AVENTEAL
DELIVERY OF BIO-PHARMACEUTICALS

WHAT IS A BIO-PHARMACEUTICAL?
**RECOMBINANT PROTEIN?**

Aventeal has developed an effective way to deliver a range of bio-therapeutics around the body.

This means of delivery has proven successful to deliver for a range of problems; such as malaria, autism, and brain cancer.

**WHAT DO YOU DO WITH THIS CONSTRUCT?**
Drug Delivery: Who needs this?

- One Billion in cash company - needs delivery
- Great potential - needs a way to reach targets
- Therapeutics for wide range of problems (HIV, Autism Cancer)
- Deal with Ferring Pharmaceuticals for $23.2 million (2014)

Pharmaceutical companies have treatments but need a noninvasive way to get it in.

Avental's product allows for a wider range of targets + requires minimal drug redesign.

Our Approach to this Problem

Our delivery module “clicks” onto a small modification added to the client’s therapeutic.
Therapeutic Tracim then takes the cargo where it needs to be- even into the brain. This is done by a series of subcutaneous injections instead of injecting through the skull or into the spinal cord.

DOES IT WORK?

Protein Delivery of an Artificial Transcription Factor Restores Widespread Ube3a Expression in an Angelman Syndrome Mouse Brain.

Bailus BJ1, Pyles B1, McAlister MM1, O'Geen H1, Lockwood SH1, Adams AN1, Nguyen JT1, Yu A1, Berman RF2, Segal DJ1.

Mol Ther. 2016 Jan 4. doi: 10.1038/mt.2015.236
SO JUST GO LICENSE IT

When presenting to potential clients, I hear:

“I don’t know…

If it works as you say it does.”
If it will work with my drug.”
If it is safe.”
That it is better.”

It requires someone to shepherd it through product development on the inside

So we need to prove it-

…preferably something that is useful to someone while proving the idea
WHAT DISEASE DO YOU WANT TO TARGET?

Rabies

WHY RABIES?

Officially 60,000 people a year die from this disease. (Many more deaths go unreported - perhaps as high as 3X the “official figure”) Once Rabies becomes symptomatic, the survival rate is 0%.

Rabies is a RNA virus. We MAY have a totally new way to treat this disease and others like it.
WHY DON’T I HEAR ABOUT RABIES DEATHS?
WHY SUCH PROBLEM IN THOSE COUNTRIES?
APPROACH

Rodent model- show system works with surrogate virus
Design the therapeutic to bind to the rabies virus-

Go to clinic with collaborator in Bangladesh-
Gather rabid street animals and see if the approach works
If successful, quickly move to human patients.
WHAT IF IT DOESN’T WORK?

Since we have a delivery system- Other ways to attack the virus can be tried

If it fails?:
Data from canine study will demonstrate delivery of the therapeutics- An OK “bunt hit”

IF IT DOES WORK?

This will be a new approach to antivirals in the market

It could be used to address-

Influenza
West Nile Virus
Ebola
Plus several other RNA viral diseases…
**Company Milestones**

<table>
<thead>
<tr>
<th>Q2</th>
<th>Q4</th>
<th>Q6</th>
<th>Q8</th>
<th>Q10</th>
<th>Q12</th>
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<tbody>
<tr>
<td>Cell culture proof of concept</td>
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<td>Characterizing delivery in rodent model</td>
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<td>Delivery into primates - working with UCD Primate Center</td>
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<td>First application project with IDT – rabies therapeutic</td>
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<td>Recruitment of other projects for delivery purposes</td>
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**HOW CAN YOU HELP?**

The Aventeal team is currently looking for $2 million in exchange for a 20% equity. If you are interested in helping change the way new therapeutics are delivered,
THANK YOU!

Questions?

brpyles@Aventeal.com
COMPETITIVE LANDSCAPE

<table>
<thead>
<tr>
<th></th>
<th>Low invasiveness</th>
<th>Body wide distribution</th>
<th>BBB penetration</th>
<th>Rapid Modification Possible</th>
<th>Tolerance</th>
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<td>Aventeal</td>
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<td>Nanoparticles</td>
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<td>Pumps</td>
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Revenue Projections

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*Revenue and expenses shown in thousands of dollars

**Assuming that by year 5 a secondary product serving the pet market had been developed
Exit Strategy

We feel that the most likely be acquisition by a pharmaceutical company.

Alternatively, since Aventeal can deliver a wide range of products, we can seek to offer non-exclusive license agreements while developing our own product line.

With an initial investment of $300,000, we will be able to create value in this product that will create interest within the sector.

Blood-BRAIN Barrier: makes brain delivery the most difficult place in the body
What will initial money go towards?

- Secure off-campus space
- Speed development of product application
- Demonstrate safety and efficacy in animal models
- Further develop the capability of the delivery module

Locations
Cargo