SULFAMETHOXAZOLE AND TRIMETHOPRIM CAUSES DISCOVERY OF A NOVEL ANTI-TACI ANTIBODY WITH A56

Grants MOP 125960 and THC 135235.

Funding Source(s): Canadian Institutes for Health Research

mortality, functional status, and quality of life of people with SLE. Given the impact of HP, this has important implications for primary care community.

Funding Source(s): None

# DISCOVERY OF A NOVEL ANTI-TACI ANTIBODY WITH SLE TREATMENT EFFECT AND LIMITED SIDE-EFFECT

Xiao Feng*, Dawei Sun, Suifu Qin, Tao Wang, Hongbao Yan, Guosheng Teng, Chong Che.

Gene Science Pharmaceuticals

Background All clinical trials involving the BAFF axis to date have targeted the ligand, BAFF. Remarkably, there have been no reports of targeting any of the BAFF receptors, BCMA, TACI, or BR3. TACI is critical for T cell-independent type antibody production and memory B cell survival. Also IgG autoantibody production in SLE patient is mainly a T cell-independent. Thus, TACI is a promising target for SLE treatment.

Methods In this study, we discovered a novel anti-TACI antibody, GenSci-X002, by hybridoma and humanization approach to investigate its function on SLE treatment.

Results GenSci-X002 specifically binds to TACI receptor with sub-nanomolar affinity and blocks the binding of TACI and BAFF ligand. Also, GenSci-X002 neutralized BAFF-TACI downstream signal in a luciferase reporter assay. In SLE mouse model, GenSci-X002 exhibited equivalent SLE treatment effects with Belimumab, evidenced by the significant decrease of pathogenic autoantibody production, kidney Ig deposition and the development of nephritis. Remarkably, GenSci-X002 didn’t alter normal B cell subset and B cell numbers with minimal side effect.

Conclusions Here, we show that anti-TACI antibody protected against BAFF-mediated autoimmune manifestations while preserving B cells, suggesting that loss of BAFF signaling through TACI rather than loss of B cells may underpin the effect of Belimumab in the clinic. Therefore, B cell blockade of TACI by GenSciX002 may offer a more specific and safer therapeutic alternative to broad B cell depletion in SLE. The candidate therapeutics, GenSci-X002, will be further studied in preclinical evaluation to enter early-stage clinical trials of SLE in future.

Funding Source(s): None

# CLINICAL CHARACTERISTICS OF PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS COMPLICATED WITH PULMONARY THROMBOEMBOLISM

Hong Zhu*, Yu-Jia Jing, Yan Zhou, Yao Chen. Department of Rheumatology, General Hospital of Ningbo Medical University, Yinzhuang 750004, China

Background There is strong evidence for an association between SLE and an increased risk of pulmonary thromboembolism (PTE). PTE occurs with a higher frequency in SLE patients compared to the general population.