

ASX/Media Release

6 September 2019

Botanix antimicrobial data presented at Antimicrobial Resistance Conference

Key highlights

- Dr Mark Blaskovich of the University of Queensland presented an update on Botanix's antimicrobial platform at the *ASM / ESCMID Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance* in Boston, US
- Dr Blaskovich's poster presentation highlighted the unique properties of synthetic cannabidiol as a remarkably active Gram-Positive broad-spectrum antibiotic, that bacteria cannot form resistance to over time
- Botanix's antimicrobial platform has rapidly expanded and multiple options for further development of the portfolio are being explored

Philadelphia PA and Sydney Australia, 6 September 2019: Clinical stage synthetic cannabinoid company Botanix Pharmaceuticals (ASX:BOT, "Botanix" or the "Company") is pleased to announce Dr Mark Blaskovich presented an update on the Company's antimicrobial platform at the *ASM / ESCMID Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance* in Boston, US.

Dr Blaskovich's poster builds upon the previously presented work which demonstrated that:

1. Cannabidiol is a broad-spectrum Gram-Positive antibiotic, which has been shown to be effective against a range of problematic human and animal bacteria;
2. Cannabidiol is particularly effective against clinical isolates of *staphylococcus aureus* ("staph") and *methicillin resistance staphylococcus aureus* ("MRSA");
3. Bacteria cannot form resistance to cannabidiol;
4. Cannabidiol kills bacteria very quickly (within three hours);
5. Cannabidiol disrupts biofilms that bacteria use to protect themselves; and
6. Cannabidiol has been shown to be effective in animal wound infection models.

The *ASM / ESCMID Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance* is taking place on 3 to 6 September 2019 in Boston, US. The conference is co-sponsored by the American Society for Microbiology (ASM) and the European Society for Clinical Microbiology and Infectious Diseases (ESCMID). This multidisciplinary meeting is aimed at addressing the challenges, opportunities and current requirements for antimicrobial drug development for antimicrobial resistance.

New work undertaken by Dr Blaskovich at The University of Queensland's Institute for Molecular Bioscience's Centre for Superbug Solutions has focused on understanding the mechanism of action by which cannabidiol kills bacteria. Preliminary data supports the rapid bactericidal activity of

cannabidiol and indicates that is likely not acting on the pathways targeted by traditional antibiotics, but leads to disruption of those macromolecular pathways critical for bacterial growth and survival.

These results support the recently published data that bacteria cannot readily form resistance to the rapid killing action of cannabidiol, and that bacteria that are resistant to other antibiotics remain susceptible to cannabidiol. This collaborative work at the University of Queensland has been supported by Innovation Connections, an Australian Government grant.

Dr Michael Thurn, Executive Director of Botanix said: “The new findings concerning the mechanism of action by which synthetic cannabidiol kills bacteria, provides further confidence not only in our Phase 2 acne and atopic dermatitis programs, but also opens up a number of new potential applications for cannabinoids to treat other indications.”

Botanix has already announced two antimicrobial development products, BTX 1801 for skin infections and AB 2367 for *Clostridium Difficile* gastrointestinal infections, and has identified a number of other human and animal health applications that leverage the unique properties of cannabinoids as powerful Gram-Positive antibiotics. The Company is exploring a number of opportunities for further development of its antimicrobial platform, as its dermatology programs accelerate towards pivotal data read-outs in the coming months.

About Botanix Pharmaceuticals

Botanix Pharmaceuticals Limited (ASX:BOT) is a clinical stage synthetic cannabinoid company based in Perth (Australia) and Philadelphia (USA) committed to the development of pharmaceutical products that are underpinned by science and supported by well-controlled randomised clinical trials. The Company’s focus is the development of safe and effective topical treatments for serious skin diseases. The active ingredient contained in Botanix products is a synthetic form of cannabidiol which has demonstrated benefits for the treatment of inflammation, deterioration of the skin barrier, skin cell proliferation, pruritus (itch), excess sebum production and bacterial infection in a range of skin diseases. Botanix has an exclusive license to use a proprietary drug delivery system (Permetrex™) for direct skin delivery of active pharmaceuticals in all skin diseases.

The Company successfully completed its first acne patient studies and has recently completed enrolment of a Phase 2 clinical study which is on target to be completed in 3Q CY2019 with data shortly thereafter. A Phase 2 patient study in atopic dermatitis is also underway with enrolment expected to complete in 4Q CY2019. The Company has successfully completed a mechanism of action study for synthetic cannabidiol in skin disease, with positive interim data announced in June 2019 and is developing a pipeline of product candidates that leverages the antimicrobial properties of cannabidiol with first products planned to enter the clinic in 2H CY2019.

To learn more please visit: <https://www.botanixpharma.com/>

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