

**BIOTRON LIMITED**  
**(ASX:BIT)**

**Biotech Showcase**  
**Room Mission I**

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# Forward Looking Statements

This presentation may contain forward-looking statements with respect to the financial condition, results and business achievements/performance of Biotron Limited (ACN 086 399 144) and certain of the plans and objectives of its management. These statements are statements that are not historical facts. Words such as “should”, “expects”, “anticipates”, “estimates”, “believes” or similar expressions, as they relate to Biotron Limited, are intended to identify forward-looking statements. By their nature, forward-looking statements involve risk and uncertainty because they reflect Biotron’s current expectations and assumptions as to future events and circumstances that may not prove accurate. There is no guarantee that the expected events, trends or results will actually occur. Any changes in such assumptions or expectations could cause actual results to differ materially from current expectations.

# BIT225 Snapshot

- First in class drug and new drug target for treatment of HIV and Hepatitis C virus (HCV)
- Seven clinical trials completed; another is fully recruited with preliminary data 1Q15
- Demonstrated clinical activity against HCV G1 and G3
- Independently shown to have HCV pan-genotype activity *in vitro*
- Efficiently inhibits HIV replication in monocyte/macrophage reservoir cells *in vitro* and *in vivo*
- Patent position over compound and its uses
- Compound is relatively easy to make and formulate; very stable at room temperature – important for supply chains
- Significantly undervalued compared to other HCV drugs = potential for considerable upside

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# Significant Progress During Last 12 Months






ACTIVITY	STATUS/OUTCOME
Phase 2 HIV/HCV co-infected trial	100% SVR12 data reported for HIV/HCV G3
Phase 2a HIV trial	Impact on immune activation reported
Phase 2, three-month dosing HCV G1 & G3 trial	Fully recruited; preliminary interim data anticipated 1Q15
Development of BIT225 capsules	Improves delivery of BIT225, in a user friendly format suitable for larger scale trials
Patent position strengthened	Key patents for BIT225 and other compounds issued in the USA and other jurisdictions
Completion of \$4 million capital raising	Fully underwritten rights issue closed over-subscribed with no shortfall

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# Biotron's Core Technology

- Identification of new class of viral proteins called **viroporins**
  - Small hydrophobic proteins with ion channel activity
  - Key roles in production and release of infectious virus
  - Present in influenza (M2), HIV (Vpu), Hep C (p7), Dengue (M) , SARS (E) and others
- Designed library of new drugs to target these viral targets
  - >250 compounds designed , synthesised and screened
- Developed proprietary bacterial screening assays for HIV-1 Vpu, HCV p7, Coronavirus E, Influenza M2, and Dengue M proteins
- Generating portfolio of first-in-class drugs to treat these viral infections
  - Initial focus on HIV and Hep C
  - Promising early stage Dengue program

# Biotron - Advanced Pipeline

INDICATION	COMPOUND	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
Hep C	BIT225					
HIV/Hep C	BIT225					
HIV	BIT225					
Next generation - HCV	BIT314					
Dengue	Leads					

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# Large and Growing Global Market for Hepatitis C

- Forecast to grow to over \$19bn by 2016
  - 180 million people infected worldwide (3% world population)
  - Estimated 3 to 5 million patients in US & 30 million patients in China
- New drugs have demonstrated significant pricing power
  - Gilead's Sovaldi at US\$84,000 for a 12 week course; Harvoni at US\$94,500
  - Sovaldi Q1-3 2014 sales ~US\$8.6bn
- Recent new HCV drug combinations not optimal
  - Lengthy treatment – 12 weeks or more
  - Expensive
  - Not pan-genotypic – **BIT225 is pan-genotypic *in vitro***
  - Not as effective against HCV G3 – **BIT225 has good activity against HCV G3**
  - Potential treatment issues due to high re-infection rates in some populations

# Hepatitis C Virus – Market Opportunity

HEPATITIS C GLOBAL PREVALENCE BY COUNTRY (2010)

COUNTRY	INCOME CLASSIFICATION	MOST PREVALENT GENOTYPES	ANTI-HCV (%)	NO. INFECTED
China	Upper-middle	1,2,6	2.2	29,791,212
India	Lower-middle	1,3	1.5	18,216,960
Egypt	Lower-middle	4	14	11,826,360
Indonesia	Lower-middle	1,2	3.9	9,436,986
Pakistan	Lower-middle	3	5.9	9,422,403
Russia	Upper-middle	1,3	4.1	5,796,498
USA	High	1,2,3	1.8	5,367,834
Dem. Rep. of Congo	Low	4	6.4	4,010,240
Nigeria	Lower-middle	1,2	2.1	3,323,439
Japan	High	1,2	2.4	3,058,008
Cameroon	Lower-middle	1,2,4	13.8	2,754,204
Brazil	Upper-middle	1,3	1.4	2,609,670
Uganda	Low	1,4	6.6	2,230,536
Philippines	Lower-middle	1	2.2	1,932,854
Italy	High	1,2	3.2	1,923,136
Ukraine	Lower-middle	1	4	1,864,840
Uzbekistan	Lower-middle	1,3	6.5	1,774,955
Turkey	Upper-middle	1	2.2	1,549,108
Ethiopia	Low	1,2,4	1.9	1,500,734
Thailand	Upper-middle	1,3,6	2.2	1,499,058
<b>World's Population</b>			<b>2 – 3%</b>	<b>130-170 million</b>

Points to note:

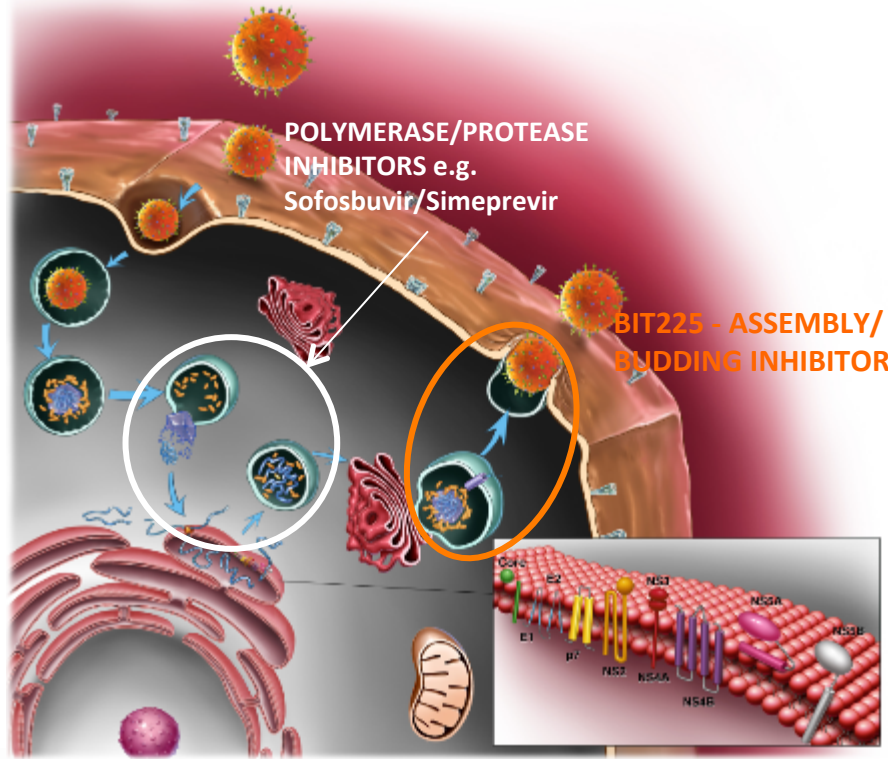
- USA and Europe represent major markets but other, larger markets are emerging.
- Pricing in these markets will be challenging with current new DAA treatments

Upper-middle Source: Evolving epidemiology of hepatitis C virus (Clin Microbiol Infect. 2011; 17(2): 107-115).  
Income classification from The World Bank, 2013.

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# BIT225 – First of a New Class of HCV Drugs



- ✓ Novel, oral, small molecule
- ✓ Only one of its class (p7 inhibitor) in clinical trials
- ✓ Inhibits viral assembly and infectivity
- ✓ Pan-genotype activity:
  - ✓ Active *in vitro* against all main genotypes
  - ✓ Shown to be clinically active against hard-to-treat HCV Gen 1 (1a and 1b) and Gen 3
- ✓ Potential to fill the gaps left by other HCV drugs, e.g. HCV G3 and to shorten treatment duration

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# BIT225 - Proven Clinical Track Record

- Over 180 patients and healthy volunteers dosed with BIT225 to date
- Positive data recorded in all trials
  - HCV G1 (BIT225-005) – 100% receiving 400mg (28 days in combination with 48 weeks IFN/RBV) were **virus-free** at 48 weeks
  - Co-infected HIV/HCV GT3 (BIT225-006) – 100% completing course of 300mg (28 days in combination with 48 weeks IFN/RBV) were HCV-free 12 weeks post-treatment (SVR12) i.e. **cured of HCV infection**
  - BIT225 increases the rate at which HCV is cleared (especially for GT3)

# BIT225 Clinical Program – Trials to Date

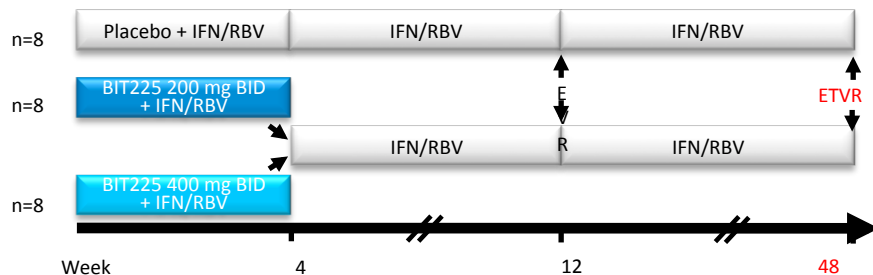
- **BIT225-001:** Phase 1a, single dose, dose escalating study in healthy volunteers (48 subjects; Aust)
- **BIT225-003:** Phase 1b, 7-day, repeat dose study in HCV+ patients (35 and 200 mg BID; 18 subjects; Aust)
- **BIT225-004:** Phase 2a, 10-day, repeat dose study in HIV+ patients (400 mg BID; 21 subjects; Thailand)
- **BIT225-005:** Phase 2a, 28-day, repeat dose study in HCV G1 patients in combination with PEG/RBV (200 and 400 mg BID; 24 patients; Thailand)
- **BIT225-006:** Phase 2, 28-day, repeat dose, open label study in HIV/HCV G1 and 3 co-infected patients in combination with PEG/RBV (300 mg BID; 12 patients; Thailand)
- **BIT225-007:** Phase 1, BE/PK study in healthy volunteers, cross-over, single dose comparing capsule formulation with existing powder (400 mg BID; 12 subjects; Aust)
- **BIT225-008:** Phase 2, 3 month, repeat dose study in HCV+ patients (G1 & 3) in combination with PEG/RBV (200 mg BID (capsule formulation); 60 subjects; Thailand); FULLY RECRUITED

*NB BIT225-002 was an ex vivo study of BIT225 on HIV-infected cells isolated from HIV-positive patients*

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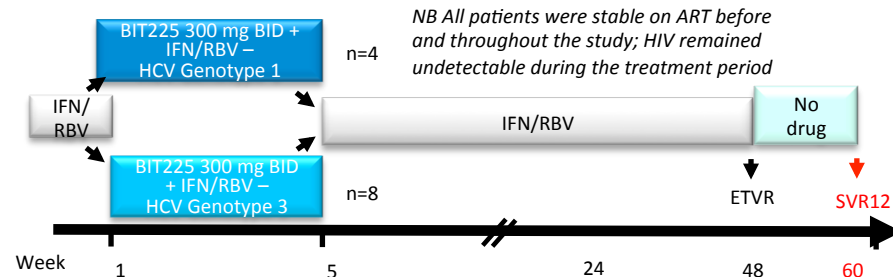
# BIT225 - Clinical Activity in HCV and HIV/HCV Patients

## BIT225-005 (HCV G1)

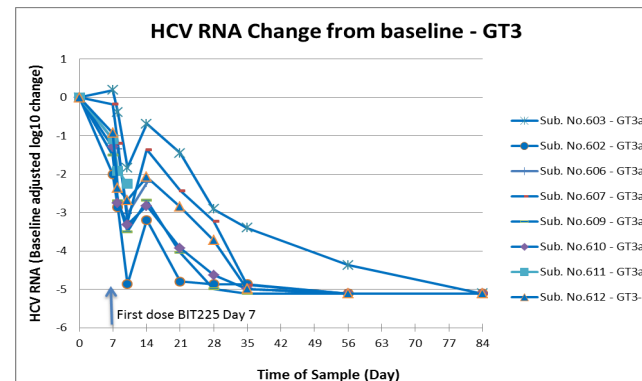


Treatment	Median log reduction at 35 days	% Complete EVR (<50 IU/ml at 12 weeks)	% ETVR (<50 IU/ml at 48 weeks)
400 mg BIT225 + SOC	-4.957	86	100
200 mg BIT225 + SOC	-4.351	88	88
Placebo + SOC	-3.649	63	75

## BIT225-006 (HIV/HCV)

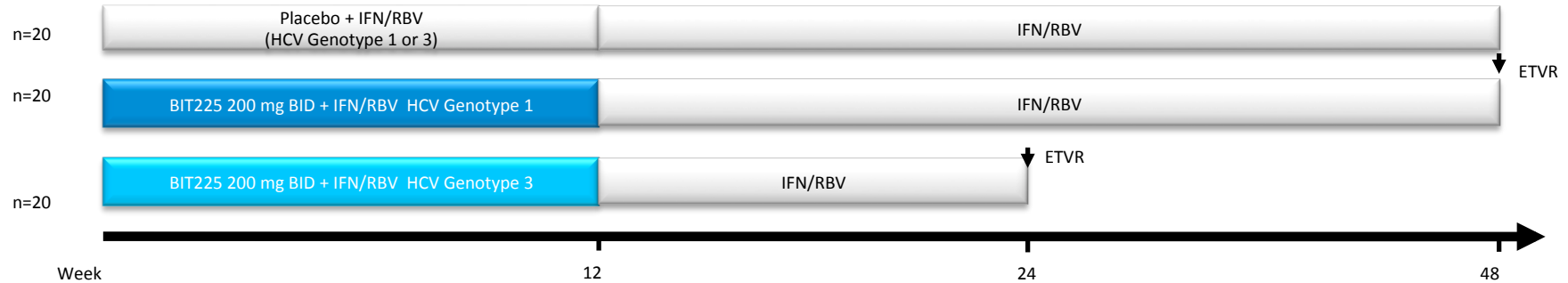


NB All patients were stable on ART before and throughout the study; HIV remained undetectable during the treatment period



**Week 60**  
All GT3 patient who completed treatment are HCV-free (SVR12)

# BIT225-008: Phase 2 HCV Three-Month Dosing Trial



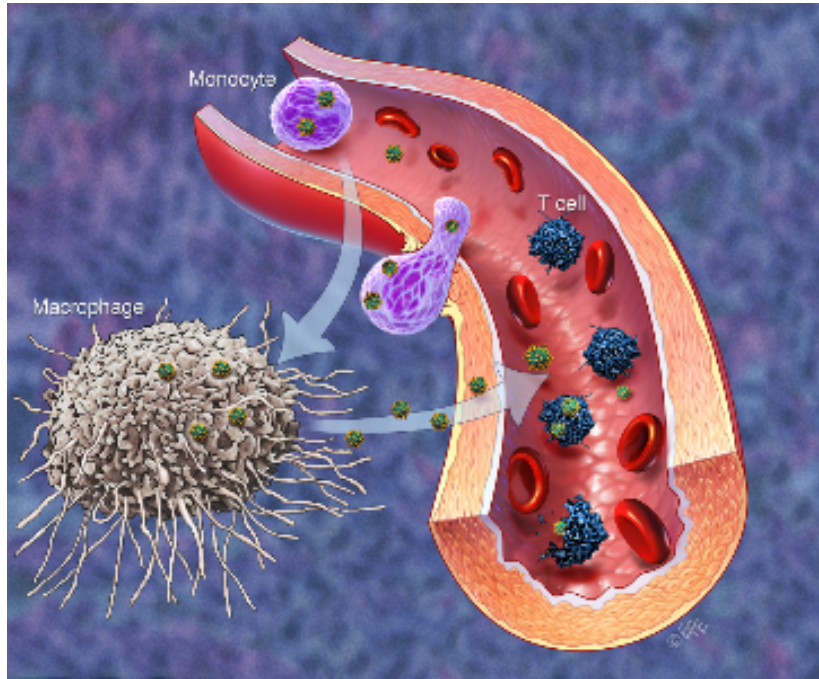
## Design:

- Randomised, placebo-controlled, double-blind trial (n=60)
- Treatment naïve, HCV gen 1 and 3
- 3 months dosing with BIT225 in combination with IFN/RBV
- Using new capsule formulation
  - 1.6 fold higher blood levels than previous formulation
- Fully recruited (Thailand); Preliminary interim data expected 1Q15

## Aims:

- Demonstrate safety of BIT225 with 3 months dosing
- Extend HCV gen 3 efficacy data
- Provide key data to assist with determining future dosing with BIT225 capsules

# HIV – Towards a Cure

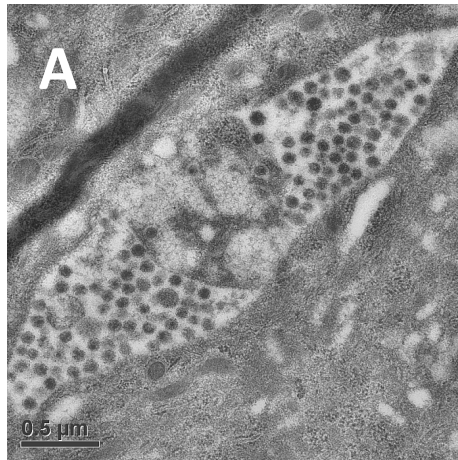


- Infection rates in Australia are at 20 year high
- Over 1.1 million people living with HIV in the USA, with 1 in 6 unaware of diagnosis
- US\$11.9 bn sales in US, Europe and Japan in 2013; expected to grow to US\$16.8 bn by 2020
- HIV patients need to stay on antiretroviral drugs (ART) to keep virus levels under control
- New mode of actions drugs are needed to eradicate or cure HIV infection

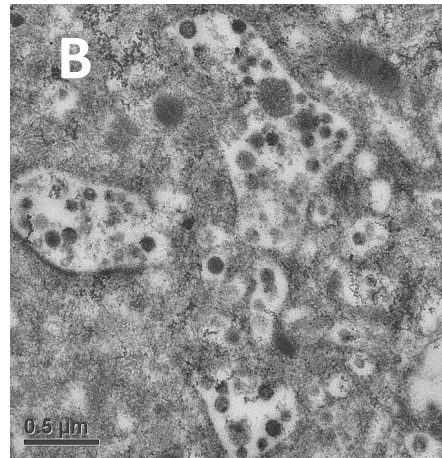


# BIT225 Targets HIV in Reservoir Cells

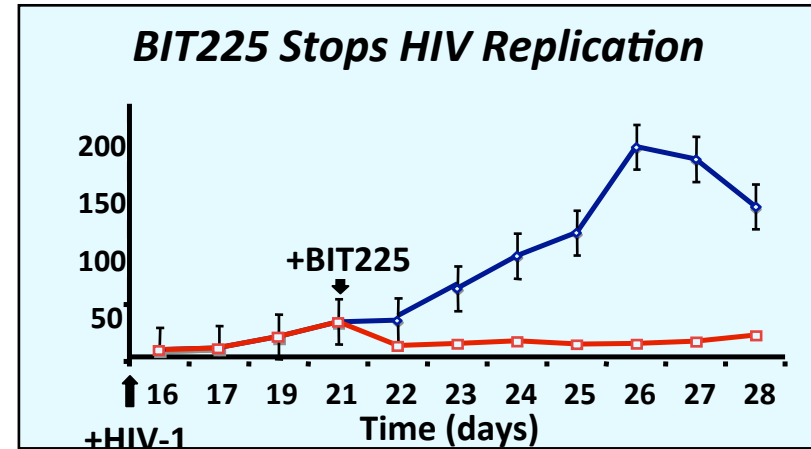
- BIT225 inhibits assembly and budding of new virus
- Phase 2a trial (004) showed that BIT225 can reduce HIV levels in macrophage cells *in vivo*, paralleling *in vitro* studies
- Potential benefits on immune aging and HIV-associated dementia
- Potential for use in future virus eradication treatment



(A) Untreated Controls



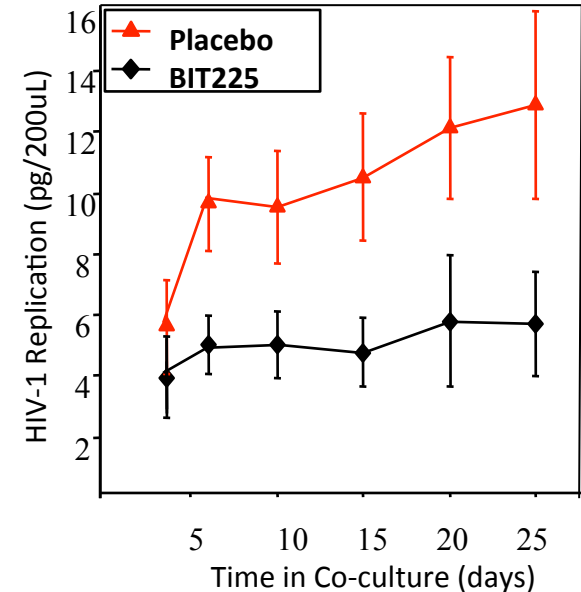
(B) BIT225 treated cells



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# BIT225 – Proven Clinical Activity Against HIV

- Phase 1b/2a randomised, placebo controlled, double-blind trial
  - 24 patients, HIV-1 positive, treatment-naïve
  - 10 days dosing with BIT225 (monotherapy)
- Results demonstrated that:
  1. BIT225 significantly reduces HIV levels in the macrophage (reservoir) cells in HIV-infected subjects
  2. BIT225 can cross the blood-brain barrier, opening up the possibility of treatment of AIDS-related dementia



**Results support a potential role for BIT225 in cure/eradication strategies**



# Dengue Virus Program

- 2.5 billion people (40% world population) live in areas at risk of Dengue
- A leading cause of illness and death in tropics and subtropics
- ~100 million people infected yearly
- No approved vaccine or therapy
- Transmission is by mosquito; most prevention programs target the vector
- Biotron has a number of compounds with promising activity at early stage of development
- Targeting Dengue M protein –  
Similar class to HIV/Vpu and HCV/p7



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# Investment Proposition

- HCV and HIV are high growth, multi-billion dollar markets
  - Treatment gaps remain
- BIT225 is a novel approach with demonstrated promising efficacy in Phase 2a/2 clinical trials
  - Represents a new class of direct-acting HCV drugs
  - Potential to fill significant HCV treatment gaps
    - HCV Genotype 3
    - HIV/HCV co-infected patients
    - Cirrhotic patients
    - Re-infections
  - Potential to eradicate important HIV reservoirs, plus may impact on HIV-associated dementia
- Flexibility to combine with any other HCV and HIV drug combinations
- Significantly undervalued in comparison with other HCV companies
- Additional unrealized value in early stage Dengue program and in compound library

# Outlook for 2015

- Complete BIT225-008 Phase 2 HCV trial currently in progress
  - Fully recruited; preliminary interim data expected late 1Q15
- Investigational New Drug application(s) (INDs)
  - Engaged with FDA - pre-IND consultation HCV combination trial with DAA
  - Complete IND-related activities
    - Modeling of pharmacokinetic data from previous trials to determine optimal BIT225 dose and frequency in IND trials
    - Additional IND-supporting *in vitro* laboratory studies with BIT225
    - Drug-drug interaction studies
  - File IND application(s)
- Expand earlier stage drug programs e.g. Dengue virus when funding available

# Financial Information

## Key Financial Metrics

Ticker Code	ASX: BIT
Share Price (9 Jan 2015)	A \$0.125
Market cap	A \$35 million
12 Month Trading Range	A \$0.067 – 0.29
Shares Outstanding	279 million
Cash Position (09/14)	A \$0.587 million NB - Completed rights issue 11/14, raising \$4.1 mn before costs

## Board

Michael Hoy	Non-executive Chairman
Michelle Miller	Managing Director
Susan Pond	Non-executive Director
Rob Thomas	Non-executive Director
Denis Wade	Non-executive Director

## 12 Month Share Price Performance



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