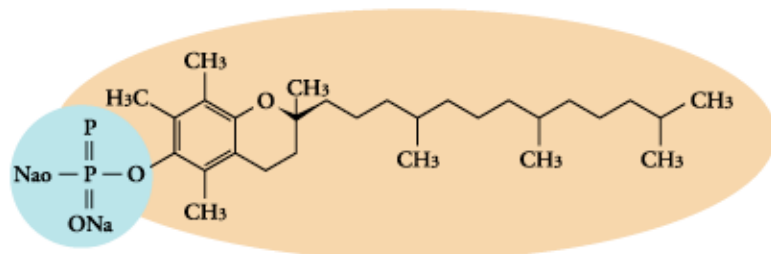


TPNa

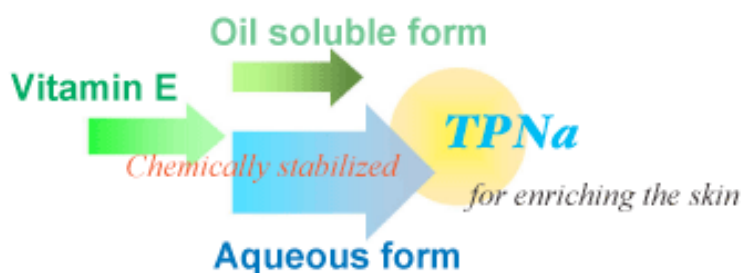
Morecular Structure of TPNa



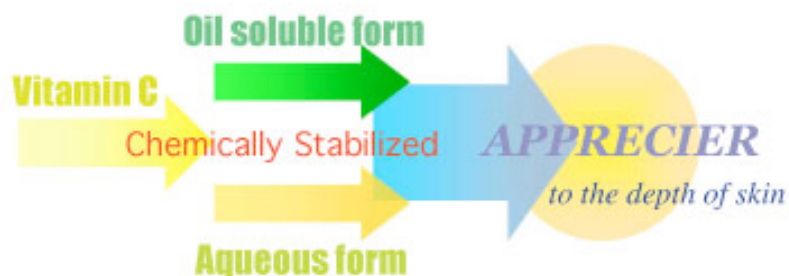
TPNa is the ultimate solution for protecting skin against aging - L-Ascorbyl 2-phosphate 6-palmitate (APPS) INCI Trisodium ascorbyl palmitate phosphate

Aqueous structure of Vitamin E

Design of TPNa



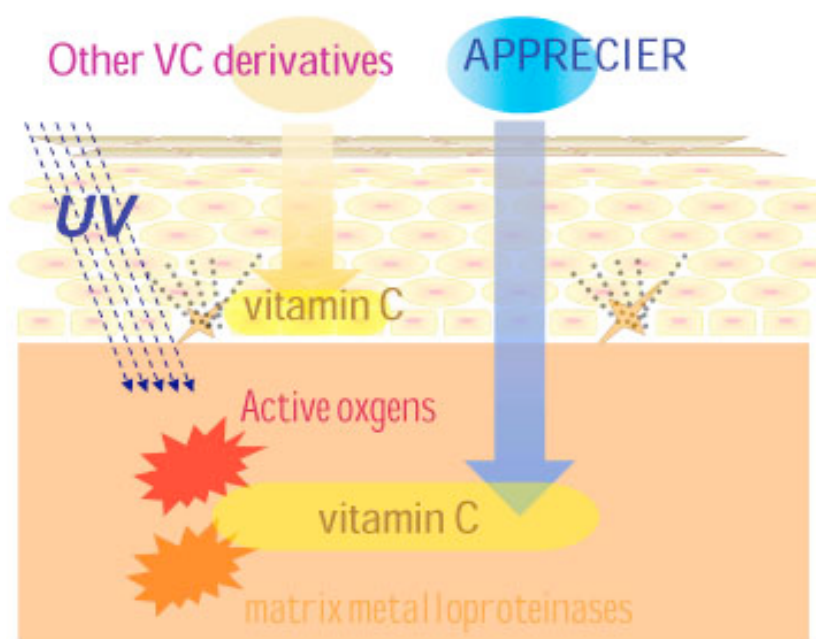
Design of Apprecier



TPNa is an active ingredient of a designated quasi-drug in Japan. It is also the first vitamin E derivative with substantial water solubility, an amphipathic compound. TPNa is enzymatically catalyzed and immediately converted to vitamin E in the skin. Vitamin E is the major naturally occurring lipid-soluble antioxidant protecting skin from ultraviolet radiation, from induced oxidative damage, and from the adverse effects of oxidative stress including photoaging. Vitamin E is also effective in decreasing the frequency and severity of pathological events in the skin. TPNa also has the ability to increase some intercellular substances, preventing dry skin, thus causing a good moisturizing effect on the skin.

Resistant skin

Penetration into the skin

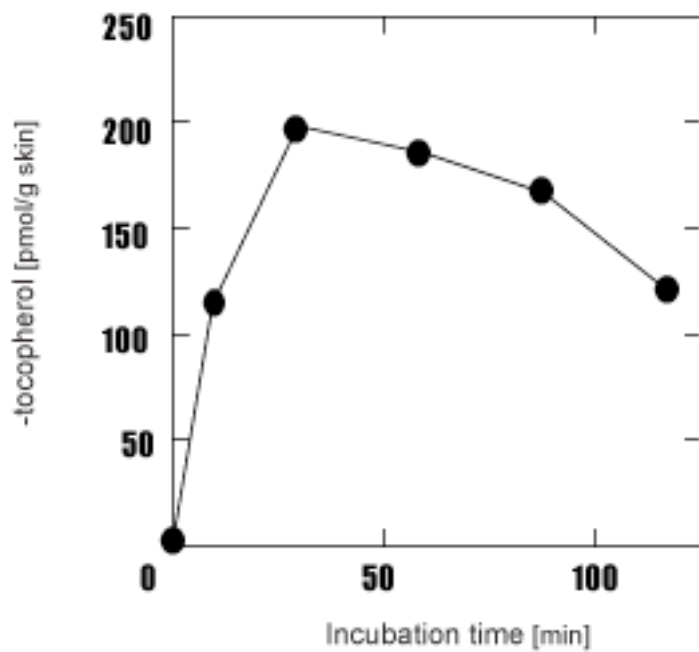


TPNa has a pro-drug effect against usual skin troubles, such as dry or rough skin, by supplying vitamin E (-tocopherol) effectively. The lack of natural moisturizing factor (NMF) and fatty compounds in the skin are the causes. Vitamin E enhances the essential barrier system resistant to external stimulus and keeps the skin healthy.

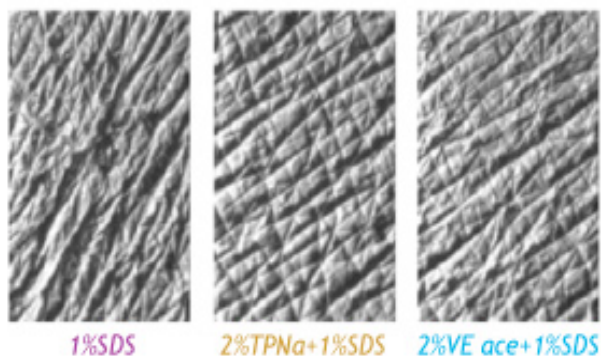
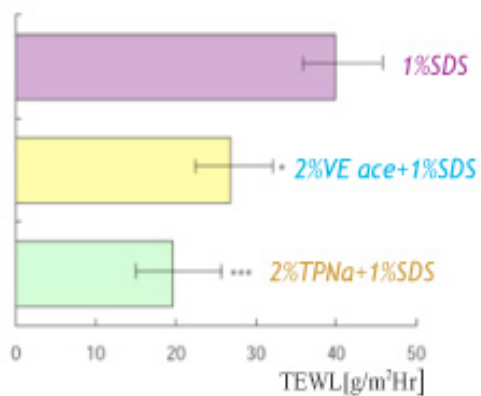
TPNa enzymatically gets catalyzed and quickly converted to tocopherol in the biological system of the skin.

An artificial skin issue was created by applying SDS* 1% on the skin, and to ensure the preventative effect, 2% TPNa or 2% α -tocopheryl acetate (VE ace) were simultaneously applied with SDS. The result of the TEWL (trans epidermal water loss) after 24 hours from the removal of those baths, showed that TPNa inhibited an increase of TEWL significantly. Moreover, the texture on surface of the skin was examined by the replica method. It examination showed the area where TPNa was applied was less scaly and had a clearer cutanea area.

Release of Vitamin E (α -tocopherol) into serum



Improvement of rough skin



Rebirth of your skin

TPNa is expected to improve critical skin problems, such as inflammatory pigmentation. We investigated the efficacy with a 2% TPNa lotion on females who have pigmentation on their faces for the period of 4 weeks. They applied it on the affected region, twice a day (morning and evening). Results showed how much and how quick the lesions improved, supporting the high and quick efficaciousness. After this examination, they reported its significant moisturizing effect and smooth surface of the skin, summarizing the following table.

	Question for individuals	Agree	Positive	Even	Negative	Disagree	Support
1	Improvement of erythrogenic	29%	71%				100%
2	Improvement of skin roughness	14%	29%	57%			43%
3	Skin brightened	14%	29%	57%			43%
4	Skin softened		29%	71%			43%
5	Skin slicked	14%	57%	29%			71%
6	Skin moisturized	57%	29%		14%		86%
7	Removal of skin obscure	14%	29%	57%			43%
8	Avoid dry skin	29%	14%	29%	14%		43%
9	Getting skin transparency	14%	29%	57%			43%

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