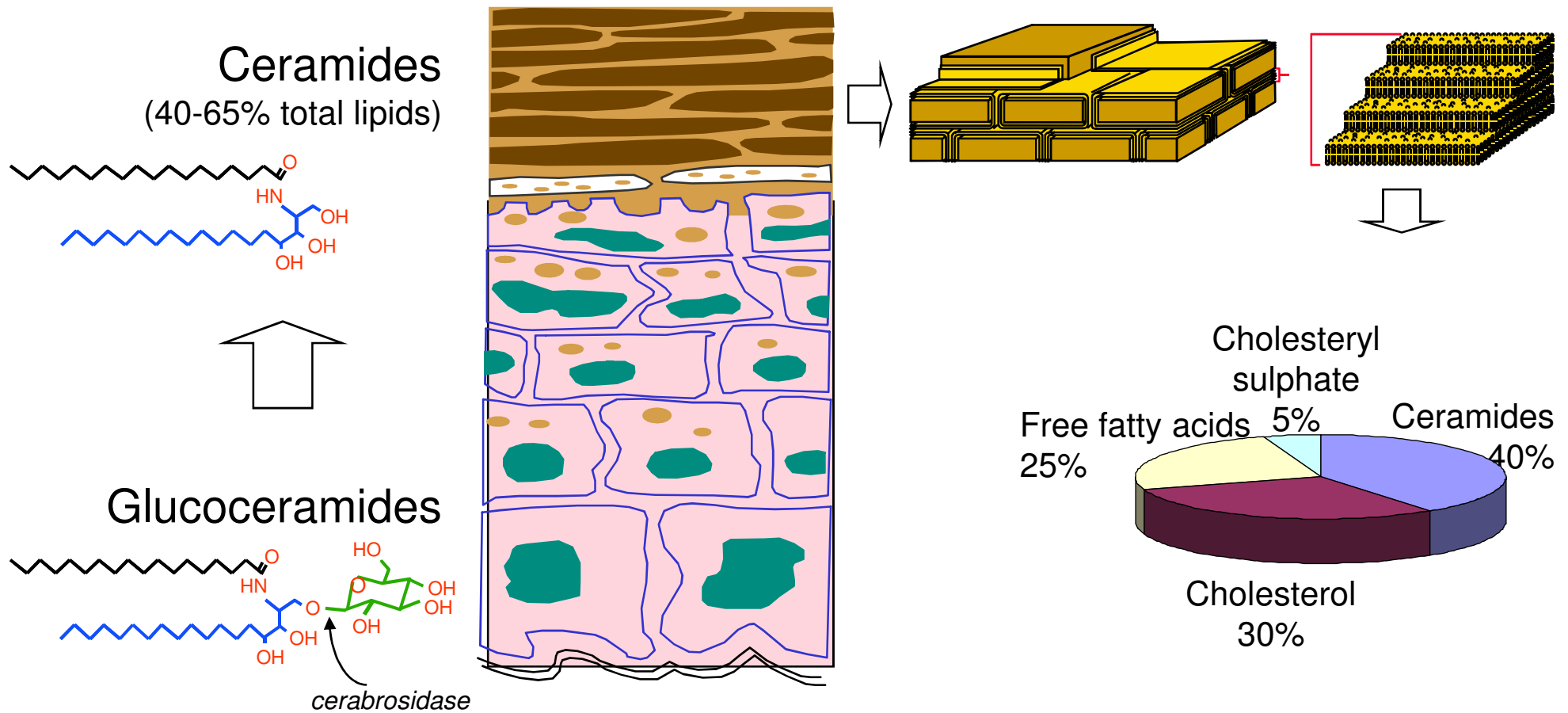
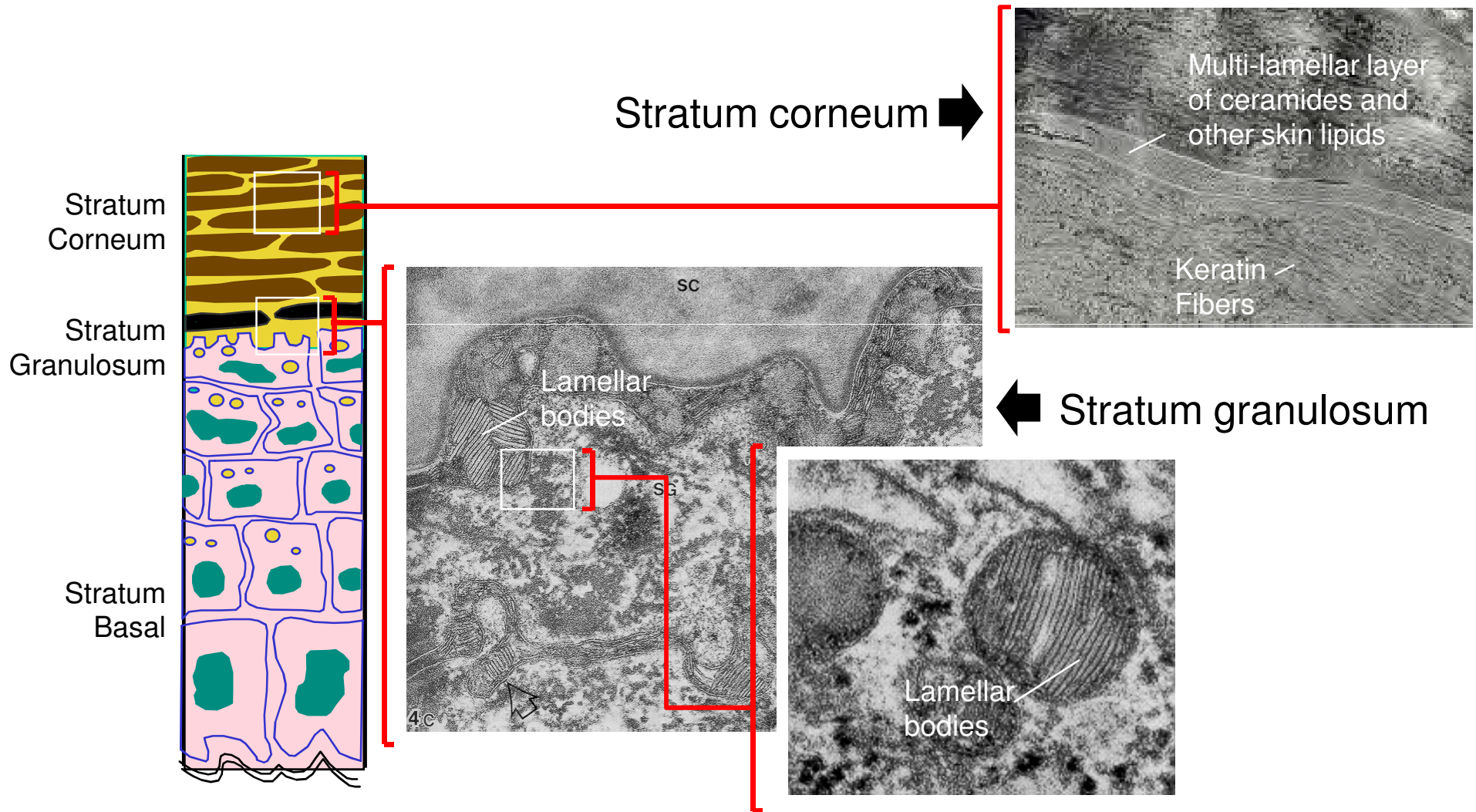


The lipid barrier of the Stratum Corneum

Stratum Corneum:
the "Bricks and Mortar" model



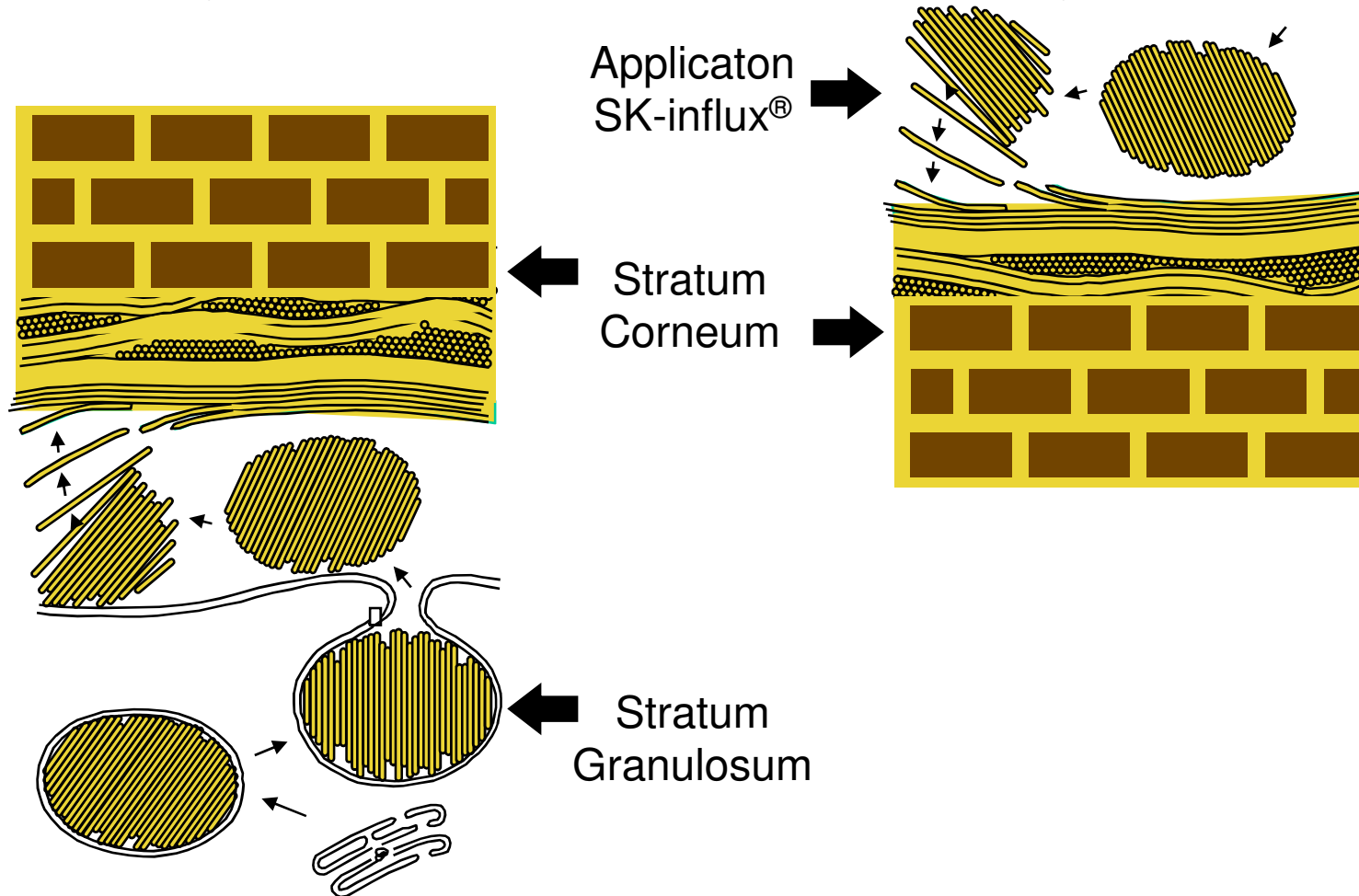
The formation of the lipid barrier



SK-influx® mimics the natural formation of the lipid barrier

Formation of the lipid barrier by the skin

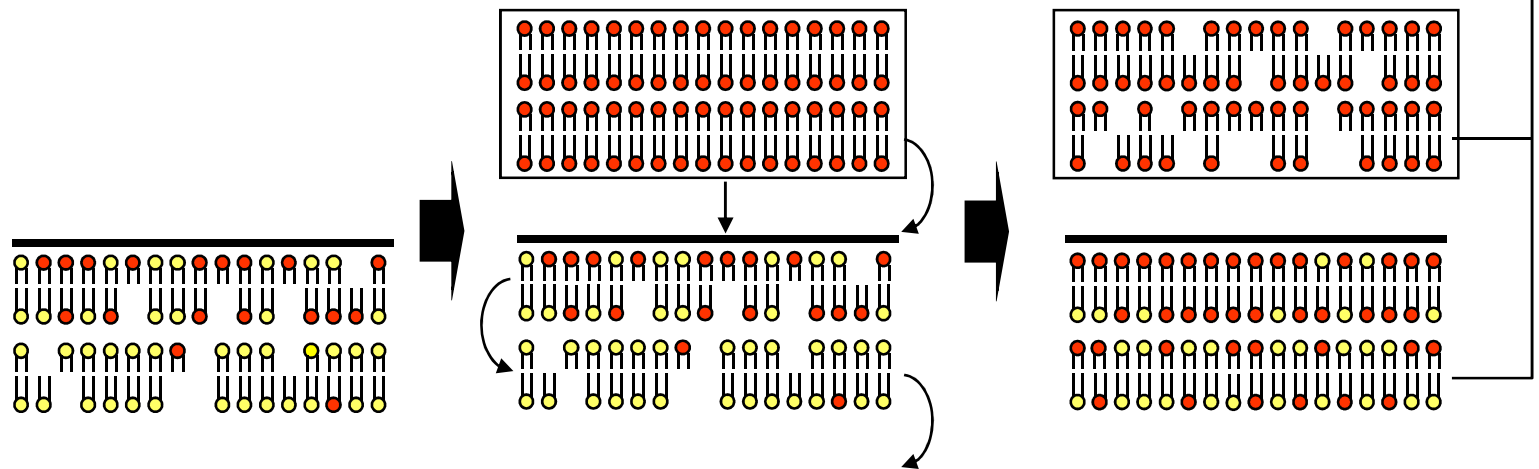
Restoration of the lipid barrier by SK-influx®



Why is SK-influx[®] so efficient ?

SK-influx[®]
formulation

Lipid barrier in
the Stratum
Corneum



Characteristics of SK-influx®

Composition SK-influx®

Lipid concentrate	6.0 %
Water	q.s. 100 %
Lactylate	10 %
Carbomer	0.3 %
Xanthan gum	0.3 %
Methyl paraben	0.3 %
Propyl paraben	0.2 %

1.5 %	Ceramide complex	
	- Ceramide I	0.001%
	- Ceramide III	0.5%
	- Ceramide IIIB	0.5%
0.5 %	- Ceramide VI	0.5%
	Cholesterol	
±3.5 %	Free fatty acid	
0.5%	Phytosphingosine	

INCI name:

Ceramide 3; Ceramide 6 II; Ceramide 1; Phytosphingosine; Cholesterol; Sodium Lauroyl Lactylate; Carbomer; Xanthan Gum

Physical properties

- Aqueous system
- Multi lamellar layers
- Liquid Crystalline form

Notes

- Ceramides, cholesterol and fatty acids act synergistically
- According to scientific literature, Ceramides 1, 3 and 6 are specifically required to restore damaged and sensitive skin

Designed for instant application

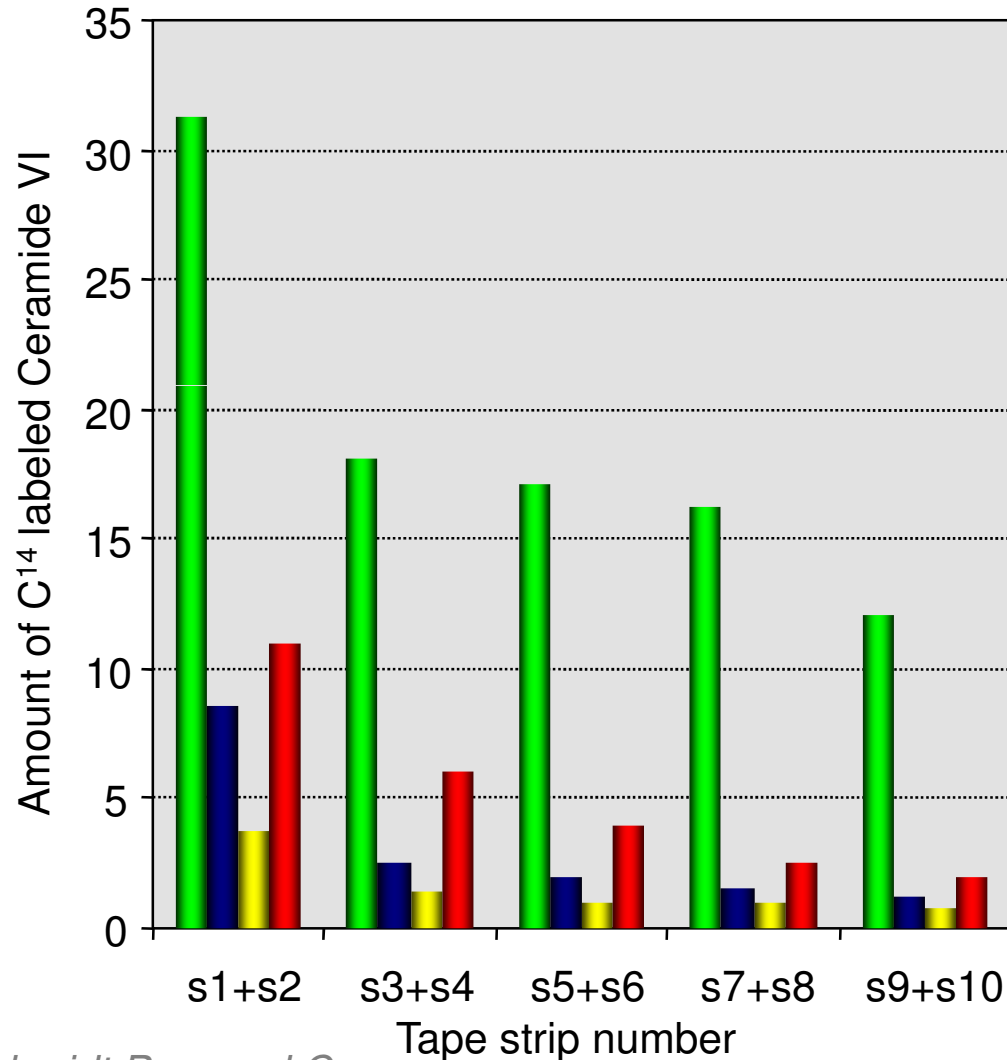
Typical dosages of SK-influx®

Normal skin	1.5 - 5 %
Dry / Sensitive skin	3 - 5 %
Aging skin	3 - 5 %
Skin repair / protection	3 - 15 %

- Suitable for a wide range of formulations
- SK-influx should be added to the water phase before the homogenisation step
- Cationic emulsifier systems should be avoided

Uptake of Ceramide by the skin

Ex-vivo study



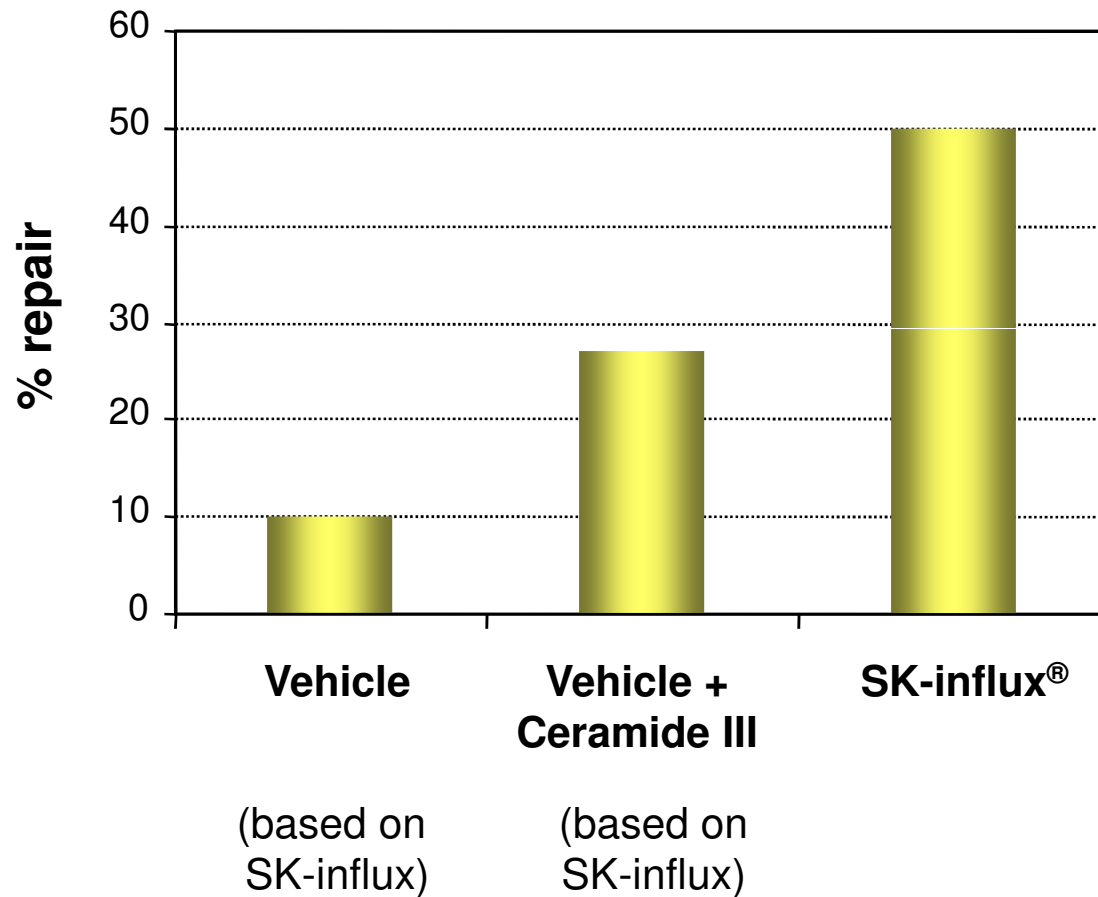
SK-influx[®] increases the bioavailability of Ceramide by more than 38 %, compared to O/W emulsion

3x50 µl of 4 different formulations with 0.5% of C¹⁴ labeled Ceramide VI are applied on isolated stratum corneum

- Propyleneglycol/ ethanol
- O/W polyglyceryl ester
- O/W ethoxylated sorbitan ester
- SK-influx like formulation

Repair of damaged barrier function

Ex-vivo study



Addition of Cholesterol and Free fatty acids to Ceramides will have a synergistic effect on the barrier repair of the skin

- Ex-vivo skin treated with acetone
- TEWL measured after 20 hours

Why is Sk-influx essential for aging skin ?

Age	Ceramide level
<u>Hands</u>	
21 - 30 years	100 %
31 - 40 years	78 %
41 - 50 years	63 %
<u>Face</u>	
21 - 30 years	100 %
31 - 40 years	62 %
41 - 50 years	37 %

N.B. Relative levels of Ceramides 1 through 6 do not change.

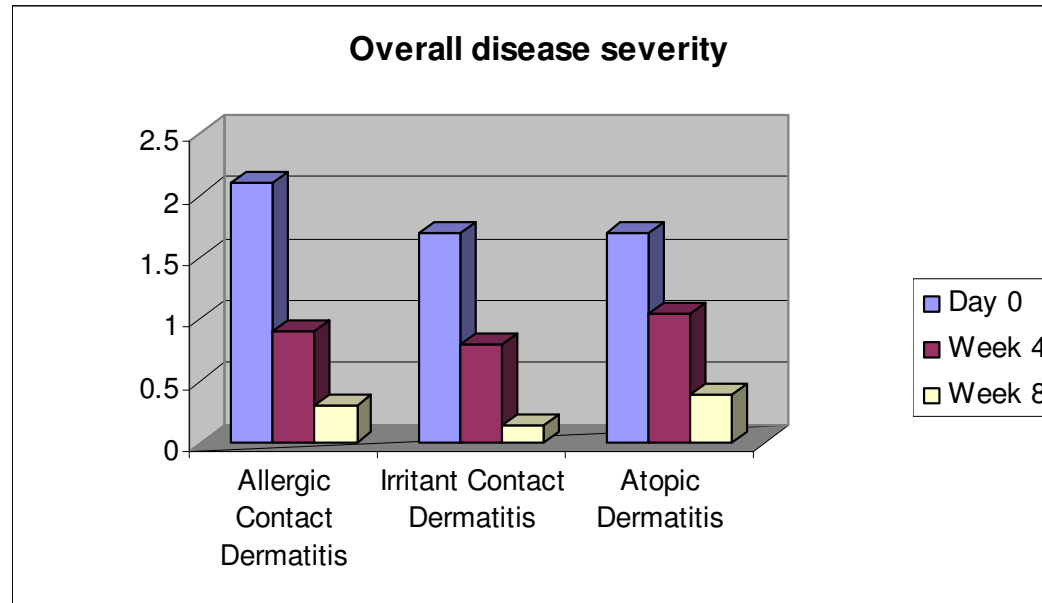
Source: A.V. Rawlings et al. in Biocosmetics-Skin aging, IFSCC, vol. I, 31-45 (1993).

Why is Sk-influx essential for dry and sensitive skin conditions ?

<i>Diseases</i>	<i>Ceramides missing in the skin</i>
Psoriasis	Ceramide 1 ↓, Ceramide 3 ↓, Ceramide 6 ↓ <i>(Motta S et al., Arch. Dermatol. 130, 452 - 456 (1994))</i>
Ichthyosis	Ceramide 1 ↓, Ceramide 6 ↓ <i>(Paige DG et al., Proc. Br. Ass. Dermatol. 25 (1993))</i>
Acne (vulgaris)	Linoleate in Ceramide 1 ↓ (Ceramide 1 through 6 ↓) <i>(Pershho K et al., J. Invest. Dermatol. 90, 350 - 353 (1988))</i>
Atopic dermatitis	Ceramide 3 and 6 ↓ <i>(Di Nardo A et al., Acta Dermatol. Venereol. 78, 27 - 30 (1998))</i>
Surfactant-induced dermatitis	Ceramide 3 ↓ <i>(Di Nardo A et al., Contact Dermatitis 35, 86 - 91 (1996))</i>

Clinical evaluation- Multi center study

Part 1

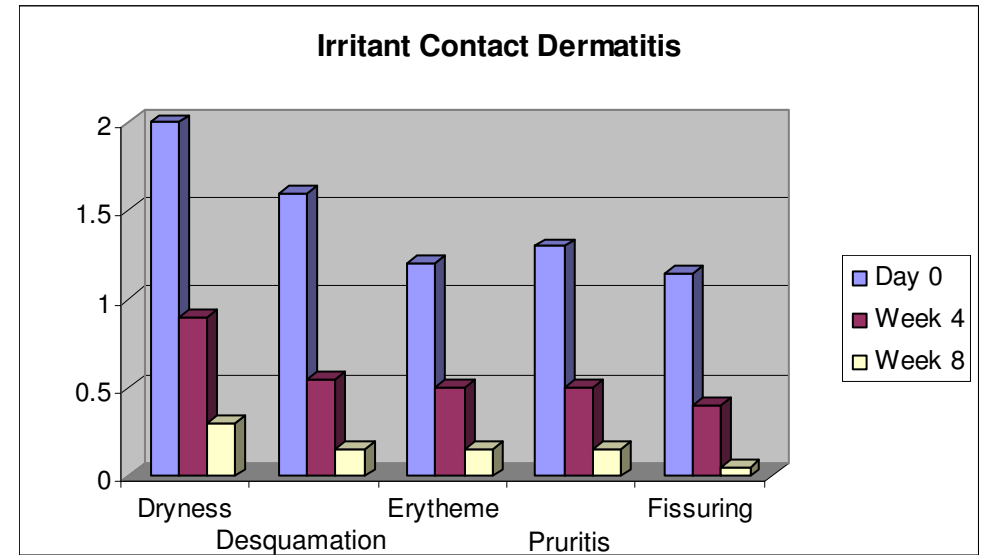
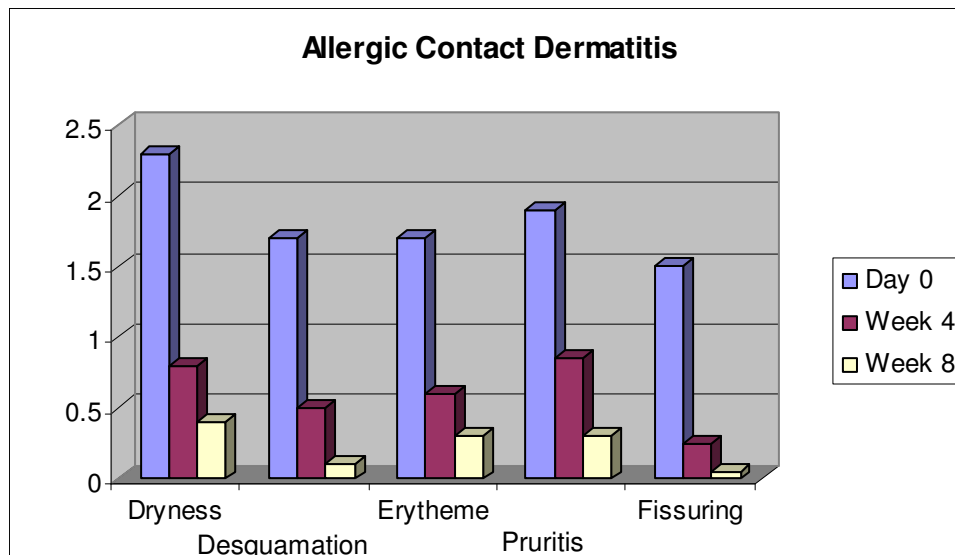


- **Number of patients:** Allergic Contact Dermatitis = 35, Irritant Contact Dermatitis = 123, Atopic Dermatitis = 24
- **Product:** W/O vehicle containing Ceramide 3, cholesterol and fatty acids in a nanoparticles technology.
- **Application of the product:** 1-2 times a day for maximum 8 weeks
- **Evaluation of the symptoms:** Randomly by dermatologists at day 0, week 4 and week 8
- **Nature of the symptoms:** Dryness, desquamation, erythema, pruritis, fissuring and overall severity
- **Rating scale:** 0=none; 1=mild; 2=moderate; 3=severe

E. Berardesca et al., Contact Dermatitis, 2001, 45, 280-285. Evaluation of efficacy of a skin lipid mixture in patients with irritant contact dermatitis, allergic contact dermatitis or atopic dermatitis: a multicenter study

Clinical evaluation- Multi center study

Part 2

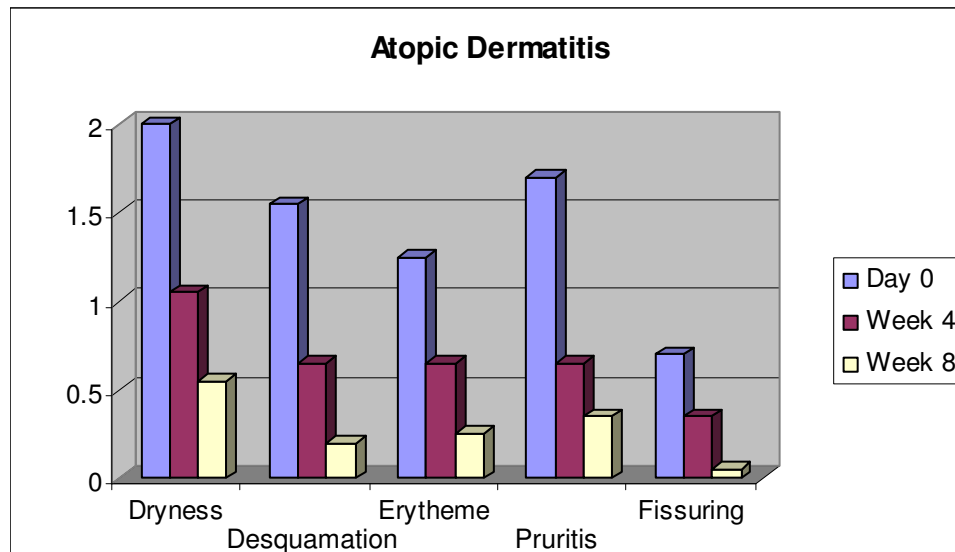


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Clinical evaluation- Multi center study

Part 3



“Balanced lipid mixtures [Ceramide, cholesterol, fatty acids] are effective in improving the barrier properties and the clinical condition of the skin in contact dermatitis.”

- **Number of patients:** Allergic Contact Dermatitis = 35, Irritant Contact Dermatitis = 123, Atopic Dermatitis = 24
- **Product:** W/O vehicle containing Ceramide 3, cholesterol and fatty acids in a nanoparticles technology.
- **Application of the product:** 1-2 times a day for maximum 8 weeks
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E. Berardesca et al., Contact Dermatitis, 2001, 45, 280-285. Evaluation of efficacy of a skin lipid mixture in patients with irritant contact dermatitis, allergic contact dermatitis or atopic dermatitis: a multicenter study

Advantages SK-influx®

- The best available lipid mix:
 - Ceramides 1+3+6, cholesterol, fatty acids
 - Phytosphingosine (anti-inflammation and anti-microbial properties)
- Resembles the structure of the lipid barrier in the skin
 - multi-lamellar
 - liquid crystalline
- Designed to allow uptake of Ceramides by the skin
- Ideal for dry, sensitive and aging skin