AntiParasitic Peptide (APP)
A novel strategy to eradicate Malaria

Prepared by LSVenture GmbH, Sept., 2009
Introduction

Malaria – an increasing threat
300-500 million people fall ill every year
c.a. 2.7 million die per year
Increased spread due to global warming and increased
global travelling

New promising strategy
• We have synthesized a peptide that kills the malaria parasite.
• We can produce it with the help of bacteria in the mosquito
gut, where the weakest link during parasite development is
localized.
• By the use of these tools we want to develop a self-
generating system to stop transmission of the parasite via
mosquito to man.
APP in Mosquito Gut

Parasite

Bacterium producing APP
APP in Human Red Blood Cells

Time course of TPx activity against asynchronous asexual cultures

% parasitemia

Time after TPx incubation

0h 3h 6h 9h 12h 15h 18h 21h 24h

TPx Control
Antiparasite Peptide- APP

- A unique scientific platform with strong therapeutic potential
- Targeted killing of malaria parasite
- Opens novel therapeutic window for malaria patients
- Reduces number of malaria-transfected mosquitoes
Alternatives to Para-Transgenic Mosquitoes

- DDT to eliminate mosquito population - resistance
- Pathogens - not enough
- Sterile males - mass release difficult
Alternatives to Peptide Treatment in Human

- Drugs – resistance problems
- Vaccines - none
Patent Situation & Inventors

**Patent situation**

- Patent application (user patent) 1 has been filed in July 2007: “Cell Penetrating Peptides - novel antimicrobials which demonstrate broad spectrum anti-parasitic activity”

**Inventors:**

1. Dr. Romanico B. G. Arrighi, Department of Genetics, Microbiology, and Toxicology, Stockholm University

2. Dr. Yang Jiang, Department of Neurochemistry, Stockholm University

3. Professor Úlo Langel, Department of Neurochemistry, Stockholm University

4. Professor Ingrid Faye, Department of Genetics, Microbiology, and Toxicology, Stockholm University
## Project outline, therapeutic development and field

### Time schedule and budget

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Start-up APP AB</td>
</tr>
<tr>
<td></td>
<td>1.5 mSEK</td>
</tr>
<tr>
<td></td>
<td>Optimisation, contact WHO, find partner, patent resubmission</td>
</tr>
<tr>
<td>Years 2-3</td>
<td>preparation to preclinical studies</td>
</tr>
<tr>
<td>5-10 mSEK</td>
<td></td>
</tr>
<tr>
<td>Years 3-5</td>
<td>preclinical studies</td>
</tr>
<tr>
<td>50 mSEK</td>
<td></td>
</tr>
<tr>
<td>Years 3-5</td>
<td>field studies &amp; production</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Image of a person]

![Image of a mosquito]
Investment Case

- A pharmaceutical R&D company with both scientific platform and proprietary molecules should be formed
- Based on world class science from the Stockholm University
- User patent filed on a unique technology
  1. Malaria parasite killing with cell-penetrating peptide vectors (filed)
  2. More planned due to flexibility of the method
Contact Details

LS Venture GmbH
Wasserwerkstrasse 12
8006 Zürich
Switzerland

Contact: Kadri Vunder Fontana, PhD
Tel.: +372 5017 209 /+4179744 77 60
E-mail: kadri.vunder@lsventure.com