



**SK-INFLUX® /
SK-INFLUX® V**

**Skin identical lipid concentrates
for an improved skin barrier
function ideal for dry, sensitive
and aging skin**

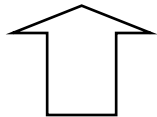
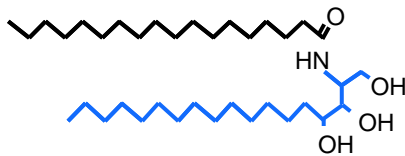


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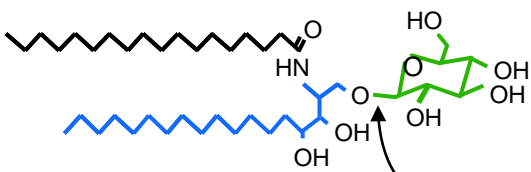
The lipid barrier of the Stratum Corneum

Stratum Corneum: the "Bricks and Mortar" model

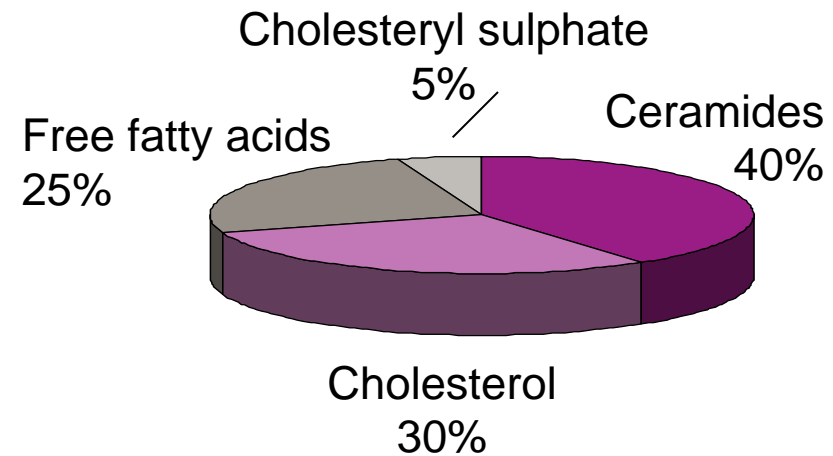
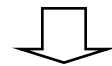
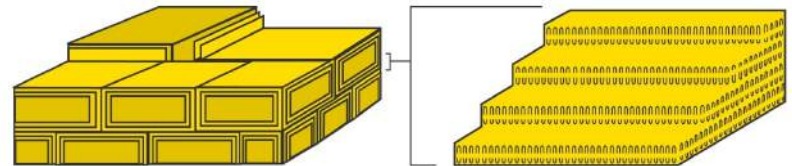
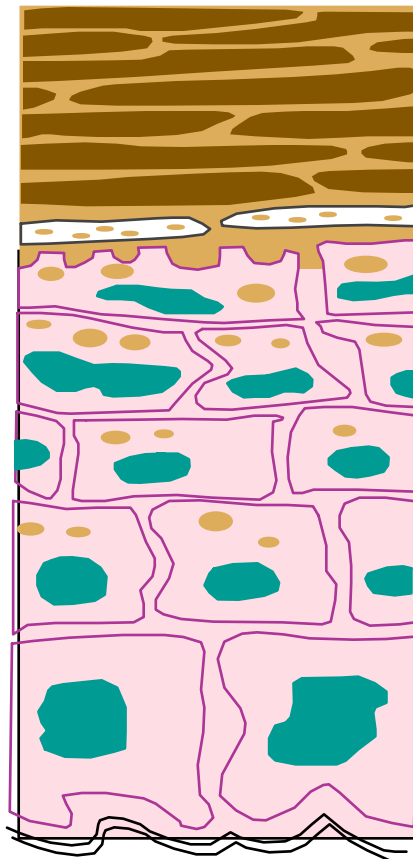
Ceramides
(40-65% total lipids)



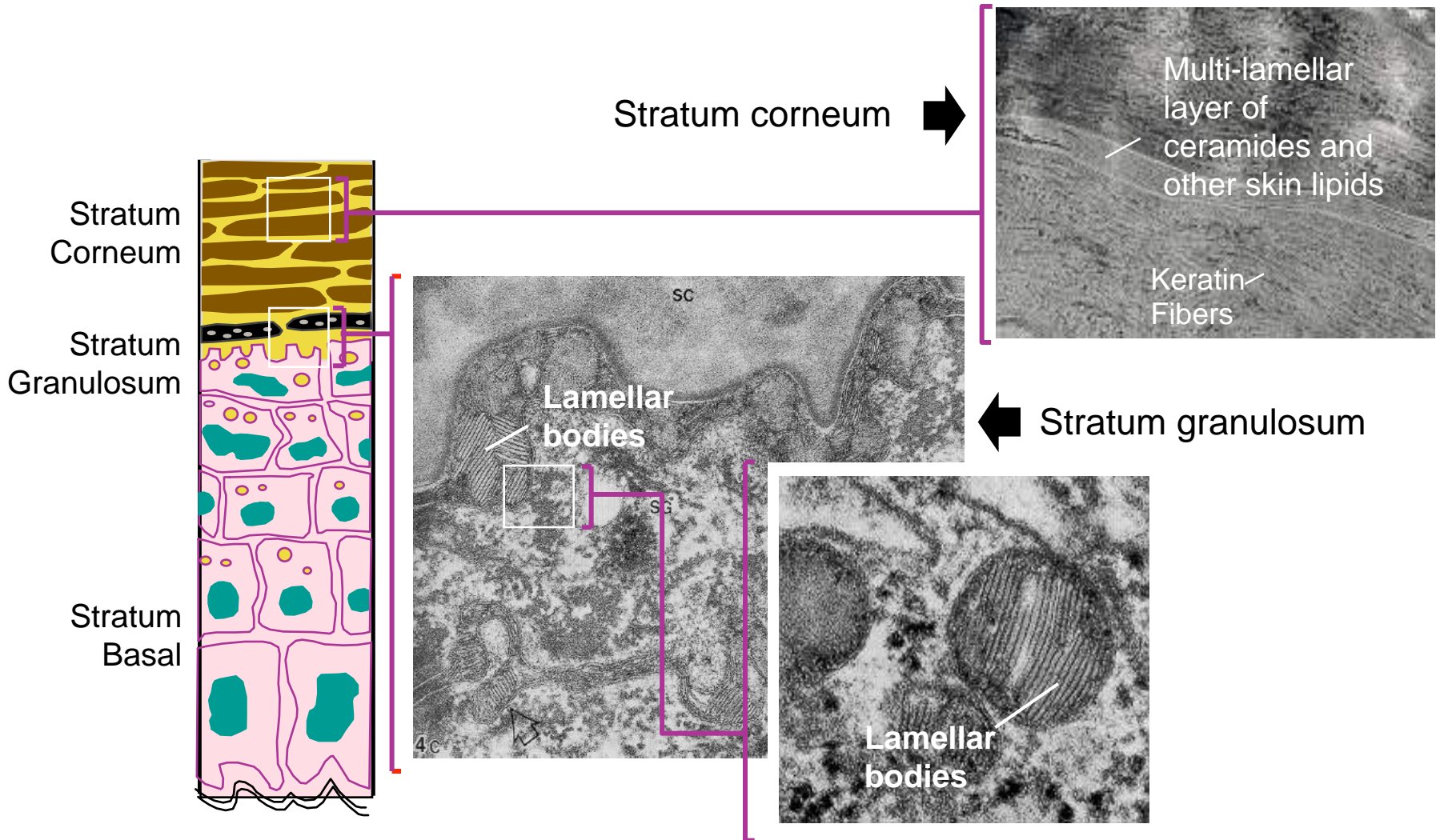
Glucoceramides



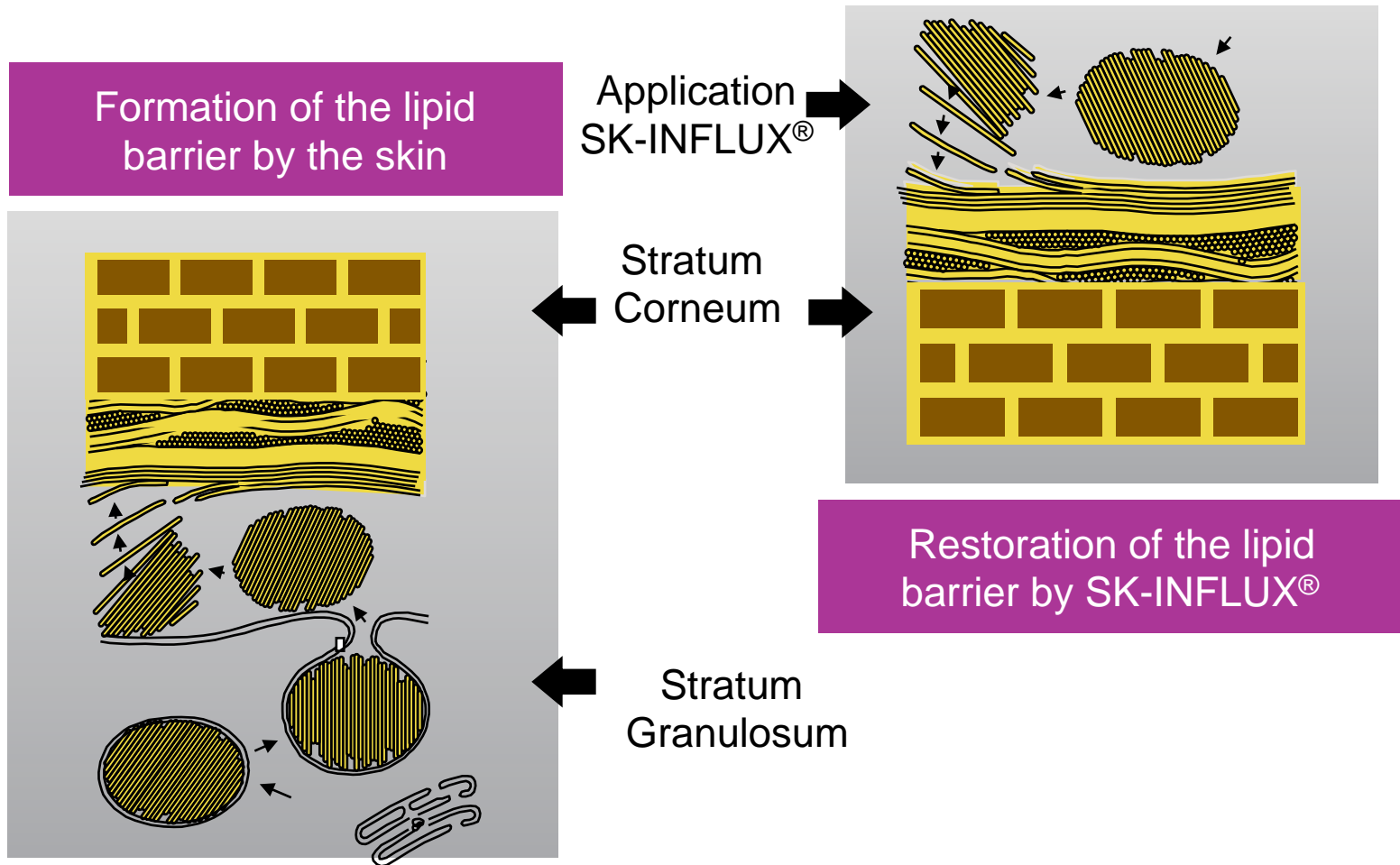
cerabrosidase



The formation of the lipid barrier



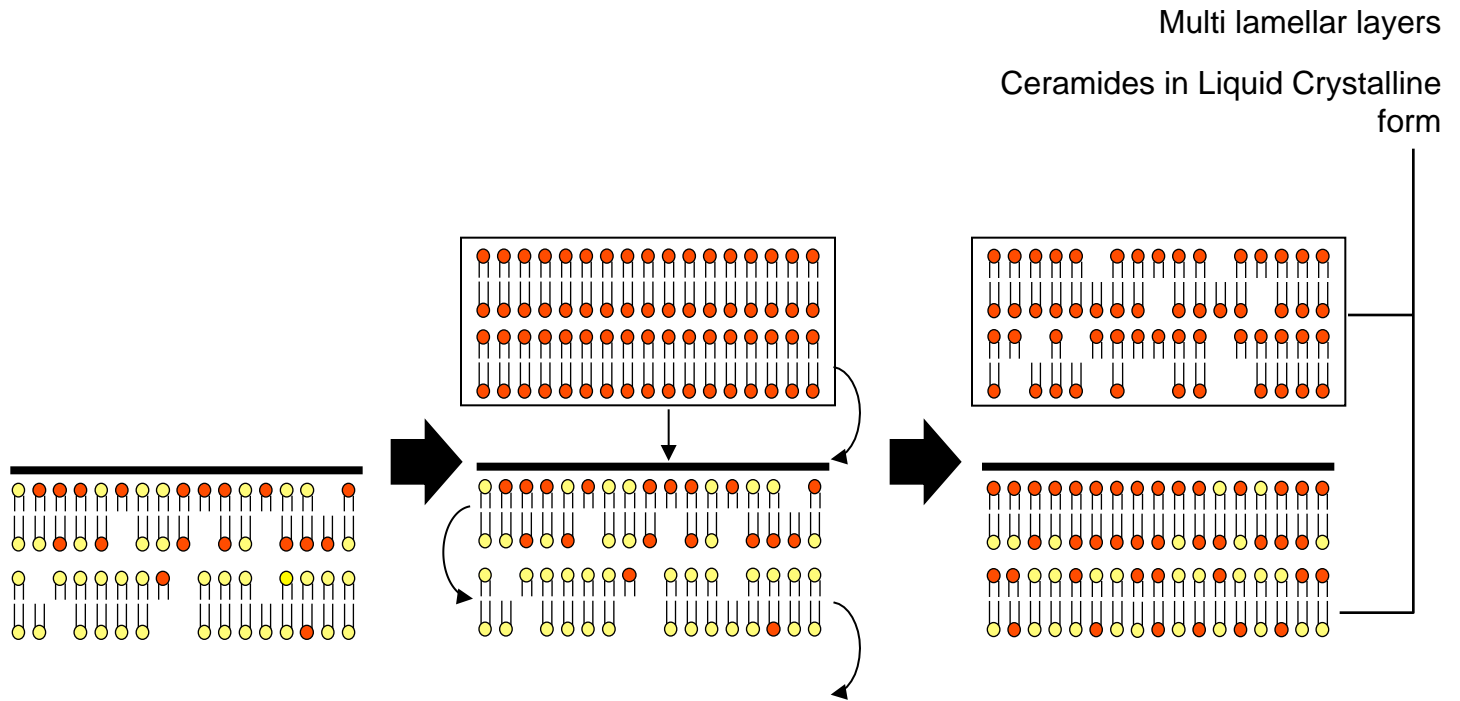
SK-INFLUX[®] mimics the natural formation of the lipid barrier



Why is SK-INFLUX[®] so efficient?

SK-INFLUX[®]
formulation

Lipid barrier in
the Stratum
Corneum



Topical application of SK-INFLUX[®]
reinforces the natural lipid barrier of dry,
sensitive or aging skin against
moisture loss and external challenges.

Composition and characteristics of SK-INFLUX®



SK-INFLUX®

Lipid concentrate

6.0%

Water	q.s.100%
Lactylate	10%
Carbomer	0.3%
Xanthan gum	0.3%
Methylparaben	0.3%
Propylparaben	0.2%

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

INCI name: Ceramide NP; Ceramide AP; Ceramide EOP; Phytosphingosine; Cholesterol; Sodium Lauroyl Lactylate; Carbomer; Xanthan Gum.

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

The new paraben-free version of SK-INFLUX® with non-animal cholesterol (vegetal-derived, semi-synthetic)

Composition SK-INFLUX® V

Lipid concentrate	6.0%
Water	q.s.100%
Lactylate	10%
Carbomer	0.3%
Xanthan gum	0.3%
Phenoxyethanol	0.9%
Ethylhexylglycerin	0.3%

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

INCI name (same as SK-INFLUX®):

Ceramide NP; Ceramide AP; Ceramide EOP; Phytosphingosine; Cholesterol; Sodium Lauroyl Lactylate; Carbomer; Xanthan Gum.

Designed for instant application

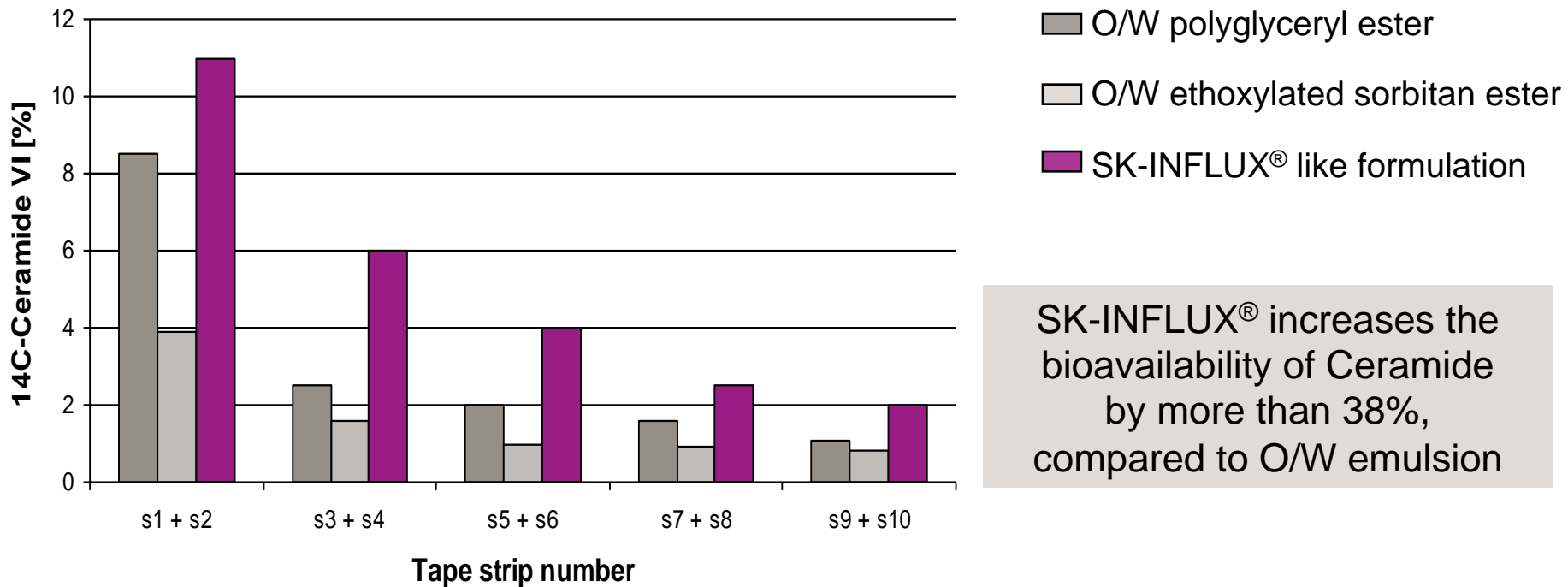
Typical dosages of SK-INFLUX®	
Normal skin	1.5 - 5%
Dry / Sensitive skin	3 - 5%
Aging skin	3 - 5%
Skin repair / protection	3 - 5%

- Suitable for a wide range of formulations
- SK-INFLUX® should be added to the water phase before the homogenization step

Uptake of Ceramide by the skin

Ex vivo study

3 x 50 μ l of 3 different formulations
with 0.5% of C14 labeled Ceramide VI
are applied on isolated stratum corneum



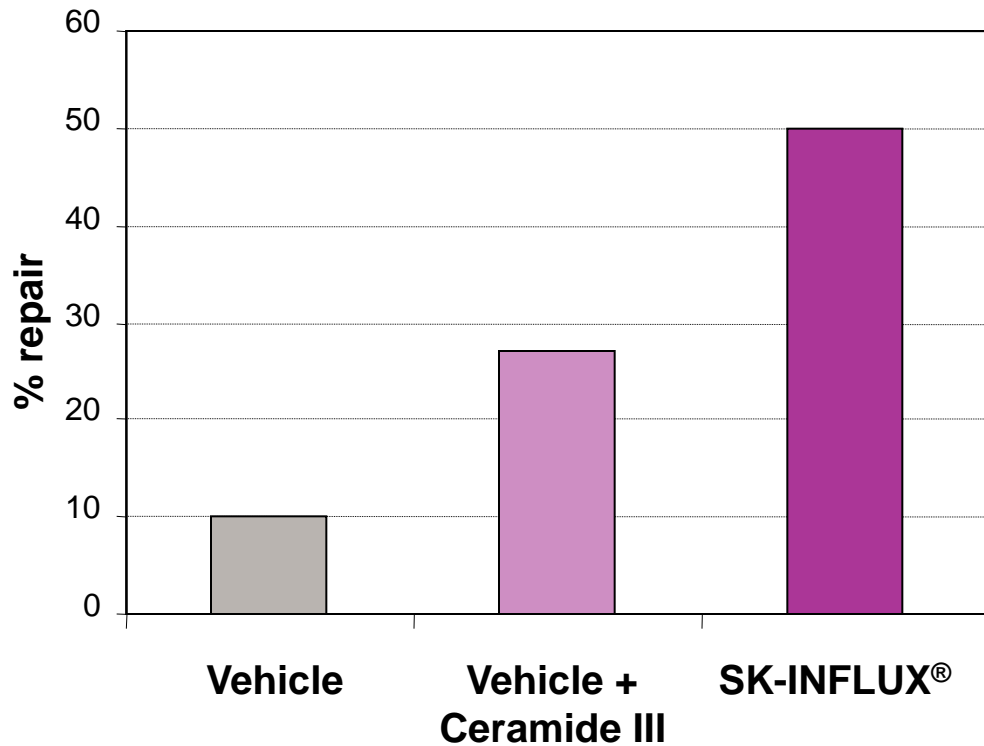
SK-INFLUX® increases the bioavailability of Ceramide by more than 38%, compared to O/W emulsion

Repair of damaged barrier function

Ex vivo study



Ex vivo skin treated with acetone
TEWL measured after 20 hours



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

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%

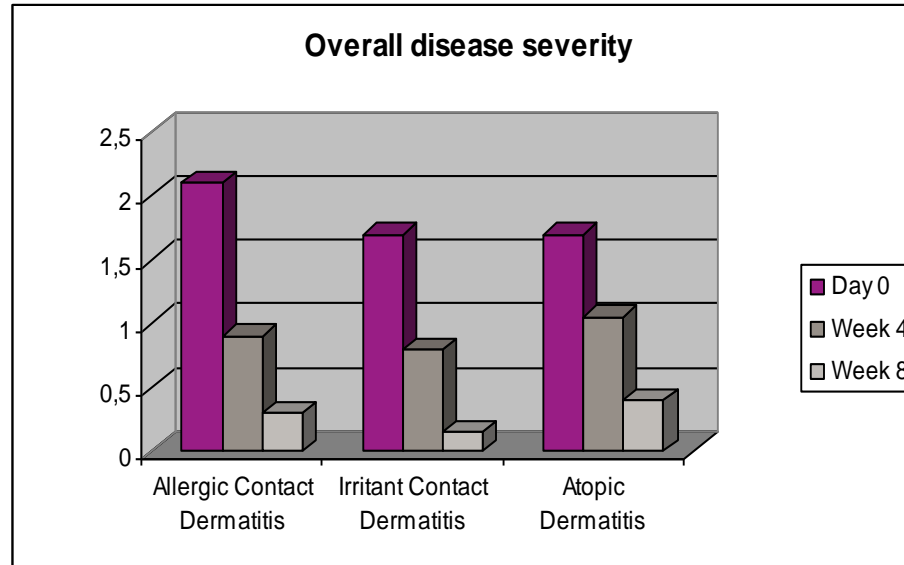
N.B. Relative levels of Ceramides 1 through 6 do not change.

Why is SK-INFLUX[®] essential for dry and sensitive skin conditions ?



Disease	Decrease of Ceramides	References
Psoriasis	Ceramides 1, 3, 6 ↓	Motta S. et al., Arch. Dermatol. 130, 452 - 456 (1994)
Ichthyosis	Ceramides 1,6 ↓	Paige DG et al., Proc. Br. Ass. Dermatol. 25 (1993)
Acne (vulgaris)	Linoleate in Ceramide 1 ↓	Pershho K et al., J. Invest. Dermatol. 90, 350 - 353 (1988)
Atopic dermatitis	Ceramides 3, 6 ↓	Di Nardo A et al., Acta Dermatol. Vener. 78, 27 - 30 (1998)
Surfactant-induced dermatitis	Ceramide 3 ↓	Di Nardo A et al., Contact Dermatitis 35, 86 - 91 (1996)

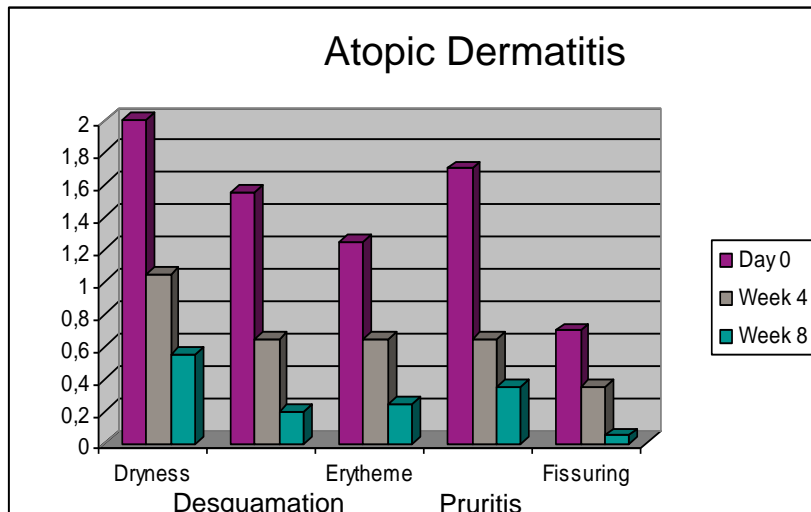
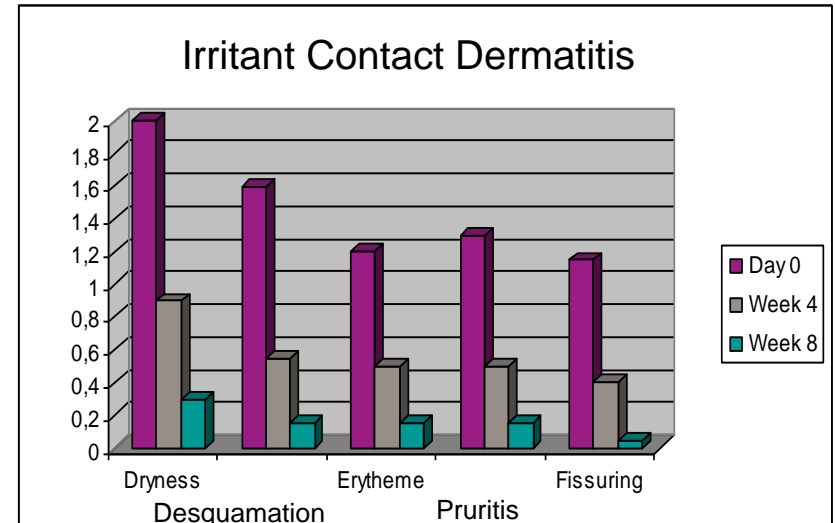
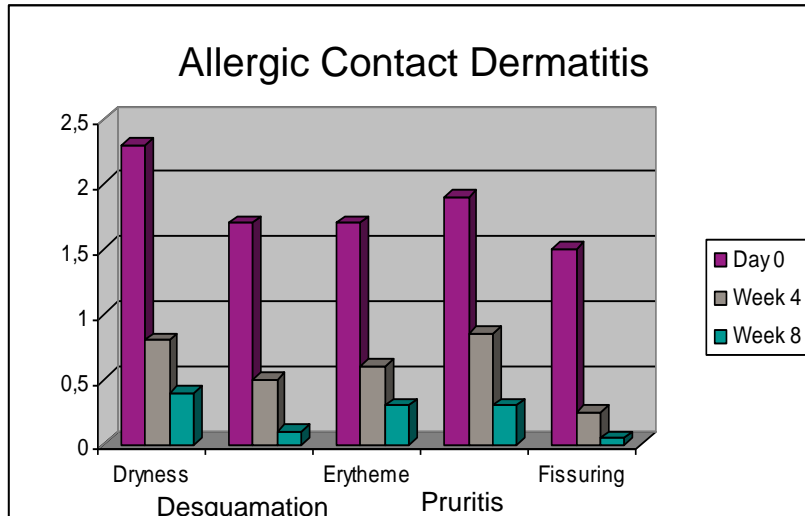
Clinical evaluation – Multi center study (1/2)



- **Number of patients:** Allergic Contact Dermatitis = 35, Irritant Contact Dermatitis = 123, Atopic Dermatitis = 24
- **Product:** Locobase Repair® (Yamanouchi) 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 (2/2)



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

The best available lipid mix; skin identical lipid concentrate

- Ceramide 1+3+6, cholesterol, fatty acids
- Phytosphingosine

Resembles the structure of the lipid barrier in the skin

- Multi-lamellar
- Liquid crystalline

Designed to allow uptake of Ceramides by the skin

- Restoration of the protective barrier function of the skin
- Enhanced moisturization and protection of the skin

Based on a patented technology

SK-INFLUX® / SK-INFLUX® V – Formulation hints



SK-INFLUX®: Off-white viscous liquid

Recommended usage concentration:

1.5 – 5% (normal, dry, aging skin); 3 – 15% for stronger repair or protection

Max. 3% for W/O formulations

SK-INFLUX® should be added to the water phase before the homogenization step.

Production of O/W emulsions:

Adding SK-INFLUX® to an existing recipe of an O/W emulsion significantly decreases the emulsion viscosity. To increase the viscosity it is suggested to increase the amount of consistency enhancer, e.g. of Stearyl Alcohol.

Production of W/O emulsions:

It has to be checked if the addition of SK-INFLUX® to an existing formula leads to phase inversion. Phase inversion can be prevented by using a sufficient amount of suitable W/O emulsifiers.

W/O emulsifiers: ABIL® EM 90 (Cetyl PEG/PPG-10/1 Dimethicone), ISOLAN® GPS (Polyglyceryl-4 Diisostearate/Polyhydroxystearate/Sebacate), ISOLAN® PDI (Diisostearyl Polyglyceryl-3 Dimer Dilinoleate)

The final formulation should have a pH between 5 and 7.

Guide Line Formulations (1)

Skin Repair Cream with SK-INFLUX® WR 1/00-11		
A	TEGO® Alkanol S 2 (Steareth-2)	2.40%
	TEGO® Alkanol S 20 P (Steareth-20)	0.60%
	TEGO® Alkanol 1618 (Cetearyl Alcohol)	3.00%
	Stearic Acid	1.00%
	Isohexadecane	6.00%
	TEGOSOFT® APS (PPG-11 Stearyl Ether)	3.00%
	Cyclomethicone	1.00%
B	Glycerin	3.00%
	SK-INFLUX®	5.00%
	Water	74.0%
C	TEGO® Carbomer 134 (Carbomer)	0.20%
	Mineral Oil	0.80%
D	Sodium Hydroxide (10% in water)	q.s.
	Preservative, Perfume	q.s.

Preparation:

1. Heat phase A and B separately to approx. 80 °C.
 2. Add phase A to phase B with stirring. ¹⁾
 3. Homogenize.
 4. Cool with gentle stirring to approx. 60 °C and add phase C.
 5. Homogenize for a short time.
 6. Cool with gentle stirring and add phase D below 40 °C.
- ¹⁾Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.

Guide Line Formulations (2)

O/W Lotion with SK-INFLUX® SP 14/03-4		
A	TEGO® Care 450 (Polyglyceryl-3 Methylglucose Distearate)	2.00%
	TEGOSOFT® CT (Caprylic/Capric Triglyceride)	5.00%
	TEGOSOFT® DO (Decyl Oleate)	5.00%
	TEGOSOFT® DC (Decyl Cocoate)	4.00%
	TEGOSOFT® OS (Ethylhexyl Stearate)	4.00%
	Tocopheryl Acetate	0.50%
B	Propylene Glycol	3.00%
	Allantoin	0.10%
	SK-INFLUX®	5.00%
	Water	68.6%
C	TEGO® Carbomer 141 (Carbomer)	0.40 %
	TEGOSOFT® OS (Ethylhexyl Stearate)	1.60%
D	Sodium Hydroxide (10% in water)	0.80%
	Preservative, Perfume	q.s.

Preparation:

1. Heat phase A and B separately to approx. 80 °C.
2. Add phase A to phase B with stirring. ¹⁾
3. Homogenize.
4. Cool with gentle stirring to approx. 60 °C and add phase C.
5. Homogenize for a short time.
6. Cool with gentle stirring and add phase D below 40 °C.

¹⁾ Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.

Guide Line Formulations (3)

O/W Winter Body Lotion for dry skin H 10/07-9		
A	TEGO® Care 450 (Polyglyceryl-3 Methylglucose Distearate)	2.0%
	TEGOSOFT® CT (Caprylic/Capric Triglyceride)	5.0%
	TEGOSOFT® DO (Decyl Oleate)	5.0%
	TEGOSOFT® DC (Decyl Cocoate)	4.0%
	TEGOSOFT® OS (Ethylhexyl Stearate)	4.0%
	Tocopheryl Acetate	0.5%
B	SK-INFLUX® V	2.0%
	Propylene Glycol	3.0%
	Allantoin	0.1%
	Water	72.4%
C	TEGO® Carbomer 141 (Carbomer)	0.4%
	TEGOSOFT® OS (Ethylhexyl Stearate)	1.6%
D	Sodium Hydroxide (10% in water)	q.s.
	Preservative, Perfume	q.s.

Preparation:

1. Heat phase A and B separately to approx. 80 °C.
2. Add phase A to phase B with stirring. ¹⁾
3. Homogenize.
4. Cool with gentle stirring to approx. 60 °C and add phase C.
5. Homogenize for a short time.
6. Cool with gentle stirring and add phase D below 40 °C.

¹⁾ Important: If phase A has to be charged into the vessel first, phase B must be added without stirring.



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Especially concerning Active Ingredients

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