



## **Therapies for major infectious diseases and related cancers**

Australia Biotech Invest 2013 : Melbourne 28 October 2013

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**Julie Phillips, CEO**  
[www. biodiem.com](http://www.biodiem.com)  
(ASX:BDM)

# BioDiem Agenda



**Challenges**



**Company Focus**



**Current Achievements**



**Future Investment Opportunity**

# BioDiem Challenges



## **Increasing resistance**

To antibiotics – major concern healthcare systems worldwide



## **Hard to treat**

Fungal infections, affecting vulnerable patients



## **No vaccines available**

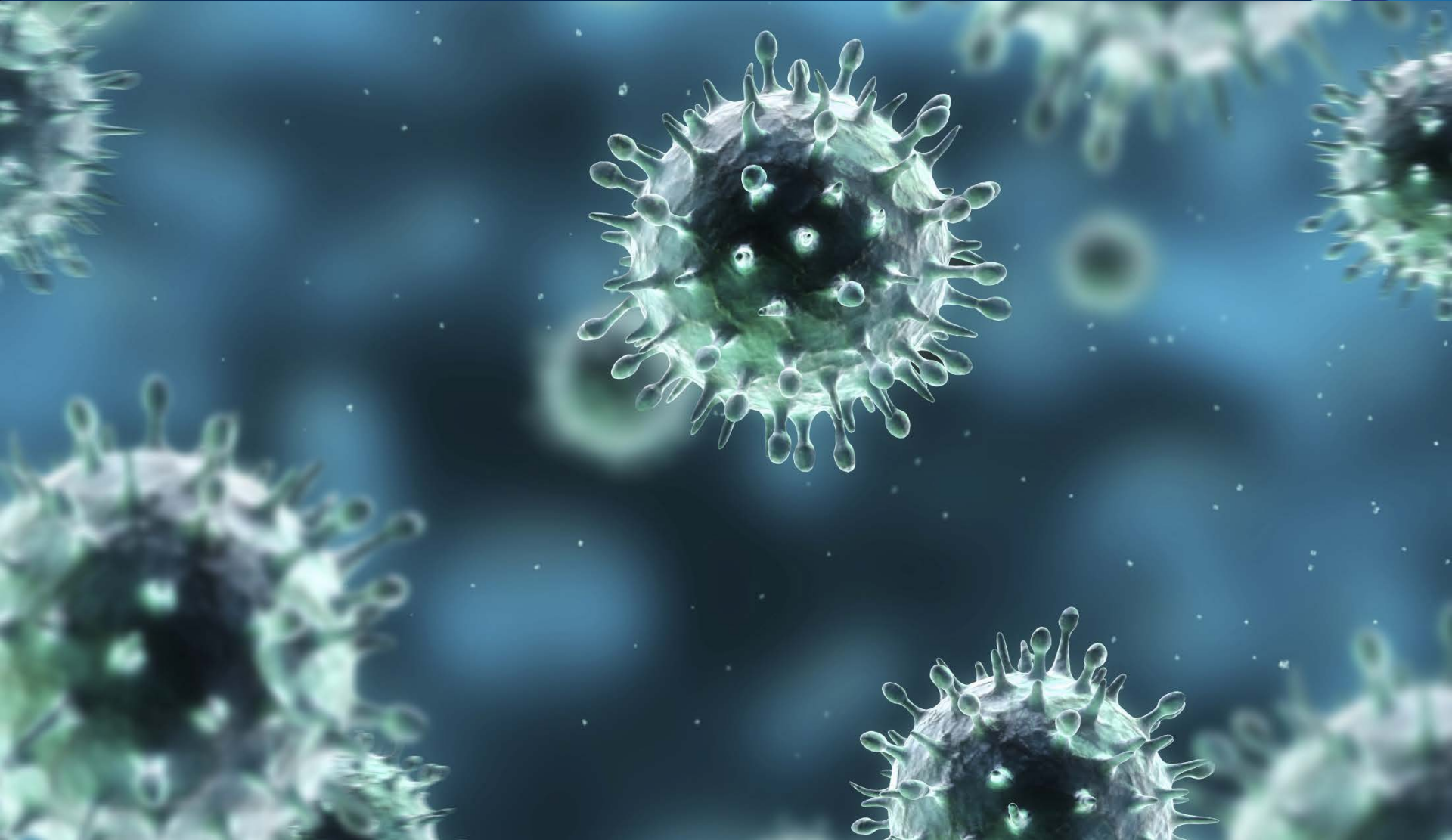
For worldwide diseases e.g. therapeutic vaccines for hep B, C and D



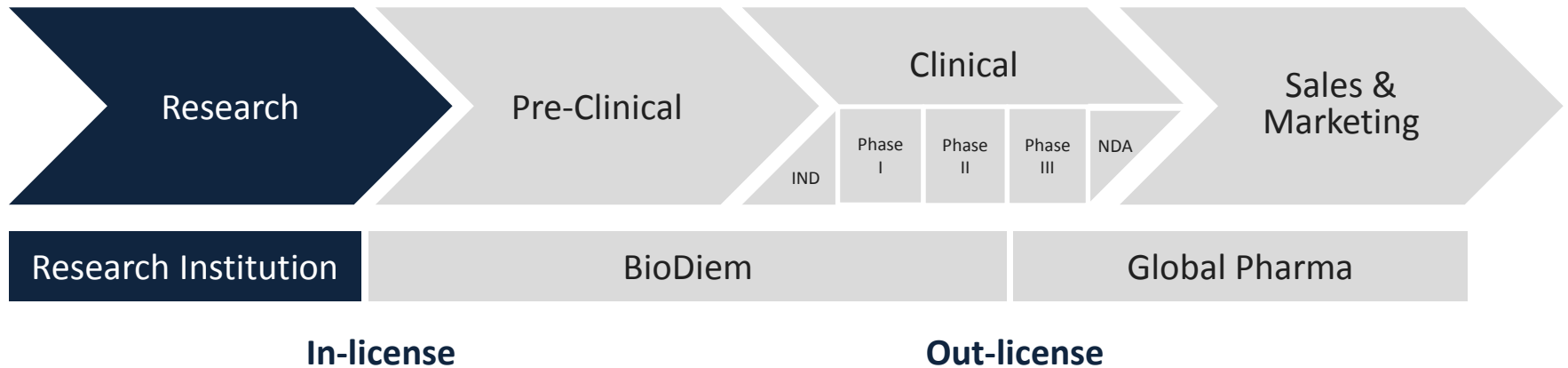
## **Product pipelines diminish**

Large Pharma focus on innovation, as product pipelines diminish  
> acquisition opportunities

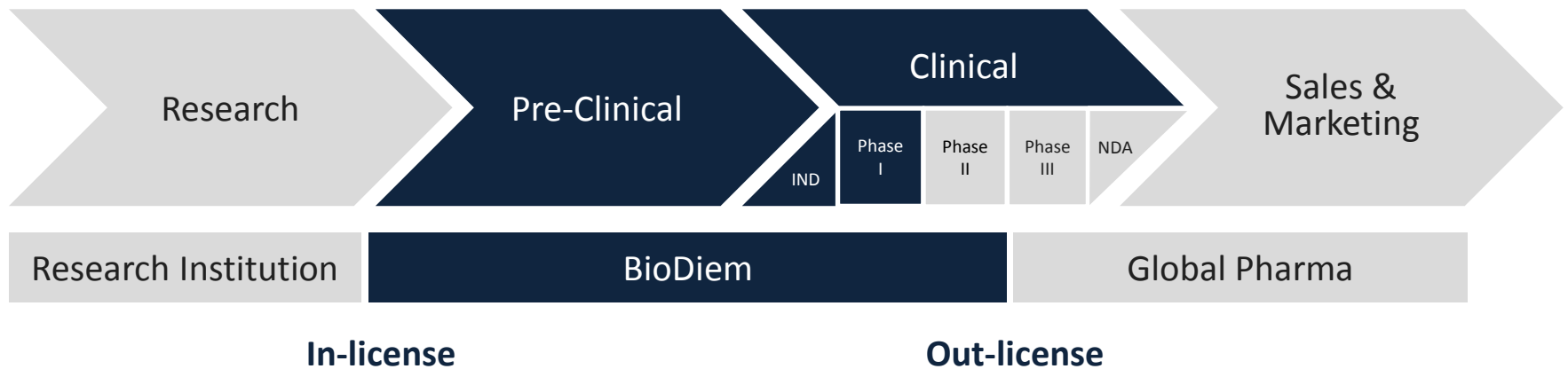
# BioDiem Company Focus



# BioDiem Business Model

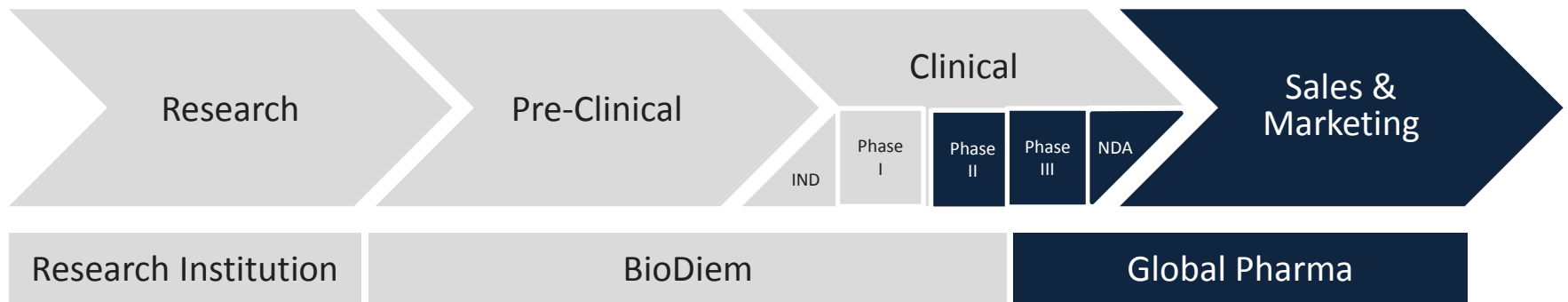


# BioDiem Business Model





# BioDiem Business Model



**In-license**

**Out-license**



## **Phase I trials**

Testing the drug on healthy volunteers



## **Phase II trials**

Testing the drug on a small number of patients with the disease



## **Phase III trials**

Testing the drug on hundreds/thousands of patients with the disease

# BioDiem Three core development programs



## Target



## Core Technology

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Influenza vaccines (seasonal and pandemic)



LAIV vaccine – licensed in multiple countries

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Vaccine development platforms  
Hepatitis B/D, nasopharyngeal carcinoma, TB



Hepatitis vaccine technology, LAIV viral vector, flavivirus and SAVINE technologies for novel therapeutic vaccines

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Infectious disease therapies  
Fungal disease: difficult to treat  
Bacterial disease: MRSA  
Parasites: Schistosomiasis



BDM-I antimicrobial compound

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# BioDiem Influenza Vaccines

## Live Attenuated Influenza Virus: LAIV

### Advantages



#### **Needle-free nasal delivery**

No trained personnel and blood/sharps precautions unnecessary



#### **Extensive clinical and market experience > 100m doses**

In Russia efficacy and safety in >500,000 adults/140,000 children



#### **Broader immune response**

Than seen with inactivated influenza vaccines



#### **High yields**

In egg-based or cell-based production (with no reliance on eggs)



#### **No adjuvant required**

## Live Attenuated Influenza Virus: LAIV

Product	Disease Targets	Current Partners	Development Status
LAIV (Influenza)	Influenza – Seasonal & Pandemic	WHO SII (India) BCHT (China) IEM (Russia)	Marketed with license revenues \$A1.3m FY2012 Phase II (cell-based technology) Seeking growth & out-licensing in more markets
	Avian (Bird) Flu	IEM/WHO	Clinical trials completed in Thailand and Russia

# BioDiem Vaccine development platforms

Opportunity to target multiple infectious diseases and related cancers



**LAIV Vector**  
(Vaccine delivery)



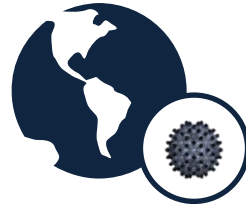
**SAVINE**  
(Custom vaccines)

Disease Targets	Vaccine development	Nasopharyngeal carcinoma (NPC), tuberculosis (TB)
Current Partners	VALNEVA (previously known as VIVALIS)	In-house
Development Status	First stage of development project completed	Seeking partner for more advanced data in animals

# BioDiem Hepatitis Vaccine (therapeutic)



Hepatitis D



Hepatitis B



Hepatitis C

Rights licensed from the University of Canberra

R&D program underway

**Proof-of-principle demonstrated (July 2013)**

# BioDiem Infectious disease therapies





# BioDiem BDM-I antimicrobial disease targets

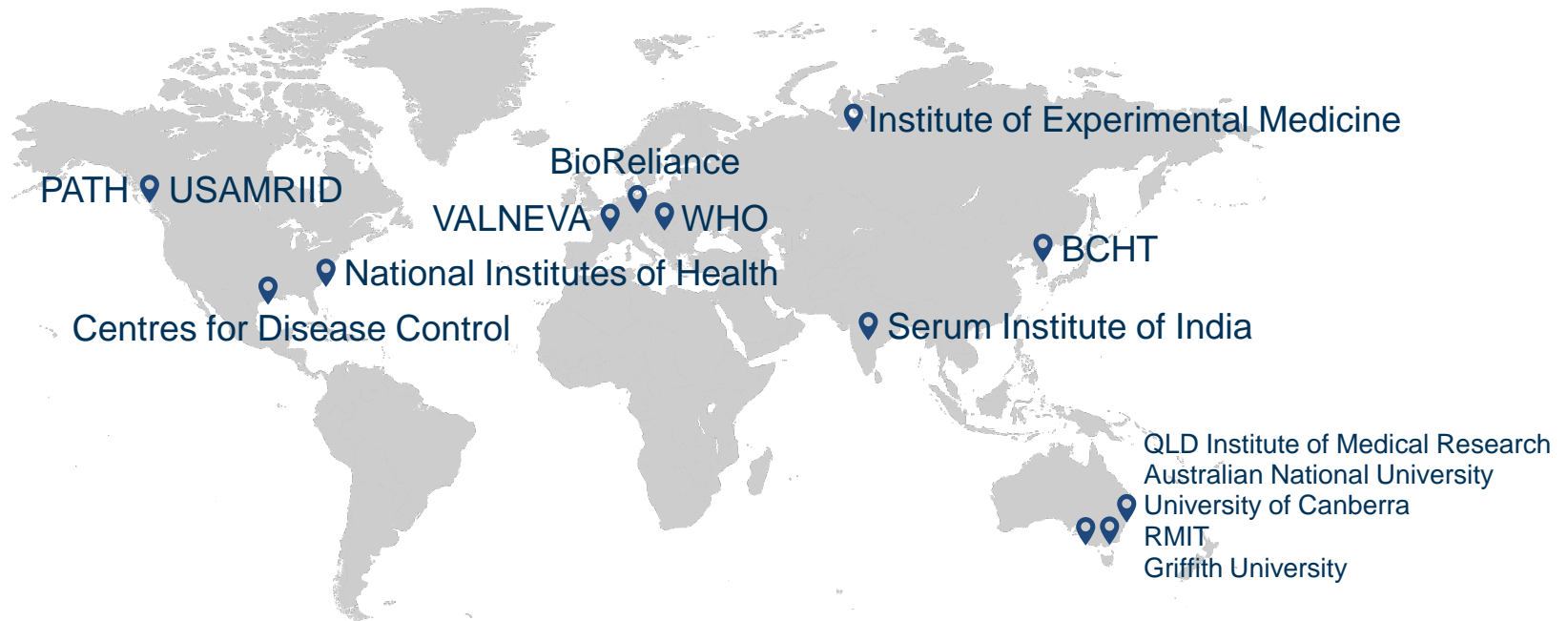
BDM-I currently in development as treatment against

- 'superbugs' such as antibiotic-resistant bacteria incl. TB, and others
- **hard-to-treat fungal** infections

Product	Disease Targets	Current Partners	Development Status
BDM-I (Antimicrobial)	Bacterial infections (tuberculosis, others)	US government backed research institutions	Entered <i>in vivo</i> testing in 2013; formulation development underway
	Fungal infections	US government backed research institutions	Entered <i>in vivo</i> testing in 2013; formulation development underway
	Parasitic diseases (schistosomiasis, others)	QIMR program	Entered <i>in vivo</i> testing in 2013; formulation development underway

# Expanding Global Partnerships and Alliances

## Global partnering & commercialisation network








# BioDiem Current Achievements

## Vaccine Development Pipeline

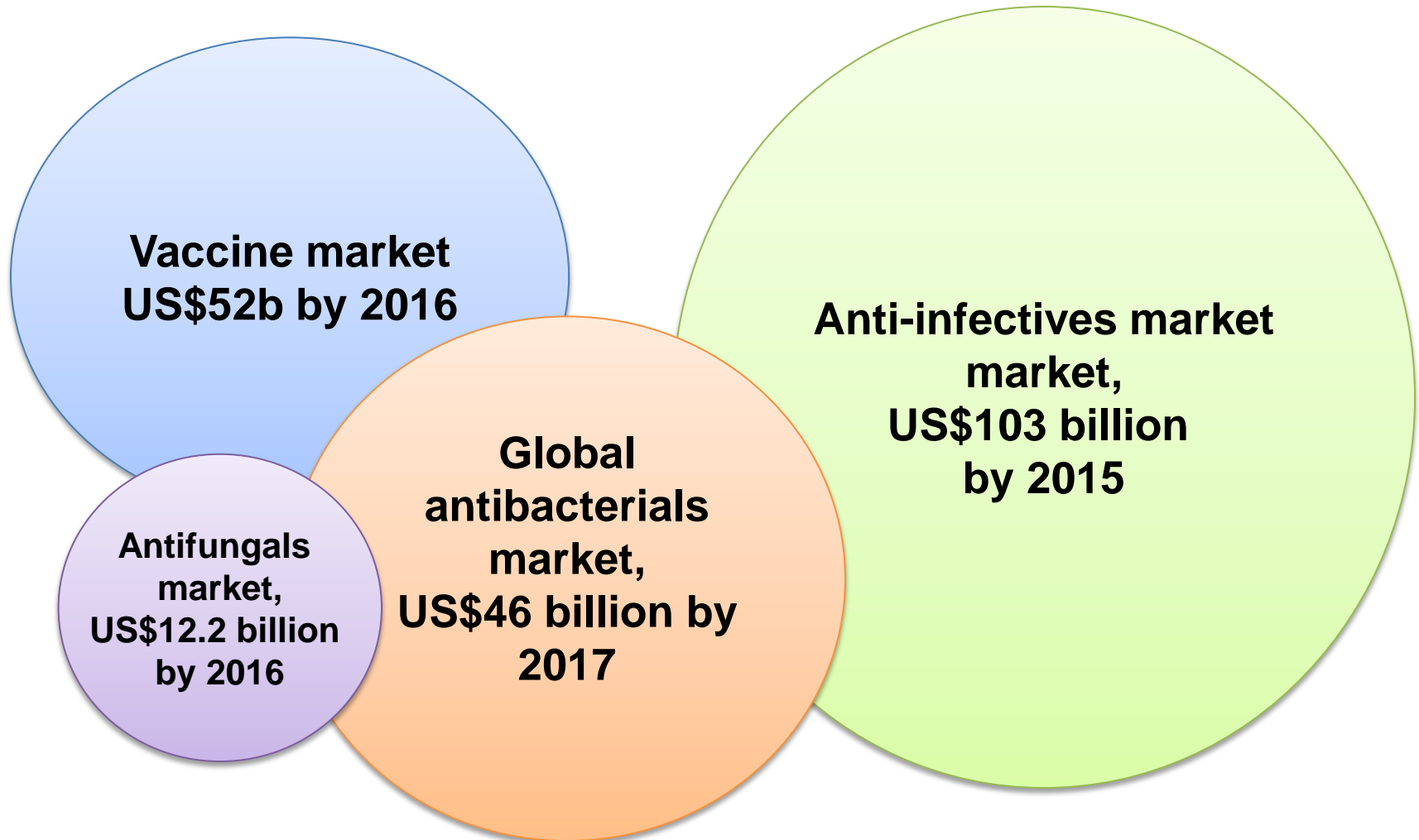
	Research	Preclinical	Phase I	Phase II	Phase III	Marketed
<b>Influenza vaccines</b> (Seasonal & Pandemic)	Cell based production					
	Egg based production					
	Licensed to World Health Organisation for public market in Developing Countries Licensed to Serum Institute of India and Changchun BCHO Biotech Co. for certain Developing Country private markets					
<b>LAIV</b> Viral Vector platform						
<b>Hepatitis D PLATFORM</b> (Hepatitis D/Hepatitis B therapeutic vaccine)						
<b>Flavivirus PLATFORM</b> (Dengue fever, West Nile, Murray River encephalitis)						
<b>SAVINE antigen technology</b> (Tuberculosis, NPC)						

# BioDiem Current Achievements cont'd

## BDM-I Development Pipeline

	Research	Preclinical	Phase I	Phase II	Phase III	On market
<b>Bacterial targets</b> (Biological warfare agents, MSRA, tuberculosis, other)						
<b>Fungal targets</b> (Difficult to treat fungi, incl. Scedosporium, Pneumocystis & Candida spp.)						
<b>Parasitic targets</b> (schistosomiasis, other)						

# BioDiem Future Investment Opportunity



# BioDiem BioDiem Limited

Market Cap	\$4.3 M
52 week range	\$0.03 – \$0.10
Cash (at 30 Jun 13)	\$1.2M
Shares	142.1m
Shareholders	890
Listed Options	24.6m

BioDiem will delist from the  
ASX on 15 November 2013

**Hugh Morgan AC**



Chairman

**Julie Phillips**



CEO

**Prof Larisa Rudenko**



Non-executive  
Director

**Prof Arthur Li**



Non-executive  
Director

**Don Brooks**



Non-executive  
Director

# BioDiem Next 12 months



Additional  
license revenues



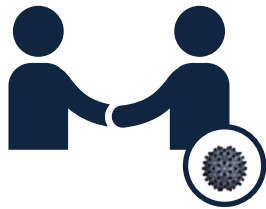
Further clinical  
trial results



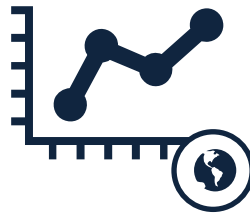
Vector program  
progress



Continued growth  
in IP portfolio



Further  
hepatitis vaccine  
progress



Sales and use of  
LAIV in new  
territories



BDM-I testing  
results in animal  
models



Finalisation of BDM-E  
out-licensing or sale



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