Advanced Claim Support for Deodorants and Antiperspirants

in-cosmetics 2015 Innovation Seminar

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Agenda

- Introduction
- Advanced efficacy claims – Study designs
- Further parameters – Study designs
- Conclusion
Common claims for deodorants and antiperspirants

Prevention of *odor* and prevention of *sweat development*

1888: First commercial deodorant  
1903: First commercial antiperspirant
In the recent years market requirements stimulated the development of new challenging claims.

Advanced claims today:
Introduction
Introduction
Advanced claims

- **Efficacy claims**
  - Duration of efficacy
  - Special conditions
    - Extreme climatic conditions
    - Physical activity
    - Psychological stress
  - Skin care
  - Cooling
  - Reduction of hair growth…

- **Further parameters**
  - No marks on textiles
  - Convenient sensory characteristic
    (no stinging, not sticky.....)
  - Tolerance (sensitive skin, shaved skin...)...
Advanced claims – Adapted and new test designs

• Efficacy claims
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Advanced efficacy claims – Test designs

To investigate the extended **duration** of efficacy or efficacy at **special conditions**, existing protocols can be adapted to receive a suitable design for a claim support study.
Duration of efficacy

Reason:

Although frequency of body cleansing is still increasing (more than 80% of the Europeans daily take a shower, bath or wash the body; Brazilians shower 12 times weekly) consumers prefer a long lasting efficacy. People want to feel safe.

Adaption of study design:

Product application: 24...48...72...96h...120h...assessment
Advanced efficacy claims – Test designs

Efficacy at extreme climatic conditions

Reasons:
Global warming and travelling to tropical regions.

Adaption of study design:
Heat stimulation in an appropriately equipped hotroom at higher temperatures 38...45...52°C or increased relative humidity e.g. 60 % at 35°C
Advanced efficacy claims – Test designs

Efficacy at physical activities as sports

Reason: More people are doing sport

Germany: 9.08 Million registered members in fitness centers at 2014, 10 years before 4.68 Million

Adaption of study design:

A defined sport unit like 15 minutes on bicycle ergometers can be included in known protocols prior to or instead of the common heat induction. Standardized showering after sports can also be integrated into study procedure.
Advanced efficacy claims – Test designs

Efficacy at psychological stress

Reason:
Especially in the developed countries, psychological stress is more and more increasing and seen as a problem in the population.

Adaption of study design:
Induction of psychological stress by a standardized procedure in accordance with the TSST (Trier Social Stress Test) "The Trier Social Stress Test – A Tool for Investigating Psychobiological Stress Responses in a Laboratory Setting", Neuropsychobiology 1993:28:76-81
Advanced efficacy claims – Test designs

TSST

Study procedure:
• Interview with a psychologist – Issue of presentation
• 10 minutes to prepare presentation

• In front of an auditorium, that does not show any interaction, using a microphone and knowing that the speech is videotaped
  5 minutes public speaking +
  5 minutes difficult mental arithmetic

Prove of stress induction:
• Cortisol levels by saliva samples
• Heart rate with a pulse rate meter
• Self assessment by subject

A relatively short stress situation of less than 30 minutes is enough to induce strong sweating and to induce malodor of the body.
### Advanced efficacy claims – Test designs

#### Efficacy at psychological stress

**Example study: TSST in combination with a sniff test**

<table>
<thead>
<tr>
<th>Days -4, -3, -2, -1 and 4 h before TSST</th>
<th>Immediately before TSST</th>
<th>TSST</th>
<th>after TSST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard washing and product application</td>
<td>Baseline Sniff</td>
<td>Interview with a psychologist 10 minutes to prepare presentation 5 minutes public speaking + 5 minutes mental arithmetic In front of an auditorium, with microphone and videotaped</td>
<td>Sniff +15 min</td>
</tr>
<tr>
<td><strong>Subjective stress evaluation</strong></td>
<td></td>
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<tr>
<td><strong>Cortisol quantification (saliva samples)</strong></td>
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<tr>
<td><strong>Heart rate (pulse rate meter)</strong></td>
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</table>
Advanced efficacy claims – Test designs

Example results of a responder in TSST

Subject Self Assessment of Stress

- Before TSST
- TSST Interview Talk
- TSST Arithmetic Task
- After Clarification

Cortisol Rate

- Before TSST
- 1 min after
- 10 min after
- 30 min after
- 40 min after
- 50 min after
- 60 min after

Heart Rate
Advanced efficacy claims – Test designs

Example study responder [%] to stress parameters in TSST

- Cortisol: 73.5%
- Subjective: 97%
- Pulse: 58.8%
Example study: Increase of single or multiple stress parameters in TSST
Example study: Results „Sniff test“

- Before TSST: Untreated 20.7, Treated 7
- 15min after TSST: Untreated 26.2, Treated 8.3
- 4h after TSST: Untreated 46.3, Treated 9.5
Further parameters – Test designs

No marks on textiles - Yellow stains on white textiles

Reason: Not nice and nearly impossible to remove

<table>
<thead>
<tr>
<th>Possible Study Design</th>
<th>Days</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Visits</td>
<td>x</td>
</tr>
<tr>
<td>Product application</td>
<td>x</td>
</tr>
<tr>
<td>Wearing T-Shirt for at least 10h</td>
<td>x</td>
</tr>
<tr>
<td>Washing and drying of shirt</td>
<td>x</td>
</tr>
<tr>
<td>Image capture for image analysis</td>
<td>x</td>
</tr>
</tbody>
</table>

Negative control – unworn shirts will be washed only
Further parameters – Test designs

No marks on textiles - Yellow stains on white textiles

Image analysis

Further parameters – Test designs

No marks on textiles - White spots on dark textiles

Reason: Undesired

Possible study designs

- Wear a black shirt after product application – shirt will be cut
- Pull black textiles through axilla after product application
- Product application on forearms – pull black textiles across
Further parameters – Test designs

No marks on textiles - White spots on dark textiles

1. Product application
2. Textile application
3. Pulling textile under weight
4. White spots on textiles
5. Image analysis or visual assessment by trained evaluators
Conclusion

For deodorants and antiperspirants the change of lifestyle and climatic conditions brought and will bring up further demands for new challenging developments and claims.

Products shall be efficient on all people and skin types, everywhere, in all situations, long lasting and without any negative aspects.
Conclusion

To support these upcoming claims, consistently the development of new study designs and adaptions of existing protocols are necessary.
Thank you!

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