set up machines that copy the human sensory evaluation with certain deformations of e.g. rubbing, tipping or scratching. Possible drawbacks are data that cannot be correlated with the sensory panel vocabulary. Another route is the use of established tools like rheometers, where the applied forces and geometries are well known and the challenge is to choose a routine that reflects the occurrences during a sensory panel.

The final short presentation is a just a couple of questions raising the subject of Border controls.

Border-Controls

Birgit Hämel
S&D Chesham GmbH

What should we control?
Ourselves, or whom or what?

How should we do that, by composition, by control or by management? What must we know about it? And what should it be good for? Good questions!?

With some philosophical questions the 30th Winter Seminar closed. The week was well filled with a number of different subjects, taking science and marketing for cosmetics into account. The time between the lectures was well taken for discussions between delegates and speakers. The good weather allowed us to relax in the cold and fresh winter air during lunch and caused a lot of good spirit. Did we cause your »appetite« to participate the next seminar here are the dates and the subject for the next year's event:

January 27th – February 1st, 2013
The Engadin Cosmetic Marathon

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