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A publication in Nature Reviews Urology summarizes the scientific basis for SelectImmune’s drug development strategy.

“Immunomodulation therapy offers new molecular strategies to treat urinary tract bacterial infections” in Nature Reviews Urology summarizes the scientific basis behind SelectImmune’s drug development strategy. The review also describes successful examples of innate immunomodulation therapy. [Butler, D., Ambite, I., et al. Immunomodulation therapy offers new molecular strategies to treat UTI. Nature Reviews Urology \(2022\). DOI: 10.1038/s41585-022-00602-4. \(<https://rdcu.be/cP963>\)](#)

Innovative solutions are needed for the treatment of bacterial infections and a range of antibacterial molecules have been explored as alternatives to traditional antibiotics. A different approach is to explore the immune response for new ways of making the antibacterial defence more efficient. The immune system has a dual role as protector and cause of disease and new therapies aim to increase the protective effect while inhibiting excessive innate immune responses that cause symptoms and tissue pathology during infection.

The concept of innate immunomodulation therapy has been developed successfully in urinary tract infections based on detailed studies of innate immune activation and disease pathogenesis. Effective, disease-specific, immuno-modulatory strategies have been successfully implemented in experimental models. Inhibiting interferon regulatory factor 7, using small interfering RNA is protective in a murine acute pyelonephritis model. In acute cystitis, targeting overactive immune effector molecules such as IL-1 β , MMP-7 and the pain-sensing receptor NK1R are successful *in vivo*.

The IL-1 receptor antagonist (IL-1RA, anakinra) is now being developed for

patients with severe bladder pain syndrome and studies in patients with recurrent acute cystitis are ongoing. Off label treatment reduced bladder pain, increased the quality of life and allowed responding patients to return to a more normal lifestyle. At the molecular level, treatment inhibited destructive neuro-inflammation, and pain sensing was lowered.

The review summarizes the molecular basis of the excessive innate immune responses that cause symptoms and pathology during urinary tract infections. The review also describes successful examples of innate immunomodulation therapy, making it a realistic option for treating these conditions.

“We are proud to be invited by Nature Reviews Urology to summarize this topic. The Nature Reviews are highly prestigious, with a broad readership,” says Ines Ambite, research scientist at Lund University and R&D coordinator, SelectImmune Pharma.

“The potential of immunotherapy is considerable and there is a great need for alternatives to conventional antibacterial therapy,” says Catharina Svanborg, Professor and Founder of SelectImmune Pharma.

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SelectImmune Pharma is a pharmaceutical company whose shares are traded on the Spotlight Stock Market. The company goal is to develop new immunotherapies, which act as immune enhancers and offer alternatives to antibiotics.

Bacterial infections affect large parts of the population and are becoming difficult to treat due to increasing antibiotic resistance. SelectImmune Pharma develops immunomodulation therapies that can supplement or replace antibiotics. Urinary tract infections are among the most common infectious diseases world-wide, affecting about 150 million people each year. The need for alternative treatments for bacterial infections is currently very large as are potential markets.

