Biotron Limited
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6 October 2017

The Manager Companies
ASX Limited
20 Bridge Street
Sydney NSW 2000 (15 pages by email)

Dear Madam

**PRESENTATION TO INVESTORS**

I attach a PowerPoint presentation as presented by Biotron Limited's Managing Director, Dr Michelle Miller, to investors.

Yours sincerely

Peter J. Nightingale
Company Secretary

pjn9101

# BIOTRON LIMITED
# (ASX:BIT)

## Investor Update
October 2017

# 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.

# Biotron Limited - Investment Highlights

- Spun out from John Curtin School of Medical Research at the Australian National University
- Listed on ASX (ASX:BIT)
- Headquartered in Sydney, Australia

| 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 |

- Infectious disease focus
- Phase 2 clinical program - HIV-1 eradication trial data expected 4Q17
- Pipeline of earlier stage anti-viral programs including respiratory viruses, Dengue virus, hepatitis B virus and others
- Several near term, value-adding milestones anticipated over next few months

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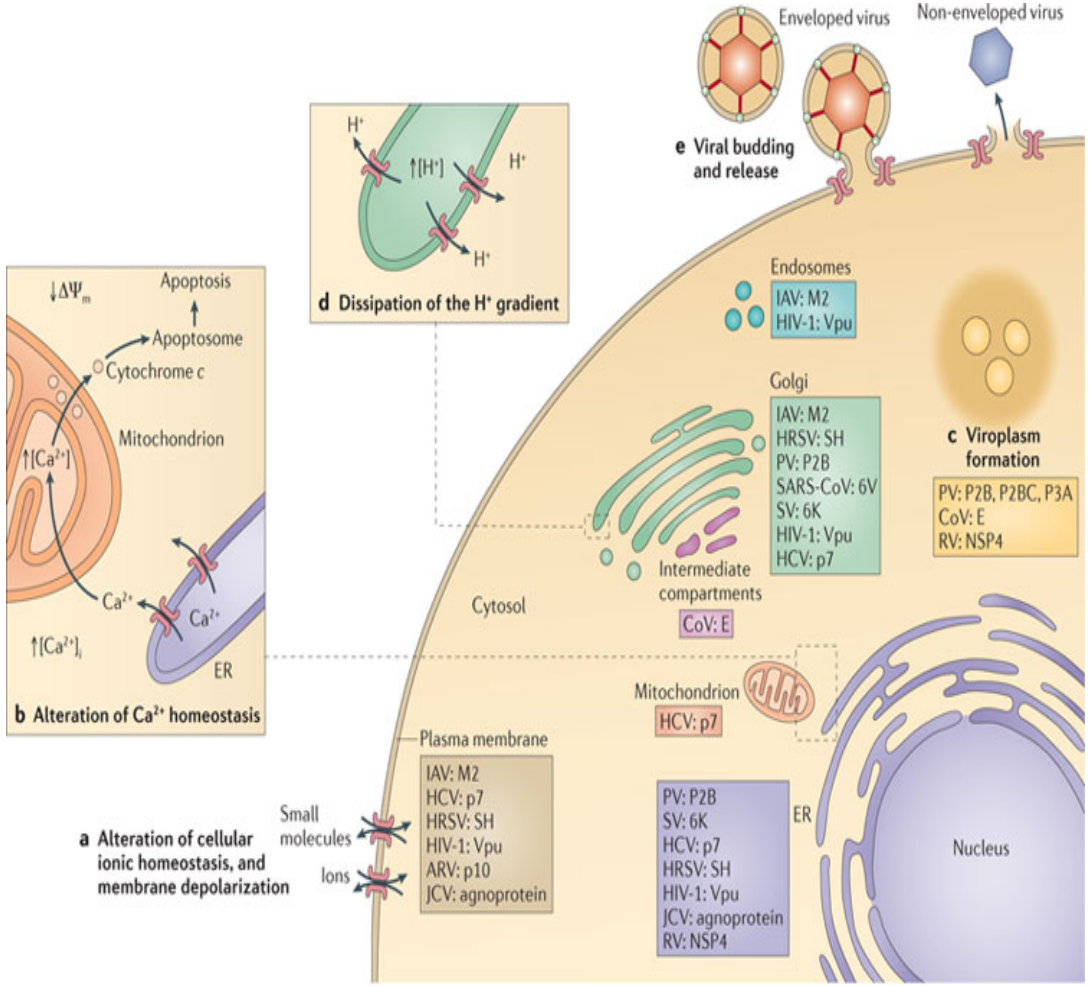
# Biotron – Leader in Antiviral Drug Development

- Expertise is the development of a new class of antiviral drugs targeting viral-encoded viroporin proteins
- Viroporins are present in broad range of viruses: Influenza (M2), HIV-1 (Vpu), HCV (p7), Dengue and West Nile (M protein), SARS (E protein) and others
- Broad platform:
  - Rapid, proprietary primary bacterial cell-based screening assays for target proteins
  - Focused library of compounds that target these viral proteins
  - Pipeline of internally-generated, first-in-class small molecule viroporin inhibitors for key markets

# Viroporins




- Small hydrophobic proteins with ion channel activity
- Form hydrophilic pores in host cell membranes
- Key stages of the viral cycle such as virus uncoating, transport and maturation are ion-influenced processes in many viral species
- Crucial for viral pathogenicity due to involvement in various steps of virus life cycles
- Ideal therapeutic targets

*Nature Reviews Microbiology* **10**, 563-574

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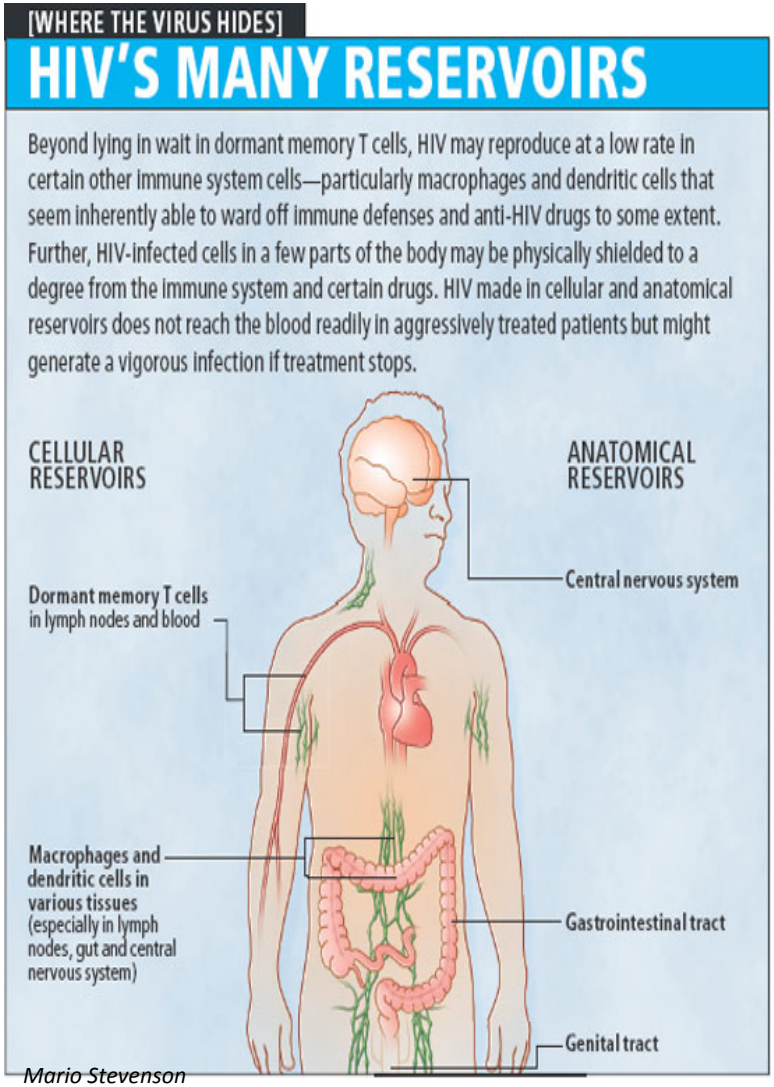
# HIV-1 Eradication




*Mario Stevenson*
*Scientific American* ***299****, 78 - 83 (2008)*

**Current drugs do not eradicate HIV-1 virus**

- HIV-1 remains hidden in reservoirs, leading to chronic, life-long infection
  - Invisible to body's immune defenses
  - Not sensitive to anti-HIV-1 drugs
- New mode of actions drugs are needed to eradicate or cure HIV-1 infection

**Why is HIV-1 eradication necessary?**

- Long-term health implications e.g. HAND, immune activation, etc
- Cost of treatment
  - ~ $20 billion p.a. world wide
  - Major burden on healthcare systems

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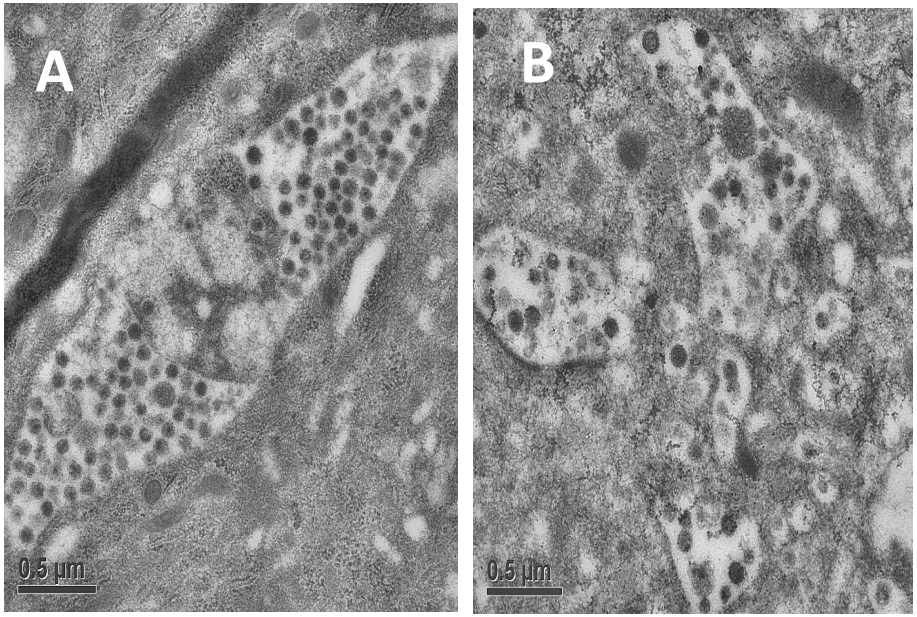
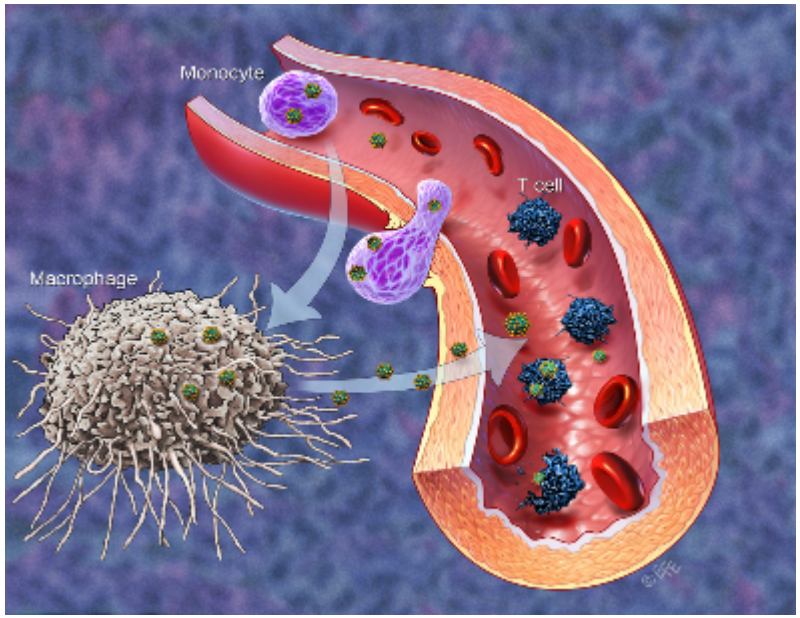
# BIT225 Targets HIV-1 in Virus Reservoirs

- BIT225 inhibits assembly and budding of new virus in macrophage reservoirs
- Phase 1b/2a trial (004) demonstrated that BIT225 can reduce HIV-1 levels in macrophage cells *in vivo*, paralleling *in vitro* studies (Wilkinson *et al*, J Antimicrob Chemother. 2015)
- **Phase 2 trial (009) is currently in progress to demonstrate a clinical benefit over and above current anti-HIV drugs**




*(A) Untreated Controls* *(B) BIT225 treated cells*

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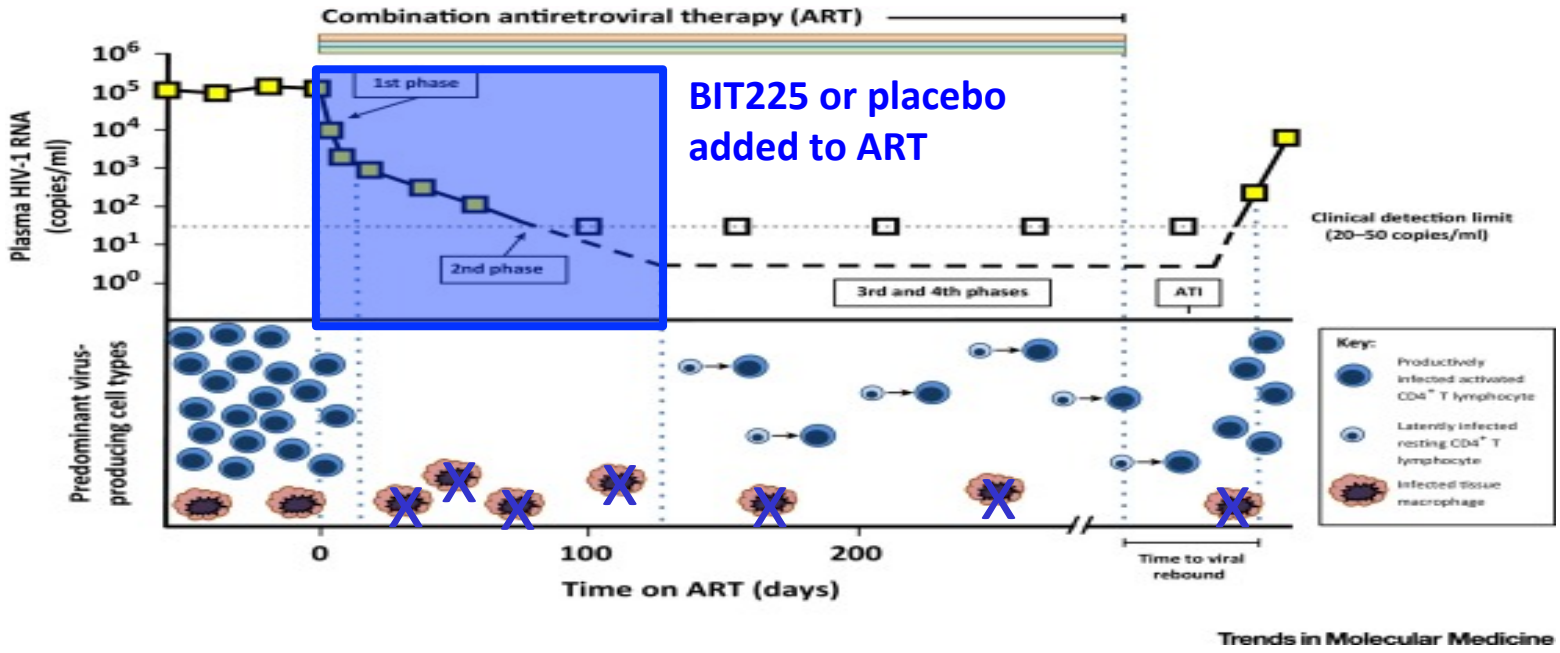
# Phase 2 Trial – BIT225-009 In Progress




- 36 HIV-$1^{+ve}$, treatment-naïve subjects commencing ART
- Randomised 2:1 (drug:placebo)
- BIT225 or placebo added to ART for first 12 weeks of treatment
- Read-out
  - Impact on viral load kinetics; reduction of immune activation markers
- Trial sites – HIV-NAT, Bangkok, and Chiang Mai, Thailand
- **Fully recruited; preliminary data anticipated Nov '17**

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# BIT225 – First of a New Class of HCV DAA Drugs

- Targets HCV p7 protein - Inhibits viral assembly and infectivity
- Pan-genotype activity:
  - Active *in vitro* against all main genotypes
  - Clinical activity against HCV GT 1 (1a and 1b) and GT 3 demonstrated in Phase 2a trials
- Seeking partnerships for further development, in particular, in Asia
- Emerging evidence that Interferon sparing therapies may cause reactivation of Hepatitis B (HBV)
  - Risk of reactivation of HBV has resulted in 'black box' warnings by the USA FDA on the recently approved HCV drugs
  - 30 – 50 million HCV-infected subjects in China
    - High HCV/HBV co-infection rate in China
- Alternative treatment strategies may be required for treating different patient populations across emerging markets such as China; BIT225 well positioned for treatment of HCV in these populations

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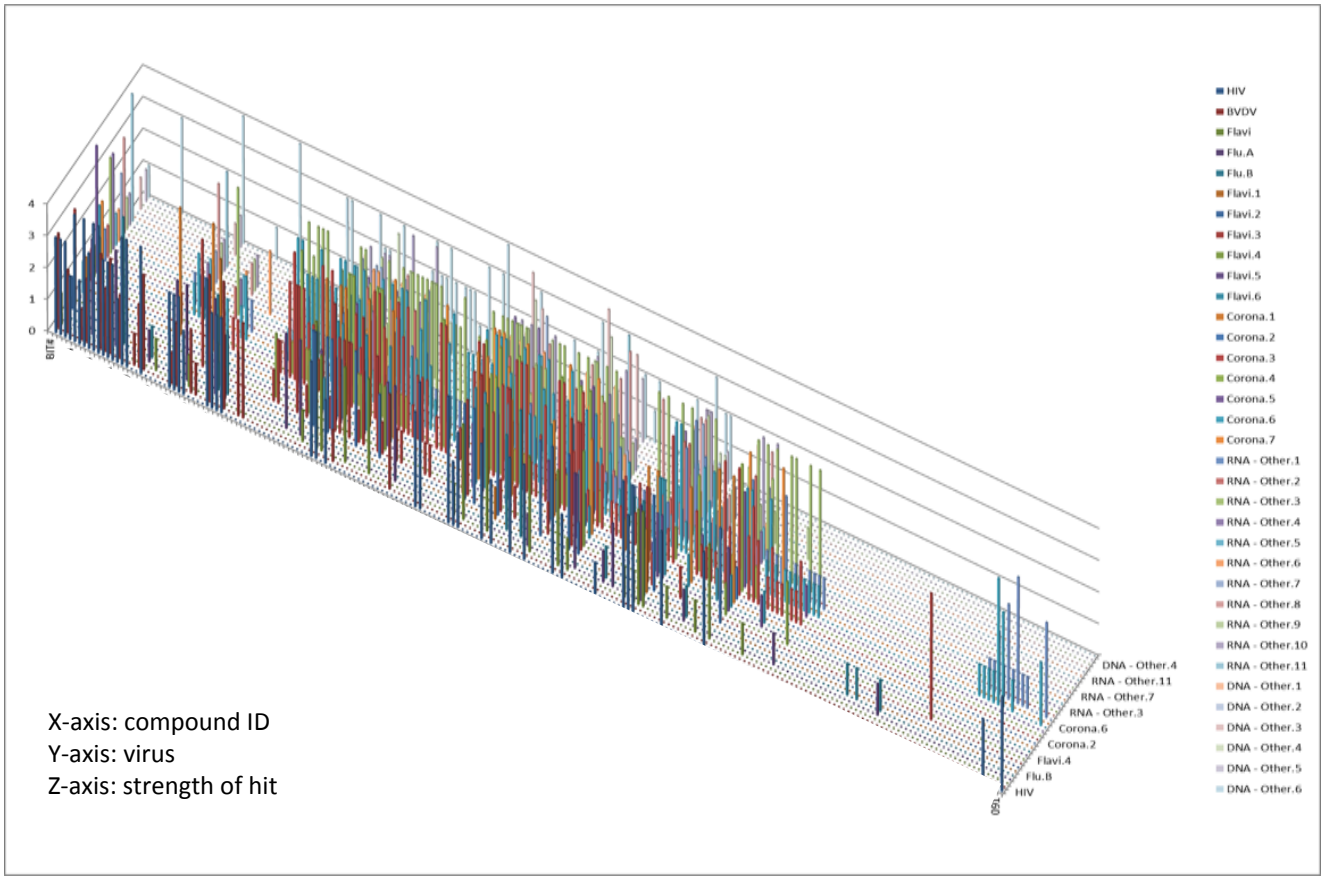
# Core Technology Drives Rich Compound Library

Library of compounds designed to target viroporins:

Initially >250 compounds designed and synthesised; library now ~350

**OTHER "HITS" IN LIBRARY include**:

- Influenza A and B
- Hepatitis B virus (HBV)
- Coronaviruses (Including SARS)
- Epstein-Barr virus (EBV)
- Zika virus
- others



# Unlocking Value in Compound Library

- Renewed industry interest in targeting viral diseases including
  - Respiratory diseases e.g. Respiratory syncytial virus (RSV) & Influenza
  - Hepatitis B virus
  - Tropical diseases including Dengue
- Influenza, Ebola, Zika and MERS-CoV outbreaks have caused public health issues worldwide
- **BIT225 has demonstrated the robustness of Biotron's approach with targeting viroporin proteins**
- Compounds with activity against other key viruses have been identified; secondary screening is in progress, with the aim of identifying potential clinical candidates
- Main focus remains on commercialising the Company's HIV-1 and HCV programs, but essential that other opportunities are developed

# Commercialisation: Multiple Partnering Opportunities

**Commercial activities focused on finding partners for individual targets or entire platform**

- HIV-1 Program
  - Significant value inflection expected in late 2017 on basis of Phase 2 data
  - Aim to partner at conclusion of current Phase 2 trial
- HCV Program
  - BIT225 particularly well suited to Asia, with high numbers of HCV-infected patients including a high proportion of HCV/HBV co-infected patients
  - Focused on achieving a regional deal for HCV in China in late 2017/early 2018
- Early stage collaboration opportunities for pre-clinical targets, such as:
  - Dengue
  - Hepatitis B
  - Influenza
- Additional development collaboration potential for “other” pharma targets

# Investment Highlights

| | |
|---|---|
| **NOVEL ANTIVIRAL PLATFORM** | **Targeting viroporin proteins with a rapid screening proprietary primary bacterial cell-based platform - a library of over 350 compounds with activity against a range of viruses.** |
| **BROAD ANTIVIRAL PIPELINE** | **Clinical and Preclinical programs in indications with high unmet clinical need or large patient populations such as HIV-1, HCV, Dengue, HBV, respiratory viruses, etc** |
| **ROBUST CLINICAL VALIDATION** | **Completed 7 human Clinical Trials with promising safety and efficacy outcomes; KEY PHASE 2 HIV-1 TRIAL DATA EXPECTED 4Q17** |
| **STRONG INTELLECTUAL PROPERTY POSITION** | **Portfolio of patents and patent applications directed to the Company's anti-viral drug portfolio** |

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