Product Description

**VECTRON™ T500**

A wettable powder formulation

<table>
<thead>
<tr>
<th>Formulation Type</th>
<th>Wettable Powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI Concentration</td>
<td>50 %</td>
</tr>
<tr>
<td>Dose</td>
<td>100 mg a.i./m².</td>
</tr>
<tr>
<td>Packaging</td>
<td>50 g / sachet</td>
</tr>
</tbody>
</table>

**Active Ingredient**

<table>
<thead>
<tr>
<th>ISO Name</th>
<th>TENERBENAL™ broflanilide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>N-[2-bromo-4-(perfluoropropan-2-yl)-6 (trifluoromethyl)phenyl]-2-fluoro-3-(N methylbenzamido)benzamide)</td>
</tr>
<tr>
<td>Chemical Class</td>
<td>Meta – diamides</td>
</tr>
<tr>
<td>Mode of Action</td>
<td>GABA-gated chloride channel allosteric modulators</td>
</tr>
<tr>
<td></td>
<td><strong>IRAC Group 30</strong></td>
</tr>
</tbody>
</table>
VECTRON™ T500 project supported by IVCC

- 2007: Discovered TENELENAL™ (broflanilide)
- 2012: Collaboration
- 2019: Preliminary efficacy study
  - Data generation: Tox, Phys & Chem data
  - Pre-Development
- 2021: PQ Review of VECTRON™ T500 Dossier
  - Full Development
  - PQ Dossier Submission: September 2021

Activity in countries
- Country Registration
- Market Access
# Features – VECTRON™ T500

A new Formulation of TENELENAL™ for Indoor Residual Spraying

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Novel Mode of Action</strong></td>
<td>New target site of action. Ideal for insecticide resistance management</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>Good residual efficacy on all relevant surfaces, comparable to other 3\textsuperscript{rd} generation IRS. Initial data suggesting long residual activity.</td>
</tr>
<tr>
<td><strong>Acceptability</strong></td>
<td>Odorless and Stainless formulation</td>
</tr>
<tr>
<td><strong>Easy to transport, store and handle</strong></td>
<td>50 g sachets, easy to handle</td>
</tr>
</tbody>
</table>
New Mode of Action

TENEBENAL™ affects a newly discovered site on the GABA_A receptor of the insect nerve. Therefore, not affected by the target site mutations that lead to resistance to other insecticide classes including those which also interact with the GABA receptor.

Nakao T., Bioorg Med Chem. 2016
TENEBENAL™ shows activity to various resistant mosquitoes
Tarsal contact assay

Anopheles gambiae (Kisumu)

0.0010% TENEBENAL™ activity against various mosquitoes

LSTM, Liverpool, UK
Lees, R. et al, Malar J, 2020
Experimental hut study in Tanzania

Comparing two IRS formulations containing TENEBENAL™; a prototype and VECTRON™ T500.

Residual efficacy was determined through monthly cone assays with susceptible *An. gambiae* s.s. Kisumu mosquitoes. For each time point, substrate and treatment tested the mean 72h mortality ± 95% CI is given.

LSHTM, London UK
Snetselaar, J. et al., PLOS one, 2021
Experimental hut study in Burkina Faso

Mortality of *Anopheles gambiae* s.l. VK; 72 hours after exposure on treated walls using in situ cones tests. Each bar represents mean of mortality rate ±95% CI and mean 80 mosquitoes were exposed.
Experimental hut study in Benin

An. gambiae Kisumu

An. gambiae Kisumu s.l. Cové

LSHTM, London UK
Recap – Salient Points

- A new tool for IRM strategies with novel Mode of Action; TEBENAL™
- Easy to handle; small 50g sachet, odorless and stainless
- Long residual activity on relevant wall surfaces
Thank you
DISCUSSION – SESSION TWO
Question

What are your suggestions to WS1 facilitators and team leads for further topics to explore or actions to consider following today’s second session?

Please share your suggestions in the chat, thank you!