

# Teaser Memorandum

NEOPHARM Co.,Ltd.

**Development of protease-activated receptor-2 (PAR-2) antagonist for  
chronic dermatitis improving agent**

## Executive Summary

- NeoPharm Co., Ltd. is concentrating its capacity on core technologies and is expanding its business areas from cosmeceutical moisturizer to a diabetes cure, a remedy for obesity, an Alzheimer drug, health foods, and external preparations for skin.
- NeoPharm Co., Ltd. was established in 2000. Initially, the focus was to develop a topical agent for treatment of atopic dermatitis using pseudo-ceramide. Atopalm was sent to the market at 2000, which was a huge success.
- NeoPharm Co., Ltd. intends to enter into a technology transfer or licensing transaction with regard to chronic dermatitis improving agent(NPS-1577). Terms of the transaction are not set, and interested parties may further discuss the details if they wish to enter into an agreement.

### Industry Sector :

Cosmetic

### Therapeutic Target :

Dermatological

### State of Development :

Clinical stage

## Key Technology Highlights

- A commercially usable PAR-2 blocker has not been developed yet so that the clinical effect of a PAR-2 blocker has not been reported yet. As the result of the clinical test done by the company on the atopic dermatitis and the psoriasis through the development of the corresponding technology, it was checked that NPS-1577 has the effect of improving the skin disease such as chronic inflammation.
- Moreover, in consideration of the skin pigmentation and pruritus induction effects of PAR-2, it is expected that the cosmetic containing the PAR-2 blocker inhibits the skin pigmentation and improves the pruritus and that it can become the new raw material of a cosmetic so that various effects can be implemented at the same time.
- Furthermore, it is checked that NPS-1577 developed through the corresponding technology has no problem with the toxicity and safety as the raw material of cosmetics through the preclinical test and the clinical test. It is registered in the ICID (International Cosmetic Ingredient Dictionary) so that it is expected that there is no difficulty in commercialization.

## IP Owner Summary

NeoPharm Co.,Ltd.

## Personal Description of Researcher

- Name:  
Byeong-deon Park
- Present Position:  
CEO/President  
NeoPharm Co.,Ltd.
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## Market Feasibility

- Domestic and foreign market size:
  - Domestic market size : 32.4 million dollars(in 2010)
  - Foreign market size : 3.4 billion dollars(in 2010)
- Domestic and foreign market opportunity (competitors and competing product):
  - Stelara

## Trend & Partnership

- Future outlook and trends related to technology :
- Technology Transfer and commercialization conditions :  
Consultation(exclusive license or non-exclusive license)
- Type of business relationship sought (including licensing availability) :  
Investment promotion, or exclusive or non-exclusive licensing agreement

## Technology Overview

### ■ Technology Platform

The core technology of NeoPharm is the method to manufacture the composite for treating the flammable disease using the novel PAR-2 inhibitor material, the heterocyclic compound.

### ■ Background and unmet needs

It is expected that the PAR-2 inhibitor will be effective for the flammable response of skin, pruritus, pigmentation, cut healing, and so on. However, a commercialized inhibitor is not developed.

NPS-1577, the PAR-2 inhibitor developed through the technical development, is the first commercialized PAR-2 inhibitor in the world. In order to make it possible to be used as the natural material of cosmetics, the toxicity, safety, and in-vitro toxicity tests corresponding to the KFDA standards of the raw materials of cosmetics were done. The safety was checked through the patch test and the clinical test on the final product.

Moreover, it was registered in the ICID (International Cosmetic Ingredient Dictionary).

### ■ Discovery and Achievements

It had the effects of alleviating the dermatitis in the model of an animal with acute dermatitis and alleviating the inflammation, improving the function of the skin wall, and inhibiting the skin permeation of an inflammable cell in the model of an animal with chronic dermatitis.

As the result of the clinical test on the atopic dermatitis of the product containing 0.1% NPS-1577, the atopic dermatitis symptom (SCORAD index), the itchiness symptom, and the comprehensive clinical evaluation were improved.

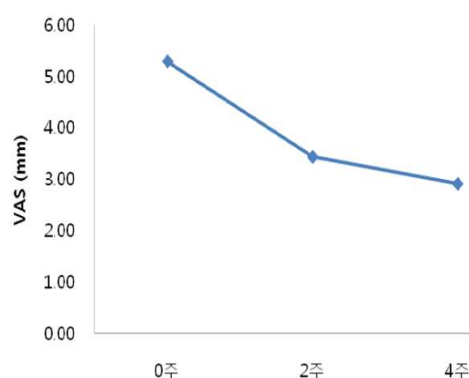
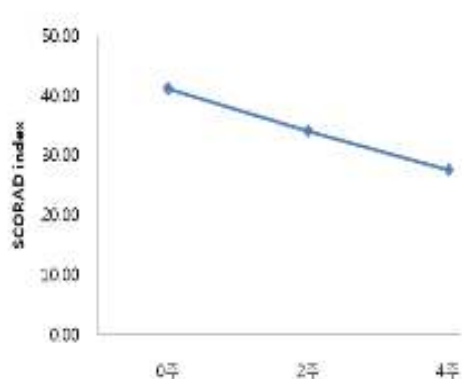


Fig. 1. The clinical results of the atopic dermatitis symptom    Fig. 2. The clinical results of the itchiness symptom

### ■ Toxicological data

The toxicity and safety test results showed that it is safe in all the items of the single administration cavity toxicity, skin stimulation, phototoxicity, photosensitization, skin sensitization tests. The in-vitro toxicity test results showed that it is the comparatively safe compound in all the in-vitro metabolic stability, CYP450 screening, cell toxicity, hERG K<sup>+</sup> channel, and hERG binding tests.

According to the patch test done by a dermatologist on the final product, the skin stimulation was not observed. According to the clinical test on the atopic dermatitis patients and the psoriasis patients, the side effects including the skin stimulation were not observed. Hence, it is thought to be a safe material.

## Patents and Publications

Country	Appln. No.	Status	Description
Korea	2010-0082258	Pending (Before Publication)	Development of protease-activated receptor-2 (PAR-2) antagonist for chronic dermatitis improving agent

## Contact Point

KHIDI (Korea Health Industry Development Institute) is currently receiving inquiries from interested parties in this transaction. If you are interested, please contact any of the KHIDI professionals below :

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