# Sea cucumber extract may protect against the common cold

By Stephen Daniells , 10-Feb-2009
Last updated on 10-Feb-2009 at 17:28 GMT

Related tags: Sea cucumber, NGNA, Antiviral

**Extracts from sea cucumber may one day be making waves in dietary supplement circles, if science from Scandinavia continues to yield positive results.**

Recent results from an in vitro study reportedly showed that a compound extracted from sea cucumbers known as NGNA (N-glycolylneuraminic acid) has antiviral activity against the rhinovirus, the cause of the majority colds that affect Americans annually, and the compound is non-toxic to human cells.

According to Dan Edwall, PhD, vice-president of R&D at Scandinavian Clinical Nutrition AB (SCN) – holder of the world-wide rights to NGNA since 2007 – the compound and other sialic acids cover cell membranes and affect cell adhesion and communication. The company is continuing R&D into the compound, and the goal is to ultimately take the sea cucumber extract into food supplements and a nasal spray.

*"With these exciting preliminary results, SCN has a strong incentive to continue with further exploratory R&D work with NGNA, along with other compounds in our pipeline within the field of viral diseases. The results also fit with our objective to develop efficient and safe nutraceuticals and reinforce health through nutrition,"* he said.

Dr Edwall told NutraIngredients-USA.com that the company has an extensive scientific IP portfolio and scientific data, including results from animal studies with the compound, are proprietary. NutraIngredients-USA.com has not seen any data relating to SCN's NGNA.

The company is reportedly collaborating with scientists from Louisiana State University, Sweden's Karolinska Institute, and other CROs and academics.

It will be some time before NGNA will be found in food supplements, said Dr Edwall, and for this reason, the company is getting started in animal health products. *"There is a very large need for antiretrovirals in the meat industry,"* he said.

**Present in others, but not in us**

While many animals, including the great apes, can synthesize NGNA, humans cannot. *"NGNA is not present in humans, and our ability to synthesize it is gone,"* said Dr Edwall.

According to an article published in the *Journal of Biological Chemistry* in 2000 (Vol. 275, pp. 8633-8640), a mutation in a specific enzyme relating to NGNA synthesis occurred after we started evolving from our common ancestor with great apes.

This begs the question if NGNA confers such a benefit as an antiviral, why do we no longer produce it? Dr Edwall can only speculate that there was an evolutionary advantage to losing NGNA from the cell surface.

*"We have the situation where this compound is made in animals but not humans, and could give rise to an immunological reaction,"* he said. *"This was investigated in the mid-1990s and found that NGNA had no or very low induction of antibodies."*

This study was published in *Nephron* in 1996 (Vol. 72, pp. 599-603) and was performed by researchers at Japan's National Institute of Health.

No human studies are currently underway, said Dr Edwall, and may be a couple of years away.*"Our first focus in the nasal spray,"* he said.

**Sniffing around pharma partners**

Dr Edwall said that a nasal spray is anticipated, and that SCN is investigating potential partners in the cough/cold/flu segment of the market.