Introduction to Avacta and the Affimer ® Platform

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Chief Executive, Avacta Group plc
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Certain information in this presentation has been extracted from announcements made by the Company and this presentation is not a substitute for reading the Company’s announcements in full.
• Avacta is a pre-clinical biotech that has developed a proprietary, drug development platform called Affimer® technology.

• Avacta is building a pipeline of Affimer drugs for immuno-oncology.

• Avacta is also generating early revenues in the less regulated research and diagnostics markets.

• As a proven platform technology able to address multiple markets the downside risk is low, with significant upside potential as the Group builds a pipeline of valuable drug assets.

Platform technology – not a biotech “win or lose” risk

Immuno-oncology sector – >$10bn of deals since 2015 – many pre-clinical

Affimer technology is being used by pharma, biotech and diagnostics companies globally

Current market cap supported by non-therapeutic opportunity alone - therapeutic pipeline is all upside
Introduction
Avacta Group plc  AIM: AVCT

- 80 staff over two sites:
  - 1300 m² of bespoke laboratory, production and logistics space in Wetherby.
  - 790 m² of bespoke laboratory space in Cambridge.
- Balance sheet to support existing plans.
- Experienced management team with interests aligned to shareholders.
- Strongly supportive shareholder base.

Shareholders >5%
IP Group plc         24.8%
Lombard Odier       11.4%
Aviva               9.6%
Baillie Gifford     7.2%
Ruffer LLP          7.1%
Fidelity            5.9%
J O Hambro          5.7%
Introduction

Affimer®: The next-generation alternative to antibodies

- Antibodies can be used as drugs and for diagnostics because they can capture or block specific targets.
- Antibodies dominate markets worth in excess of $100bn despite having some significant limitations.
- Affimer technology does the same job as antibodies with none of those limitations.
- Affimer technology works - hundreds of Affimers have been generated that capture many different targets in therapeutic and diagnostic applications.
- Affimer technology is entirely proprietary to Avacta.
Affimer Technology
Affimer®: A proprietary protein scaffold with key technical benefits

What is an Affimer?

• Based on a naturally occurring protein and engineered to behave like an antibody.

• Its binding surface is created by loops which can be altered to capture different targets.

Key Benefits

• Smaller, simpler, more robust than antibodies.

• High affinity Affimers generated for new targets in a matter of weeks, much quicker than antibodies.

• Very specific to the target of interest – no cross reactivity.

• Easily modified and easily manufactured.

• Non-immunogenic (important for therapeutics).
Antibodies dominate large life sciences markets despite limitations

Research Reagents

$2bn

- Lab test kits, purification systems, imaging, biosensors ...
- Minimal barriers to entry.
- “Mass produced” antibodies have quality and performance issues.

Diagnostics

$11bn

- Centralised lab diagnostics and rapid point-of-care testing.
- Higher value tests and regulatory approval required.
- Specificity and robustness an issue in some tests

Therapeutics

$75bn

- Long and costly development times with higher development risk.
- Very high valuations of therapeutic assets.
- Key benefits of a small, flexibly formatted protein.
Avacta’s Business Model
Low down-side risk with significant up-side potential of therapeutics

As a proven platform technology able to address multiple markets, and already commercial, the downside risk for Affimers is low, with significant upside potential as the Group builds a pipeline of valuable drug assets.

1. Reagents
   Building a **profitable** reagents business **through licensing**

2. Therapeutics
   Building a pipeline of Affimer drug candidates in **immuno-oncology** for partnering
Affimer® Drug Development
What is Immuno-oncology?
Harnessing the immune system to fight cancer

The immune system is equipped to attack and destroy tumor cells .... It just needs a little help

What does an immuno-therapy need to do?

- Stimulate immune system cells such as T-cells to attack – agonists
- Block signals given by the tumor that switch off the immune attack – antagonists
- Target immune cells or chemotherapies to tumor cells – T-cell engagers/CAR-T/drug conjugates
Why Focus on Immuno-oncology?

$10bn of immuno-oncology deals in 2015 and this frenzy continues

(Apr 2016) $685m with $40m upfront in deal for ARG-115X asset

(Jan 2017) $31 m upfront and up to $338 m in success-based payments for checkpoint inhibitor plus 4 other programs

(May 2017) up to $115 m upfront and success-based payments for PD-L1/LAG3 bispecific

(Aug 2017) Gilead acquires Kite for $11.9bn

(Jan 2016) $170m in upfront and near term milestone for access to next gen platform

(May 2015) $0.5m upfront, tens $m in milestone payments for mRNA therapeutic Affimers
# Avacta’s Therapeutic Programmes

Leveraging Affimer key benefits to create differentiated medicines

## In-house pipeline

- T-cell engagers
- Immune-checkpoint inhibitors (combinations, bispecifics, biparatopics)
- Agonists

In order to create these therapies you need to be able to target more than one thing at once

## Key Benefit of Affimers

Ease of creating and manufacturing “multimers” that combine multiple Affimers

## Research Collaborations

- Gene delivery (Moderna Tx Inc)
- CAR-T (Memorial Sloan Kettering)
- Drug conjugates (Glythera)

In order to make these therapies effective you need a small protein, that is easily made by human cells

## Key Benefits of Affimers

Small size, stability and ease of production by cells
In-house Immuno-oncology Pipeline

PD-L1 antagonist provides lower risk route to first-in-man clinical trials

Building a pipeline of assets for licensing and progressing towards the first clinical trials to show safety in man

<table>
<thead>
<tr>
<th>Programme</th>
<th>Discovery</th>
<th>Lead Optimisation</th>
<th>Pre-clinical</th>
<th>Phase I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunoncology</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>AVA-004 PD-L1</td>
<td>Antagonist</td>
<td></td>
<td></td>
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<tr>
<td>AVA-017 LAG-3</td>
<td>Antagonist</td>
<td></td>
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<tr>
<td>AVA-014 CD27</td>
<td>Agonist</td>
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<tr>
<td>AVA-018 GITR</td>
<td>Agonist</td>
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<tr>
<td>AVA-008 CD19</td>
<td>T-cell engager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVA-002 CD3e</td>
<td>T-cell engager</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>AVA-012 CD22</td>
<td>Tumour targeting</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>AVA-020 5T4</td>
<td>Tumour targeting</td>
<td></td>
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<table>
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<tr>
<th>Technology Development</th>
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<tr>
<td>AVA-003 HSA</td>
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</table>
## Partnerships

**Proof-of-concept in other immuno-therapy modalities to support licensing deals**

<table>
<thead>
<tr>
<th>Programme</th>
<th>Discovery</th>
<th>Lead Optimisation</th>
<th>Pre-clinical</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>moderna</strong>&lt;br&gt;(Multiple undisclosed IO targets)</td>
<td></td>
<td></td>
<td></td>
<td>• Research collaboration with Moderna Therapeutics developing Affimers for messenger RNA therapies.</td>
</tr>
<tr>
<td><strong>glythera</strong>&lt;br&gt;AVA-006 (Model Systems)&lt;br&gt;Drug Conjugates</td>
<td></td>
<td></td>
<td></td>
<td>Proof of concept study&lt;br&gt;• Solvent stability of Affimers&lt;br&gt;• Control of Affimer-toxin ratio</td>
</tr>
<tr>
<td><strong>Memorial Sloan Kettering Cancer Centre</strong>&lt;br&gt;AVA-008 CD19 CAR-T</td>
<td></td>
<td></td>
<td></td>
<td>Proof of concept study&lt;br&gt;• CD19 binding Affimer&lt;br&gt;• Expression on a CAR-T cell&lt;br&gt;• Cell killing potency</td>
</tr>
<tr>
<td><strong>AVA-005 Fibrinogen</strong></td>
<td></td>
<td></td>
<td></td>
<td>• Modulation of blood clotting by targeting fibrinogen&lt;br&gt;• Multiple Affimer modulators</td>
</tr>
<tr>
<td><strong>AVA-016 α-2-antiplasmin</strong></td>
<td></td>
<td></td>
<td></td>
<td>• Modulation of blood clotting by targeting α-2-antiplasmin&lt;br&gt;• Multiple Affimer modulators</td>
</tr>
</tbody>
</table>
What Could the Affimer Therapeutic Platform be Worth?

Clinical stage non-antibody therapeutic protein platforms are highly valued

- **SWX: MOLN**
  - DARPin
  - $550m

- **NASDAQ: PIRS**
  - Anticalin
  - $240m

- **EBR: ABLX**
  - Camelid “Nanobody”
  - $900m
Therapeutic Milestones/Key Objectives

2016-17

- Significant de-risking of Tx platform

  - PD-L1 lead selection
  - Efficacy in CT26 syngeneic tumour model
  - No immunogenicity of Affimer scaffold
  - PK as Fc fusion acceptable
  - Multimeric formats easily expressed and functional
  - Fc formatted PD-L1 antagonist comparable with Atezolizumab surrogate in cell based assay
  - Human serum albumin/mouse serum albumin binders generated
  - Portfolio of Affimer binders to IO targets being established

- Moving into the clinic and partnering

  - Moderna taking Affimer leads into their clinical programmes
  - Proof of concept in CAR-T, gene delivery and drug conjugates
  - Assets with supporting data packages
  - Secure further licensing/co-development partnerships for checkpoint inhibitors and other IO modalities
  - Pre-clinical and clinical de-risking of the platform
  - Candidate selection and biology package for CD19/CD22/CD3e T-cell engager
  - Candidate selection and biology package for ICOS and CD27 agonists
Affimer® Reagents for Research and Diagnostics

Building awareness of the technology and early revenue generation
What are do we mean by “Affimer Reagents”?

- Antibodies are used as “reagents” in life sciences experiments to detect and quantify targets of interest in a huge range of tests called “immunoassays”.

- Many of these immunoassays are used for diagnostics in which a biomarker is detected in the blood or urine for example.

- Antibodies can also be used in a wide range of other life sciences applications to separate a target from a complex mixture, or to highlight certain features when imaging tissue, for example.
Affimer Reagents Licensing Model
Paid for evaluations of Affimer technology leading to licensing

Custom Affimer Service
- £25-50K per project
- R&D license only
- Prioritise commercial licenses and high volume repeat users

Commercial Licensing
- Research tools, lab assays, diagnostic immunoassays, separation systems
- Royalty bearing commercial licenses

Affimer Generation (9-12 weeks) → Customer evaluation → Licensing for product development → Commercial License → £ Royalties

£ Repeat business
 Licensing for in-house use
Strong growth in revenue and opportunity pipeline

- Full commercialisation through evaluations started in 2016
- >50 custom Affimer projects FY16-17 with high quality customers including 6 out of top 20 pharma
- 60% revenue growth; order book up 91% FY16-17
- First licensing/exclusivity deals following technical evaluations have been secured
  - Multiple deals for in-house use to support R&D and clinical trials
  - First product development license - with a global top three diagnostics company
Affimers Being Adopted Widely

Imunoassays, imaging, cancer diagnostics, microscopy ....
## Affimer Reagents Case Studies

Addressing unmet needs where antibodies struggle

### Diagnostics
(Global Diagnostics Developer)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Affimers Licensed</th>
<th>Future Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detect a multimeric protein structure but must not cross-react with the monomeric sub-units</td>
<td>3</td>
<td>Product development with royalty potential</td>
</tr>
</tbody>
</table>

### Drug Discovery
(Global Pharma)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Affimers Licensed</th>
<th>Future Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilise drug/target complexes for X-ray crystallography to support/rescue drug discovery project</td>
<td>Multiple to multiple targets</td>
<td>In-house R&amp;D</td>
</tr>
</tbody>
</table>

### Therapeutic Protein Purification
(Global Separations Company)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Affimers Licensed</th>
<th>Future Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purify therapeutic proteins from blood</td>
<td>3 (Evaluation on-going)</td>
<td>Large scale affinity purification systems for in-house use and licensing; royalty potential</td>
</tr>
</tbody>
</table>

### Consumer Testing
(Global Womens’ Health Company)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Affimers Licensed</th>
<th>Future Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert a competition assay into a sandwich assay to improve ease of use and accuracy</td>
<td>2 (Evaluation on-going)</td>
<td>Women's reproductive health home testing; royalty potential</td>
</tr>
</tbody>
</table>
The commercial terms and long term value of potential license deals depends on the market/application:

- Diagnostics applications offer the highest value but take longer for product development and regulatory approval.
- Other applications are quicker to market and such deals would be expected to be more frequent.
- Avacta has a pipeline of 20+ evaluations on going and is aiming to expand this pipeline and convert evaluations to licenses deals to build a profitable business unit.
- The first diagnostics related development license was agreed in May 2017 with a top three global diagnostics company.
- The potential value of a few £m of royalty based reagents revenues more than supports the current market capitalisation of the company.

### Typical Licensing Terms and Potential Value

<table>
<thead>
<tr>
<th>Example Deal</th>
<th>Market</th>
<th>Possible Upfront</th>
<th>Royalty</th>
<th>Time to Licensee’s Sales</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>Diagnostics</td>
<td>&lt; £0.1m</td>
<td>2-10%</td>
<td>3-5 yrs</td>
<td>£1-100m</td>
</tr>
<tr>
<td>Medium</td>
<td>Separations</td>
<td>No</td>
<td>5-15%</td>
<td>1-2 yrs</td>
<td>£0.1-10m</td>
</tr>
<tr>
<td>Small</td>
<td>Research Kits</td>
<td>No</td>
<td>5-15%</td>
<td>&lt;1 yr</td>
<td>£0.1-1m</td>
</tr>
<tr>
<td>Small</td>
<td>Imaging</td>
<td>No</td>
<td>5-15%</td>
<td>1-2 yrs</td>
<td>£0.1-1m</td>
</tr>
</tbody>
</table>

1. Management estimates based on current negotiations/evaluations
2. Time to ramp up could be shorter if an established antibody product in the market is to be converted to Affimer technology
# Reagents Milestones/Key Objectives

## From commercial traction to profitable business unit

### 2016-17

**Establish commercial traction**
- Key Hire: Chief Commercial Officer
- > 30 custom Affimer projects
- Affimers being evaluated by six of the top twenty pharma
- First commercial license deal
- Achieve first repeat business
- Third party reference stories
- Establish research partnership for lateral flow application
- US east coast and US west coast BD hires
- Revenue >£1.1m

### 2017-20

**Build a profitable business unit**
- Secure multiple commercial license deals across the non-therapeutic markets
- Generate royalty revenues
- Generate and validate in-house diagnostic Affimer assets for licensing
- Secure major repeat business key accounts
- Establish methods to unlock applications such as small molecules, IHC

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Leadership Team

Dr Alastair Smith, CEO
• Over 10 years experience as a public company CEO
• Was a leading UK biophysicist - founded Avacta in 2006
• World class scientific and technical knowledge with a highly commercial mindset

Dr Matt Johnson, CTO
• Genetics & Microbiology Molecular Biology
• 8 years at Abcam becoming global Head of R&D
• Joined Avacta in 2014

Mr Tony Gardiner, CFO
• Joined Avacta from AHR, an international architecture practice
• Chief Financial Officer of AIM listed Fusion IP plc 2007 – 2011 which was acquired by IP Group plc in 2014
• Joined Avacta in 2016

Dr Philippe Cotrel, CCO
• Over 20 years' commercial experience in senior positions in Amersham Pharmacia Biotech, Oxford Glycosciences, Affymetrix and Abcam
• Commercial Director of Abcam since 2008 – grew revenue from £36.7m to £144m over a 7-year period
• Joined Avacta in 2016

Dr Amrik Basran, CSO
• Over 10 years’ experience of both the biotech and pharma industries
• Director of Protein Biosciences at Domantis, Head of Topical Delivery (Biopharm) at GSK
• Joined Avacta in 2013
Summary

Affimer®: a proprietary alternative to antibodies

Affimer technology proven to work with key technical benefits and broad IP

Growing a profitable reagents business and building a drug pipeline in immuno-oncology

Low down-side risk of reagents business unit with significant therapeutic up-side opportunity not yet reflected in share price

Therapeutic opportunity significantly de-risked, a pipeline of multiple IO assets and on track for first-in-man 2019 with PD-L1 antagonist

Experienced management team with interests aligned to shareholders

Early revenues, a balance sheet to support existing plans and a supportive institutional base

Shareholders >5%
- IP Group plc 24.8%
- Lombard Odier 11.4%
- Aviva 9.6%
- Baillie Gifford 7.2%
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