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Announcement

# Wholesale Investor – Singapore Capital Expo and Small Cap Showcase Presentation

**Melbourne, 10 November 2014:**

BioDiem's CEO, Julie Phillips presented at the Singapore Capital Expo and Small Cap Showcase held at the Singapore Convention & Exhibition Centre, in Singapore on Friday 7 November 2014. The Showcase event was designed to strengthen the capital links and cooperation throughout the Southeast Asia region, creating the next centre of emerging growth companies and a stage for innovation. The BioDiem presentation focused on BioDiem's BDM-I and the opportunity presented by the antimicrobial for collaboration and investment.

ENDS

## About BioDiem Ltd

BioDiem is an Australian biopharmaceutical company developing vaccines and antimicrobials targeting treatment and prevention of infectious diseases and related cancers. BioDiem's business model is to generate income from partnerships including with other vaccine development companies through existing and new licences to its LAIV vaccine and other technologies. Income comes from licence fees and royalties on sales.

BioDiem's lead technology is the LAIV (Live Attenuated Influenza Virus) vaccine used for seasonal and pandemic influenza vaccines and is given intranasally. For additional information, please visit www.biodiem.com

## Further information

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# Therapies for major infectious diseases and related cancers

**Wholesale Investor – Singapore Capital Expo and Small Cap Showcase**
**7th Nov 2014**

**Julie Phillips, CEO**
jphillips@biodiem.com

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# Challenges

## Invasive Fungal Infection after Natural Disasters

Kaitlin Benedict and Benjamin J. Park

Emerging Infectious Diseases • www.cdc.gov/eid • Vol. 20, No. 3, March 2014

OXFORD JOURNALS

## Clinical Infectious Diseases

**Bad Bugs, No Drugs: No ESKAPE! An Update from the Infectious Diseases Society of America**

## Dr. Arjun Srinivasan: We've Reached "The End of Antibiotics, Period"

FRONTLINE

October 22, 2013, 9:29 pm ET

THE VERGE

## Gonorrhea is about to become impossible to treat

*Antibiotic resistance means the STD might soon spread more aggressively*

## Australia Network News

### Calls for action on 'dire' drug-resistant TB threat in Asia and the Pacific

By Jemima Garrett

Posted Mon 14 Apr 2014, 7:05pm AEST

Bulletin of the World Health Organization

**Race against time to develop new antibiotics**

CBCnews | Health

## Superbug threat as grave as climate change, say scientists

'The international response has been feeble'

Thomson Reuters Posted: May 23, 2014 10:53 AM ET | Last Updated: May 23, 2014 10:53 AM ET

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# Challenges

## Increasing resistance

To antibiotics – major concern healthcare systems worldwide

## Hard to treat

Fungal infections, affecting vulnerable patients

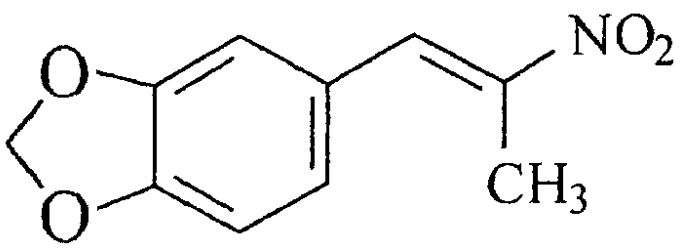
## Increase in prevalence

Due to climate change and vector movements.

## Product pipelines diminish

Large Pharma focus on innovation, as product pipelines diminish

# BDM-I: Antimicrobial





## Novel mechanism of action: Inhibits new target

**Protein Tyrosine Phosphatases (PTPs)**

- Involved in cell signalling
- Mimics tyrosine

**Heterogeneity of PTP function explains**

- Selectivity within species
- Difference in function in mammalian cells

# Spectrum of activity

## Invasive and superficial fungal infections

Some species of

- *Candida*
- *Cryptococcus*
- *Scedosporium*
- *Pneumocystis*

## Drug-resistant tuberculosis & gonorrhoea

- *Mycobacterium tuberculosis*
- *Neisseria gonorrhoea*

## Some protozoal infections

- *Trichomonas vaginalis; Plasmodium falciparum*

## and others…

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# *In vitro* activity

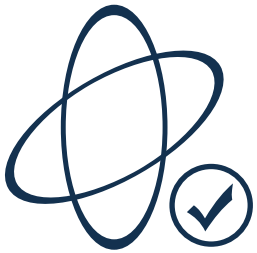
| Group | (µg/ml) | Group | (µg/ml) |
|---|---|---|---|
| **Fungi** | MIC90 *C. glabrata* * 1<br>MIC90 *C. glabrata* ** 2 | **G-ve bacteria** | MIC *Neisseria gonorrhoeae* 2<br>MIC *Campylobacter jejuni* 0.5 -2 |
| | MIC90 *Coccidiodes spp.* 0.25*<br>MIC90 *Coccidiodes spp.* 0.25** | | Other bacteria - potential biological weapons |
| | IC50 *P.carinii* <0.1***<br>IC50 *P. murina* 0.174*** | **Parasite** | *Schistosomiasis japonicum*<br>LC50 Adults (5 days)<br>LC50 Schistosomulae (24 hrs) |
| | MIC *Scedosporium prolificans* (three strains) 1-2 | | *Schistosomiasis masoni*<br>LC50 Adults (5 days)<br>LC50 Schistosomulae (8hrs) |

*50% Inhibition Endpoint
**100% Inhibition Endpoint
*** (based on %reduction ATP at Day3)

# Poised for proof-of-concept

| Product | Disease Targets | Current Partners | Development Status |
|---|---|---|---|
| **BDM-I** | Tuberculosis & bioterrorism | US govt backed research institutions | Successful screening result: preparation for *in vivo* testing |
| | Pneumocystis | US govt backed research institutions | Successful screening result: preparation for *in vivo* testing |
| | Scedosporium | Australian site | Successful screening result: seeking disease models |

## Next Steps:



Complete formulation studies

BDM-I testing in animal models

Clinical trial in orphan disease

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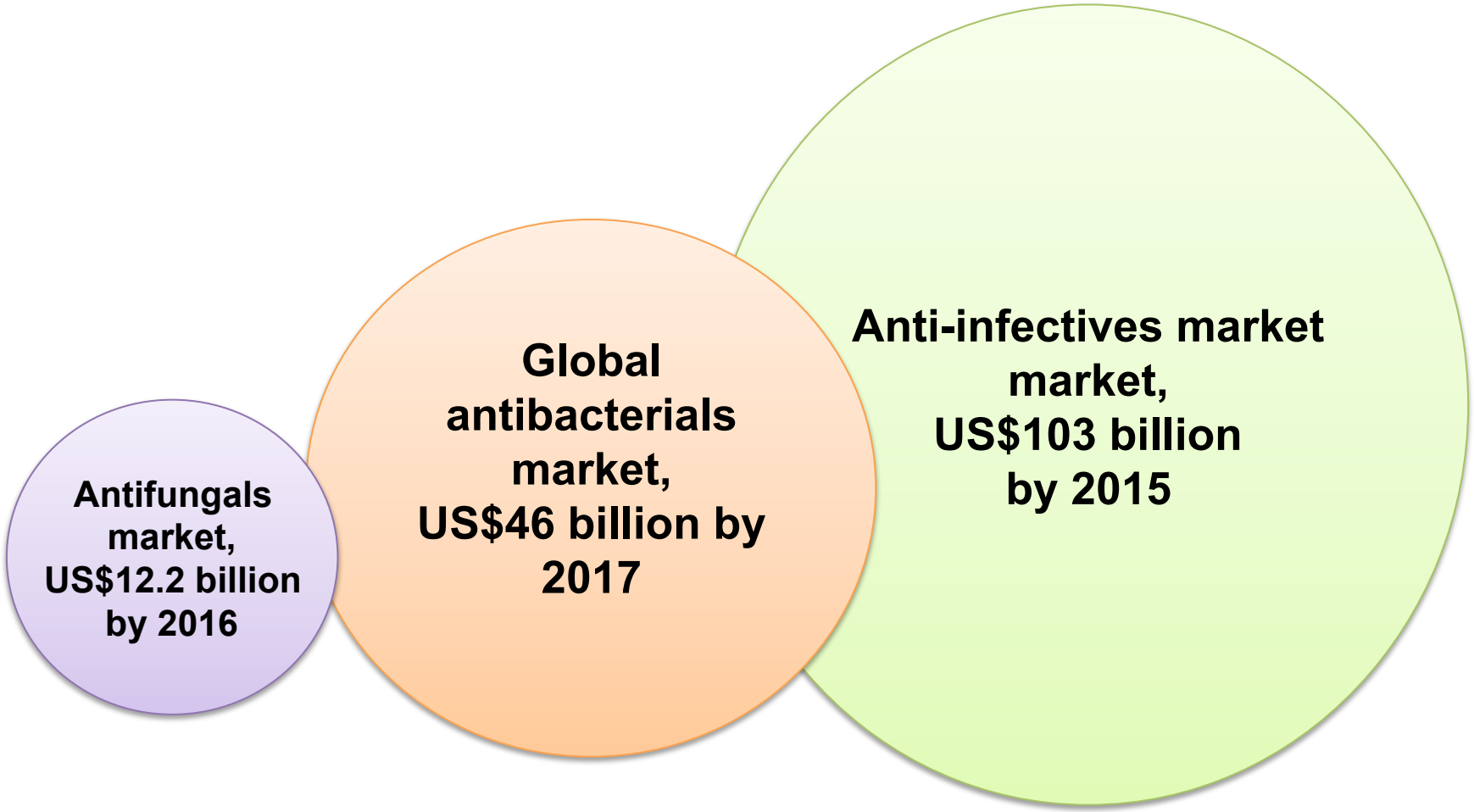
# Market Size Potential



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# Potential Product Range










# *"Generating Antibiotic Incentives Now"* legislation

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## GAIN: How a New Law is Stimulating the Development of Antibiotics

*May 28, 2014* | Project: Antibiotics and Innovation Project

On July 9, 2012, the Generating Antibiotic Incentives Now, or GAIN, provisions were signed into law by President Barack Obama as part of the Food and Drug Administration Safety and Innovation Act. This bipartisan legislation extends by five years the exclusivity period during which certain antibiotics—those that treat serious or life-threatening infections—can be sold without generic competition. This additional period of exclusivity increases the potential for profits from new antibiotics by giving innovative companies more time to recoup their investment costs.

"GAIN seeks to increase antibiotics' commercial value…."

# Opportunity

- Global problem in infectious disease

- BDM-I has
  - Activity vs important pathogens
  - Novel mechanism of action; granted patents
  - Collaborations in place with world class facilities

- Commercial opportunity for product/pipeline development
  - Life threatening and other infections
  - Attractive incentives e.g. GAIN legislation

- **Opportunity for investment & collaboration for development**
  - for niche high value diseases and
  - expanded product range

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