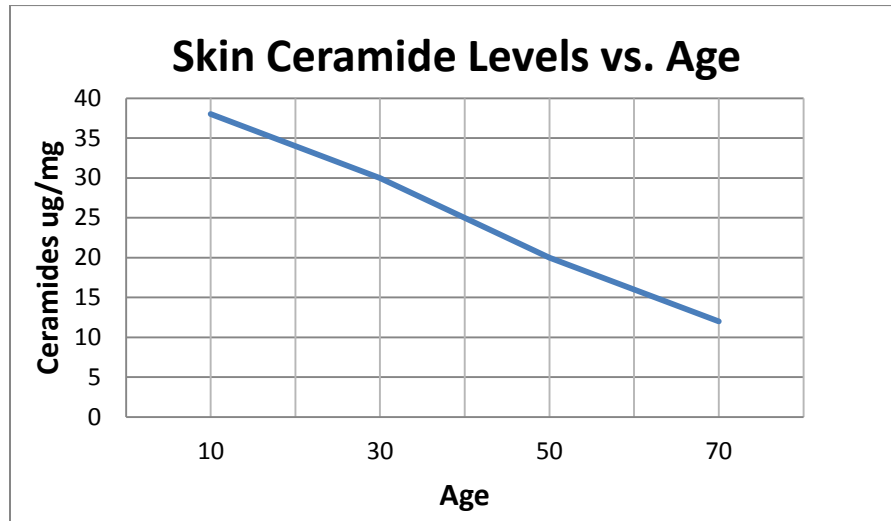


Rice Based Ceramide-PCD versus Other Plant Ceramides

Numerous studies have been done on the effects of ceramides on the skin barrier, including the moisturizing effect, growth of the fibroblast and anti-inflammatory effects among others. Shown below is the comparison of rice based ceramides versus other plant-based ceramides, **with rice ceramides and specifically Ceramide-PCD® being the most effective.**

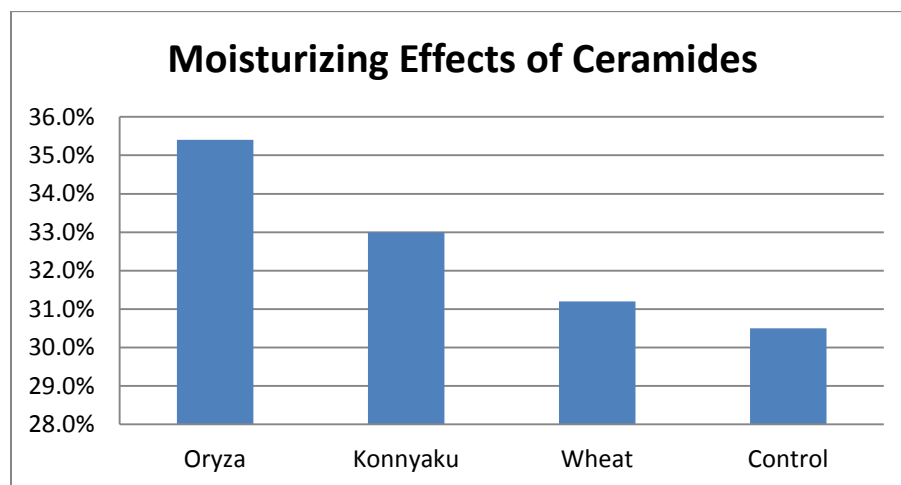
Ceramides Decrease with Age

Imokawa et al. demonstrated that the content of skin ceramides declines with age. Further studies and findings suggest the ceramides are a key factor in moisture maintenance and barrier function of the stratum corneum and is thought to be a factor in wrinkle formation.



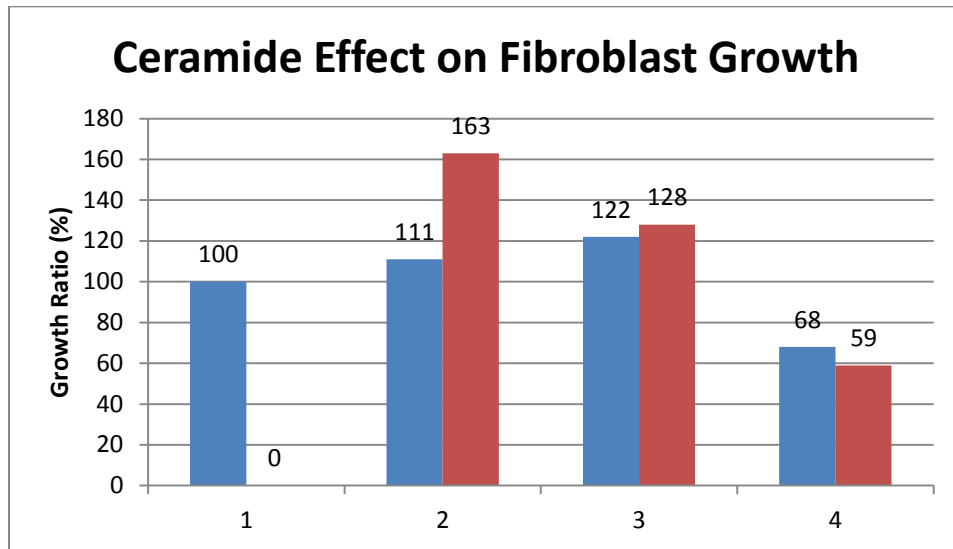
The Moisturizing Effects of Oryza Ceramide® (*in vitro*) versus Wheat and Konjac

The moisturizing effect of ceramide was established by several clinical studies. The moisturizing effects of ORYZA CERAMIDE® were compared with other commercially available ceramides. **ORYZA CERAMIDE® – P demonstrated superior moisturizing effect with moisturizing ratio of 35%.**



Ceramide Effect on Fibroblast Growth

Fibroblasts are a type of cell that synthesizes the extracellular matrix and collagen, the structural framework for animal tissues, and plays a critical role in wound healing. Fibroblasts are the most common cells of connective tissue in animals. Ceramides enhance the proliferation of dermal fibroblast, with rice ceramides exhibiting the most potent proliferative effect.



1. Control 2. Ceramide-PCD 3. Corn Ceramide 4. Wheat Ceramide

Effects on Anti-Inflammatory Activities

Besides their moisturizing and barrier effect, ceramides also exhibit anti-allergic and anti-inflammatory activities. Oral administration of rice ceramides decreased scratching action in mice. All the plant-based ceramides inhibited mass cell degranulation with rice being the most potent.

