

LG Life science,Ltd.

PROJECT NAME (Ingredient Trade Name): Effect of IAA and Photo dynamic therapy for treatment of acne
Active Ingredient Scientific Name: Indole-3-acetic acid (IAA)
Submission Date: 2010.04.16

Description of Product :

Spread of IAA in the face and then light LED light device(green light), activated IAA inhibit of sebum secretion, skin pore occlusion and have bacteriocidal effect.

See acne-like troubles on your face, just as use it for 5minutes.

Once a week, for 5 weeks.

1. Supporting Evidence (Efficacy/Functionality):

Provide all supporting literature and research studies, publications, protocols, and analytical assessment.

Please separate data into:

- Mechanism of Action/s (MOA) : Free radical formation after irradiation of IAA with visible light(Green Light) and inhibition of sebum secretion, Bacteriocidal effect, inhibition of skin pore occlusion.
- Chemistry/Characterization data :
 - * IAA - Plant Auxin
 - Cosmetic ingredient used in anti-aging product

IAA
 ↓ ◀ PDT (Green Light)

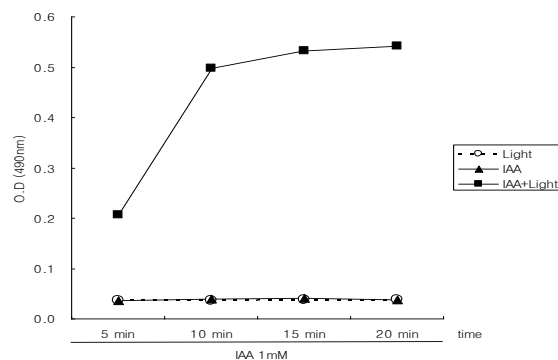
Activated IAA

↓

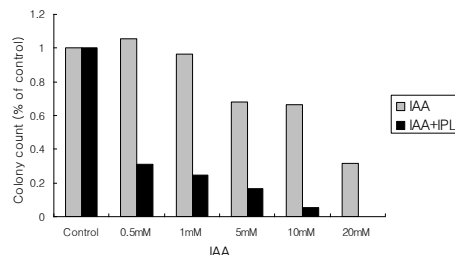
Free radical formation : 1) inhibitor of sebum secretion
 2) Bacteriocidal effect (P.acne and S.aureus)
 3) Inhibitor of skin pore occlusion

- *In vitro* bioassay data, *In vivo* testing (Laboratory, Animal, and Human Clinical Studies)

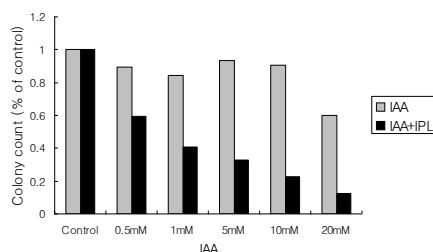
1. Free radical formation after irradiation of IAA with visible light



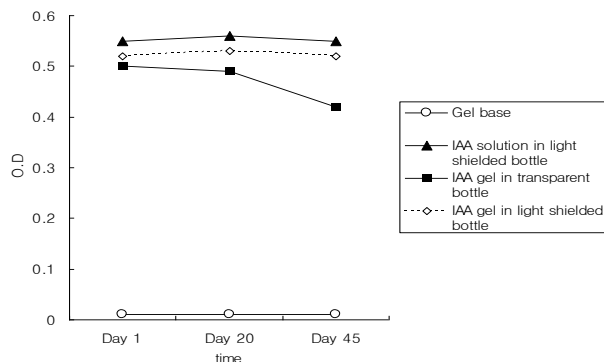
2. Colony count reduction of *P. acnes* after IPL activated IAA treatment



3. Colony count reduction of *S. aureus* after IPL activated IAA treatment



4. Free radical formation of IAA gel and IAA solution after irradiation with visible light on day 1, day 20 and day 45



- Clinically tested
 - Study design? (number of subjects, duration of the study/ies, double-blinded, placebo-controlled, case controlled, etc.)
 - 1) Title
 - : Effect of IAA and Photo dynamic therapy for treatment of acne
 - 2) Object
 - : Observation of effect of Light-activated indole-3-acetic acid by Green Light diode light in acne.
 - 3) Research Institute
 - : Seoul National University Bundang Hospital
 - 4) PI
 - : Kyoung-chan Park, MD. (Dermatology)
 - 5) Subject
 - : The person with lots of acne over age 15 was not application to subject exemption criteria.
 - 6) Procedure
 - : Once a week, for 5 weeks
 - 7) Effect and Safety Estimate Method
 - 7-1) The change of sebum excreted by sebumer check

- 7-2) The change of erythema by Mexameter check
- 7-3) The change of number of inflammatory papule, node and acne.
- 7-4) The change of skin elasticity by cutometer check
- 7-5) The change of QOL(Quality of Life) by survey

- Total number of clinical studies completed? Total 25 case
 - Percent response rate? 20 case finish / Total 25 case
 - Dose and delivery form used in the study/ies? IAA 3ml, 1mM
- Published or not published, and in which journal/s? Be preparing.
- Recommended Delivery form/s? gel
- Recommended dose/s? (mg per day) 3ml/week
- Collaborating Organizations, professors or University Affiliations
: Seoul National University Bundang Hospital, Kyoung-chan Park, MD. (Dermatology)
- Conclusions from the studies
: This research is expected to be completed by the end of May, 2010.

2. Intellectual Property / Exclusivity

Provide an IP Portfolio summary to include:

- Provide patent information
 - Application No. : 1020070065046(2007.06.29)
 - Registration No. : 10-0773475-00-00(2007.10.30)
 - Applicant for a patent : dong-suk Kim (Korea), so-young Kim (Korea), Sun-bang Kwon (Korea)
 - How is the patent unique, compared to competition?
 - ACNE THERAPEUTICS AND SEBUM SECERNENT INHIBITOR WHICH COMPRISE INDOLE-3-ALKYL CARBOXYLIC ACID, AND KITS FOR PHOTODYNAMIC THERAPY CONTAINING THE SAME)
- Describe exclusivity options (MLM, all markets, global, etc.)
 - well-skin : Responsibility of manufacture and supply of IAA
 - LG Life science : Responsibility of exclusive sales in the internal and external