

*Pregnancy brings its own problems; following are some ideas for cosmetic products during and after pregnancy*

- **Increased sensitivity to some ingredients, redness and itching, dull skin and hair.**

For showers and bath additives it would be sensible to use mild surfactants such as sarcosinates, alkyl polyglycosides and acyl lactates. Plantapon LGC Sorb, based on sodium lauryl glucose carboxylate and lauryl glucoside from Cognis is one suggestion. The use of shower oils keeps the skin conditioned and moisturised and helps prevent dryness and itching often associated with pregnancy. Plantapon LC7, INCI: Laureth-7 citrate, is exceptionally mild and has moisturising properties. It can solubilise up to one third of its concentration of mineral oil or castor oil and may also be used to formulate high oil content shampoos for dry hair, which is another condition often associated with pregnancy.

Sensitive skin and its associated redness and itching may benefit from the inclusion of alpha-bisabolol or of chamomile in products for topical application. Other ingredients of interest are Lactobacillus/theoboma cacao (cocoa) ferment extract (Active Concepts) which reduces inflammation and it may also be used in products to treat cellulite. Also from Active Concepts is AC Volumising Complex based on rice amino acids and fermented dates to add volume and curl retention to hair in poor condition.

Increased blood flow to the skin may result in a rise in skin temperature. Slow release cooling agents like Questice Plus (Quest), Cryolidone (Solabia), Frescolat (Symrise), and Cooling Agent 10 (Takasago) may be used in various products to alleviate these symptoms. One suggestion is to include a cooling agent in a spray based on PIT technology to deliver a fine moisturising lotion to the body.

### **Stretch Marks**

Starting in the 2<sup>nd</sup> trimester stretch marks are a frequent legacy of pregnancy but if care is taken with diet and exercise and products applied to reduce the damage to collagen and the dermis its effects may be minimised. They are primarily due to the breakdown of collagen in the dermal layers under the influence of mechanical stress and of collagenase resulting from the increased levels of oestrogen in the body. Thus physical massage with enriched emollients combined with active ingredients to protect collagen would appear the optimum combination.

Traditionally Monoi de Tahiti has been used for this purpose by the ladies of French Polynesia. Other ideas include Zenibee cream from Zenitech, which is a combination of cera alba (beeswax) with octyldodecanol that may be used to provide very rich emolliency. Also from Zenitech are a variety of butters including raspberry, cranberry and mango butter. These can be used in either a w/o or o/w emulsions: Arlancel P135, INCI: PEG-30

Dipolyhydroxystearate, from Uniqema is a suitable w/o emulsifier and a glucoside liquid crystal-forming emulsifier (see SPC November 2005) would maximise the effects in an o/w type. Croda, A&E Connock and Cognis also provide numerous butters and natural oils

including hemp oil, rose hip oil, avocado butter, shea butter and various products from the rain forests of the Amazon, Borneo and Africa.

Active ingredients can then be added: a number of herbal extracts are recommended including Herbala centalla (Cognis), Alpaflor imperial (Pentapharm), and pomegranate sterols (Optima Chemicals). Marine extracts are also suggested: Lanablue (Atrium) is an extract of cyanophyceae, a blue green algae from North America with a high content of group B vitamins, amino acids and specific pigments. Aosaine or combinations of Aosaine with Kelpadelie from Biotechmarine are also of interest.

Returning to the islands of the Pacific, Red Alga Gel (Sinerga) is a purified and recombined fractionation of Hawaiian sea algae consisting of long chain polysaccharides that form a hydrogen-bonded lattice to stabilize emulsions, proteins, liquid crystals and liposomes. It has film-forming and moisturising properties and provides a smooth, silky feel to the skin. Sinerga also recommends Trealix, a combination of trehalose and vegetable-derived amino acids for the relief of dry itchy skin and its deep moisturising properties.

MDI Complex (Atrium) is a mixture of glycosaminoglycans which inhibit the matrix metalloproteinase (MMP) enzymes that degrade and destroy the skin's collagen network. Emblica (Merck) is an extract from *Phyllanthus emblica* that is claimed to inhibit the production of collagenase and it also has chelating and antioxidant properties.

Symglucan (Symrise) is refined beta-glucan to produce a highly active soluble fraction clinically shown to penetrate the skin and help reduce the visible signs of aging. It is said to stimulate fibroblast growth and collagen synthesis, thus providing healing and reducing scar coloration. Hydroxyprolisilane C (Exsymol) is an organo-modified silicone with cell renewal and regeneration properties recommended specifically for the prevention and reduction of stretch marks.

Many other products are useful during and after pregnancy. Readers are directed at recent articles in SPC describing formulating with natural ingredients (October 2005); liquid crystal technology (November 2005); hair conditioning (November 2005), and body firming and anti-cellulite products (March ? 2006), which may also be of interest.