Human skin compatibility Evaluation Test

| TITLE | Human skin compatibility Evaluation Test of "VITABRID SCALP SHAMPOO" | | | |
|----------------|--|--|--------------------------------|--------------------------|
| INSTITUTE | Korea Dermatology Research Institute Co., Ltd. | | | |
| | Period | May. 10. 2017 ~ Aug. 08. 2017 | | |
| | Test Period | Jul. 25. 2017 ~ Jul. 28. 2017 | | |
| TEST METHOD | Number of Test Sample | 1 ea | Number of Test Personnel | 31 |
| | Sample Form | Translucent gel with a light yellow tint | Treatment | 24 Hours occlusive patch |
| | Detail on Test Method | Subject Selection 31 subjects who met the selection criteria and not included in exemption criteria were selected. Application Method Single application 24hr occluded patch test. Evaluation Method Skin reactions were classified according to a pre-defined scoring scale. The irritancy of the product was judged by the calculated irritation index. | | |
| TEST RESULT | 1) The irritation index of "VITABRID SCALP SHAMPOO" was "0.022" → "VITABRID SCALP SHAMPOO" may be considered to have low irritancy to human skin. | | | |
| RESEARCHER | Dermatology Specialist Lee, Kyungreal, MD. (signature) | | | |



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Visual assessment of skin reaction

The evaluation of skin reaction was done under sufficient bright light source by the same dermatologist according to following scoring system (table1).

Table 1. Skin irritancy scoring system for human patch test

| Score | Description | |
|-------|--|--|
| 0 | No signs of inflammation, normal skin | |
| 0.5 | Doubtful or slight reaction | |
| 1 | Slight erythema | |
| 2 | Moderate erythema with or without partial edema or papules | |
| 3 | Moderate erythema with diffuse edema | |
| 4 | Intense erythema with diffuse edema with vesicles | |

Evaluation of skin irritancy

Irritation index was calculated using following equation.

Irritation Index =
$$\frac{\Sigma \text{ Irritation score at 24, 48 and 72 hr}}{\text{total number of observations}}$$

Skin irritating potential was assessed according to following classification (table2).

Table 2. Irritancy classification

| Irritation Index | Evaluation | |
|------------------|--------------------|--|
| 0 ≤ <0.02 | no irritancy | |
| 0.02≤ <0.25 | low irritancy | |
| 0.25≤ <1 | slight irritancy | |
| 1≤ <2.5 | moderate irritancy | |
| 2.5≤ | severe irritancy | |