Efficacy of SMT19969 and SMT21829 in a Hamster Model of Clostridium difficile Associated Disease (CDAD)

W. J. WEISS1*, R. VICKERS2, M. PULSE1, P. NGUYEN1, P. RENICK1, J. W. SIMECKA1

1Pre-Clinical Services at UNT Health Science Center, Ft. Worth, TX, 2Summit PLC, Oxford, UK

Abstract

Background: Clostridium difficile (C. diff) is an important cause of hospital-acquired infectious diarrhea, ranging from a mild self-limiting disease to severe, life-threatening associated disease. C. difficile infection (Cdiff) is an important cause of hospital-acquired infectious diarrhea, ranging from a mild self-limiting disease to severe, life-threatening associated disease. The antimicrobials most often implicated are clindamycin, cephalosporins; however, called pseudomembranous intestinal colitis. The antimicrobials most often implicated are clindamycin, cephalosporins; however, called pseudomembranous intestinal colitis.

Methods and Materials

Organism: Clostridium difficile (C. diff) clinical isolate UNT103-1

White Male Syrian hamsters, 80–100 gm.

VeCo (Vancomycin) (20 mg/kg) and C. diff (20 mg/kg) were administered orally starting 48 hrs after infection and treatment with cecal samples was performed. Cecal samples were collected from any animal that died on study and from all animals that died on study were positive for clostridial Toxins A & B, while all survivors were toxin negative.

Panel 1. Chemical Structures

Panel 2. MIC values of SMT19969 and SMT21829 against C. difficile clinical isolates

Panel 3. Panels 8. Wampole Tox A/B Elisa Results for SMT19969 against the epidemic BI/NAP1 Clinical Isolate UNT103-1

Panel 4. Efficacy of SMT19969 against the C. difficile Clinical Isolate UNT103-1

Panel 5. Efficacy of SMT19969 against the epidemic BI/NAP1 Clinical Isolate UNT103-1

Panel 6. Efficacy of SMT21829 against the C. difficile Clinical Isolate UNT103-1

Panel 7. Wampole Tox A/B Elisa Results for SMT19969 against the epidemic BI/NAP1 Clinical Isolate UNT103-1

Panel 8. Wampole Tox A/B Elisa Results for SMT21829 against the epidemic BI/NAP1 Clinical Isolate UNT103-1

Methods:

C. difficile (Cdif) is an important cause of hospital-acquired infectious diarrhea, ranging from a mild self-limiting disease to severe, life-threatening associated disease. The antimicrobials most often implicated are clindamycin, cephalosporins; however, called pseudomembranous intestinal colitis.

Conclusion:

SMT19969 and SMT21829 exhibited greater efficacy than vancomycin against both the epidemic BI/NAP1 and non-epidemic isolates evidenced by lower relapse and/or delayed time to relapse with SMT19969 and SMT21829 administration resulting in 40–50% survival by day 21.

References:

1) Anton, P., M. O’Brien, E. Kokkotou, B. Eisenstein, A. Michaelis, D. Maciej Kukula of the UNT Health Science Center and Curtis

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