INTERSTITIAL CYSTITIS

Background

Bladder pain syndrome (BPS)/interstitial cystitis (IC) is a chronic pain syndrome characterized by pain, pressure, or discomfort perceived to be bladder-related and with at least one urinary symptom. Although the etiology and pathogenesis of BPS/IC are unknown, numerous theories including infection, inflammation, autoimmune disorder, toxic urinary agents, urothelial dysfunction, and neurogenic causes have been proposed. In addition to the uroepithelial disruption, visceral inflammation also remains a central pathological process in BPS/IC Inflammation within the urinary bladder viscera is characterized by increased vasculature, mucosal irritation that may result in barrier dysfunction, and infiltration of inflammatory mediators. The proliferation and activation of mast cells, in particular, have received considerable attention in the urinary bladder immune response. Mast cells secrete vasoactive chemicals to promote innate and autoimmunity and their increased activity has been widely demonstrated in BPS/IC. The subsequent exposure in the bladder interstitium to vasoactive chemicals, inflammatory mediators, and neuropeptides from visceral inflammation may lead to afferent nerve hyperexcitability and neurogenic inflammation (Yu et al., 2008).

Pathology Model

In order to test the Client's compound modulatory effect on a BPS/IC model, T24 human bladder carcinoma cell line will be challenged in vitro with protamine sulphate (100ng/ml), either in the presence/absence of the Client's compound, and the modulatory action exerted on the challenged cells will be quantitatively monitored by means of biochemical, molecular, metabolic and functional assays

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Readouts

The following parameters will be taken into consideration:

- Quantitative evaluation of cell vitality
- Quantitative evaluation of cell proliferation
- Quantitative evaluation of caspase activity
- Quantitative evaluation of inflammatory mediators by multiplex ELISA
- Quantitative evaluation of oxidative stress by Total ROS analysis: