ASX Announcement

SPL7013 active against other pandemic coronaviruses

- **Further antiviral testing of SPL7013 (VIRALEZE™ active) at the Scripps Research Institute has confirmed it is active in two additional pandemic coronaviruses - severe acute respiratory syndrome coronavirus (SARS-CoV) or "SARS" and Middle East respiratory syndrome coronavirus (MERS-CoV) or "MERS"**
- **SPL7013 exerts its antiviral activity through blocking the spike proteins of these two pandemic viruses in the same manner as it does for SARS-CoV-2 (the virus that causes COVID-19)**
- **These results mean that SPL7013 is active in all four viruses resulting in respiratory viral pandemics in the past 20 years:**
    - **SARS-CoV-2 (the coronavirus that causes COVID-19)**
    - **MERS-CoV (the coronavirus that causes MERS, 2012)**
    - **SARS-CoV (the coronavirus that causes SARS, 2003)**
    - **H1N1 (the influenza virus that caused Swine Flu, 2009)**
- **Potent antiviral activity has also been demonstrated for SPL7013 in a further European isolate of SARS-CoV-2 (the virus that causes COVID-19), and an additional influenza virus subtype, H3N2 (Avian Flu)**
- **SPL7013's broad-spectrum antiviral activity is a compelling feature for the role of VIRALEZE™ today and in future pandemic preparedness**
- **VIRALEZE™ recently achieved registration for sale in EU/UK and is on track to be launched in March**

Melbourne, Australia; 3 March 2021: Starpharma (ASX: SPL, OTCQX: SPHRY) today announces new data from The Scripps Research Institute in the US and other specialist laboratories on the activity of SPL7013 against important respiratory viruses, including those responsible for past pandemics. This new data further confirms the broad spectrum antiviral properties of SPL7013 (VIRALEZE™ active), with SPL7013 blocking the spike protein of two additional important pandemic causing coronaviruses, SARS-CoV and MERS-CoV.

Testing also confirmed antiviral activity against a further European isolate of SARS-CoV-2 (Slovakia/SK-BMC5/2020) and an influenza virus subtype, H3N2.

Both SARS and MERS are caused by respiratory coronaviruses, and outbreaks of these viruses resulted in pandemics with significant mortality. There are no vaccines for either of these viruses. These viruses are in addition to those previously identified for SPL7013 (VIRALEZE™ active), including SARS-CoV-2, the coronavirus that causes COVID-19[1], respiratory syncytial virus (RSV) and influenza virus subtype, H1N1 or "Swine Flu".

Based on the activity of SPL7013 (VIRALEZE™ active) against different isolates of SARS-CoV-2 (Australia, USA, Europe), multiple other viruses, including drug-resistant strains, the product is expected to retain activity against the important SARS-CoV-2 strains being reported in the UK, South Africa and elsewhere.

SPL7013 has been shown to be virucidal, rapidly inactivating >99.9% of SARS-CoV-2 within 60 seconds. VIRALEZE™ has been registered for sale in Europe, including in the UK, and is on track for launch this quarter.

[1] Paull, J.R.A. et al., 2020. Astodrimer sodium, dendrimer antiviral, inhibits replication of SARS-CoV-2 *in vitro*. bioRχiv 2020.08.20.260190. https://doi.org/10.1101/2020.08.20.260190

The impact of the current COVID-19 pandemic has triggered an increased focus by Governments and health authorities to ensure greater preparedness for future pandemics. The increasingly broad spectrum of antiviral activity of SPL7013 (VIRALEZE™ active), which includes all of the pandemic-causing respiratory viruses, broadens the opportunities for SPL7013, as Governments around the world seek access to preventative solutions, such as stockpiling of broad spectrum antiviral agents. The excellent stability of SPL7013 and room temperature storage of VIRALEZE™ are also significant advantages in this setting.

Dr Jackie Fairley, CEO of Starpharma, commented: "The increasingly broad spectrum of antiviral activity for SPL7013, including against SARS, MERS and influenza virus subtype, H3N2, further adds to the appeal for VIRALEZE™. Given this, the product also has the benefit of likely utility in future viral pandemics. Leading medical experts, including Dr Anthony Fauci, agree that further viral pandemics are almost certain, and preparedness for these will be an increased focus for Governments and health organisations around the world[2]."

About VIRALEZE™ - antiviral nasal spray

VIRALEZE™ is an easy to use antiviral nasal spray, which can be stored at room temperature and does not require refrigeration.

VIRALEZE™ contains SPL7013 (astodrimer sodium), which has been shown in laboratory studies to inactivate a broad spectrum of respiratory viruses, including >99.9% of coronavirus SARS-CoV-2 (the virus that causes COVID-19).

SPL7013 has been shown to be virucidal, inactivating >99.9% of SARS-CoV-2 within one minute. SPL7013 has also been shown in laboratory studies to have activity against other important respiratory viruses including influenza viruses, respiratory syncytial virus (RSV), and other human coronaviruses. Based on the effectiveness of VIRALEZE™ against multiple viruses, including drug-resistant strains, the product is expected to retain activity against the SARS-CoV-2 strains being reported in the UK, South Africa and elsewhere. VIRALEZE™ does not require cold storage or specialised transportation.

The nasal cavity is the primary site where SARS-CoV-2 (COVID-19) becomes established, before spreading to the lungs^. "Spike" proteins on the surface of these viruses that come into contact with VIRALEZE™ are trapped by SPL7013. This interaction is 'virucidal' – the virus is irreversibly blocked and can no longer infect mucosal cells, thereby providing a physical barrier to respiratory viruses in the nasal cavity. These "blocked" viruses are then eliminated naturally through the nasal mucus. ^Hou et al., 2020, Cell 182, 429–446

SPL7013 is included in products licensed in >160 countries, approved in >40 countries and available for sale in the UK, Europe, Japan, South East Asia, Australia and New Zealand.

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[2] https://www.technologynetworks.com/cancer-research/articles/previous-coronavirus-pandemics-covid-19-and-cancer-care-337692 and https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30484-9/fulltext

Summary of the SPL7013 SARS-CoV, MERS-CoV, SARS-CoV-2, and influenza virus subtype H3N2 spike protein binding and antiviral studies and results

For SARS-CoV and MERS-CoV assays, lentiviruses expressing SARS-CoV, MERS-CoV or SARS-CoV-2 spike proteins were exposed to Vero E6 cells treated with SPL7013 to measure the effectiveness of SPL7013 in inhibiting infection.

SPL7013 resulted in ~80% reduction in infected cells for all three coronavirus-expressing lentiviruses (30mg/mL) compared with infection in cells without SPL7013. The level of inhibition of SARS-CoV- and MERS-CoV-expressing lentiviruses by SPL7013 was comparable to the inhibition of those expressing the SARS-CoV-2 spike protein (Figure 1).

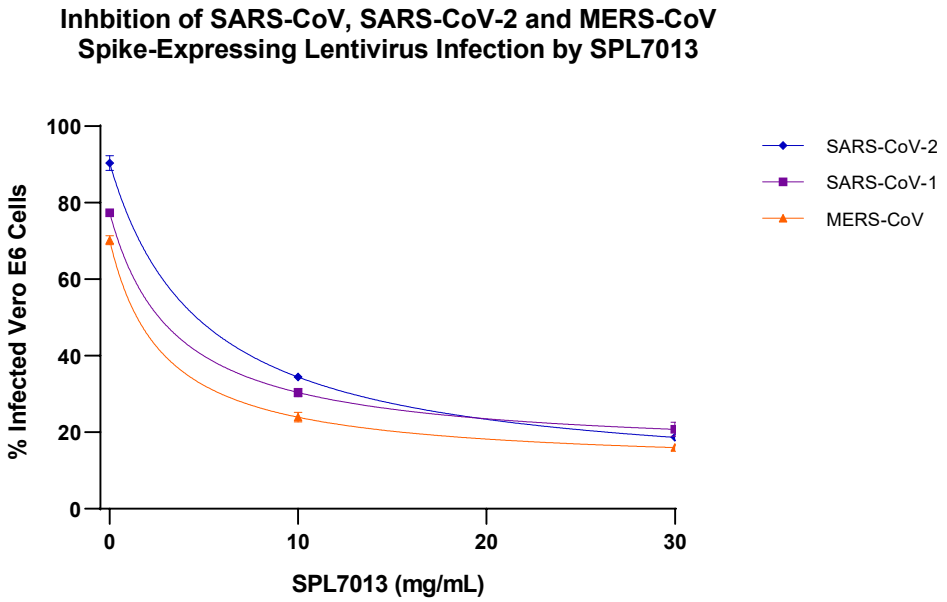

Figure 1 – Inhibition of SARS-CoV, MERS-CoV and SARS-CoV-2 spike-expressing lentivirus infection of Vero E6 cells by SPL7013.

Other mechanism of action studies have also confirmed that SPL7013 acts by blocking the SARS-CoV-2 spike protein. The SARS-CoV-2 spike protein is essential in initiating interaction of the virus with the target cell, via the angiotensin converting enzyme-2 (ACE2) receptor, that leads to infection of the cell. The studies have shown that SPL7013 blocks the SARS-CoV-2 spike protein from binding to cells expressing the ACE2 receptor (Figure 2). In the absence of binding of SARS-CoV-2 spike proteins to cells, infection of cells cannot occur.

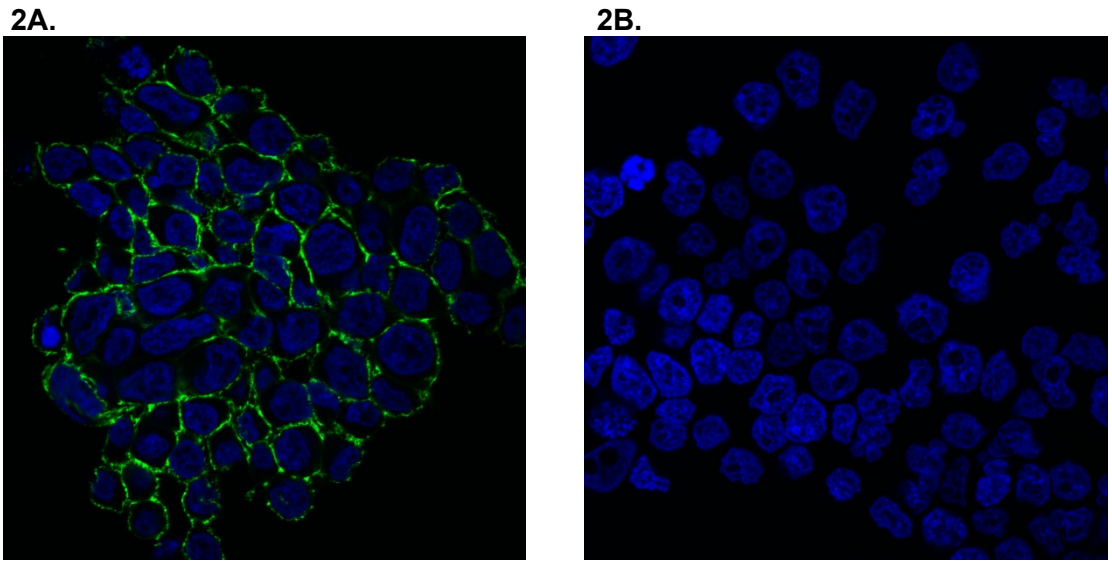

Figure 2 – Confocal microscopy of SARS-CoV-2 spike proteins (fluorescent green areas) binding to cells (blue areas) expressing the human ACE2 (hACE2) receptor in the absence of SPL7013 (Figure 2A) and presence of SPL7013 (1% / 10 mg/mL) (Figure 2B). Large blue circles identify the nucleus of each cell in the cell monolayer and the fluorescent green areas are the spike proteins binding to cells.

2A. Negative control (no SPL7013 added)

SARS-CoV-2 spike protein binding to cells expressing the hACE2 receptor on the cell membrane **in the absence of SPL7013**, as detected by green immunofluorescence. ***The strong green immunofluorescence seen in the image illustrates significant binding of SARS-CoV-2 spike protein to host cells.***

2B. Active (SPL7013 added)

SPL7013 added to cells in the presence of SARS-CoV-2 spike protein results in no detectable binding of the SARS-CoV-2 spike protein to the cells expressing the hACE2 receptor. ***The complete absence of green immunofluorescence in the image illustrates the lack of binding of SARS-CoV-2 spike protein to host cells. This lack of binding would result in a significant decrease in or prevent the infection of these cells by SARS-CoV-2.***

The current study with SARS-CoV and MERS-CoV has demonstrated that SPL7013 blocks the binding of the spike proteins at concentrations that demonstrated potency against SARS-CoV-2 spike protein binding and infection. These studies show that SPL7013 acts against all these viruses through a common mechanism of blocking the coronavirus spike protein from interacting with cells, regardless of the cell receptor involved. Collectively, these data support the broad-spectrum, anti-coronavirus and antiviral effect of SPL7013.

Another study also demonstrated potent antiviral activity of SPL7013 against influenza A subtype H3N2, which was the virus responsible for the 1968 “avian flu” pandemic and is now a seasonal influenza virus.

In previously reported laboratory studies, SPL7013 has demonstrated potent antiviral activity against Australian and US isolates of SARS-CoV-2. Recent studies have shown that SPL7013 also has potent antiviral activity against an additional, European isolate of SARS-CoV-2 (Slovakia/SK-BMC5/2020).

About Starpharma

Starpharma Holdings Limited (ASX:SPL, OTCQX:SPHRY) is a global biopharmaceutical company and a world leader in the development of new pharmaceutical and medical products based on proprietary polymers called dendrimers, with programs for COVID-19, DEP® drug delivery and VivaGel®. Starpharma has developed VIRALEZE™, an antiviral nasal spray for COVID-19, which is complementary to vaccines and other preventative measures such as distancing and PPE. VIRALEZE™ is registered for sale in the UK/Europe, with launch of product expected in Q1 CY2021. SPL7013 is utilised in approved products - the VivaGel® condom and VivaGel® BV. VivaGel® BV has been licensed in >160 countries, is approved in >40 countries and available for sale in the UK, Europe, Japan, South East Asia, Australia and New Zealand.

As a leading company in dendrimer based drug delivery, Starpharma's proprietary drug delivery platform technology, DEP®, is being used to improve pharmaceuticals, to reduce toxicities and enhance their performance. There are numerous internal and partnered programs underway to develop DEP® versions of existing drugs, particularly in the area of anti-cancer therapies. DEP® partnerships include oncology programs with AstraZeneca, with Merck in the area of Antibody Drug Conjugates (ADCs), with Chase Sun in the area of anti-infectives and other world leading pharmaceutical companies Starpharma's partnered DEP® programs have the potential to generate significant future milestones and royalties.

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Disclosure
This ASX Announcement was authorised for release by the Chairman, Mr Rob Thomas.

Forward Looking Statements
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