VDR Receptor Competence Induces Recovery from Chronic Autoimmune Disease

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The VDR nuclear receptor is at the heart of human innate immunity, being responsible for expression of a majority of the body's antimicrobial peptides[1]. Chronic immune disease causes VDR dysfunction, with ripple-down effects on the Thyroid, Glucocorticoid, Androgen and Progesterone nuclear receptors. This VDR dysfunction inhibits the innate immune system from expressing most of its antimicrobial peptides, allowing viral and bacterial metagenomic communities to evade phagocytosis, and become persistent intraphagocytic pathogens. We have identified at least one bacterial sulfonolipid[3], Capnine, which is an strong VDR antagonist. It is produced by biofilm-dwelling gliding bacteria, including spp. *Flavobacter*. The VDR dysfunction is clearly no accident, but is a result of the survival mechanism of these persistent intraphagocytic pathogens. In 2002 we commenced an open-label, adaptive, Phase 2 study[3,4] using a novel VDR agonist, Olmesartan Medoxomil (which was initially developed as an Angiotensin Receptor Blocker), together with (biofilm-targeted) sub-inhibitory concentrations of antibiotics which function by inhibiting 70S ribosomal protein synthesis. This study has routinely induced recovery not only from autoimmune conditions ranging from Rheumatoid Arthritis to Uveitis, but also idiopathic chronic disease including Sarcoidosis, CFS/ME and Fibromyalgia. Surprisingly, many subjects who had presented with comorbid neurological conditions, including peripheral neuropathy, depression, bipolar disorder and OCD, have had those conditions resolve along with their chronic inflammation. To this point the molecular biology underlying the pathogenesis has been confirmed, and a therapy evolved, which, over the course of 3-5 years, induces full recovery. Immunopathology limits the rate of bacterial killing. Translational research has allowed this molecular biology to rapidly move from Bench to Bedside, and has confirmed, in-vivo, the accuracy and utility of the disease model.

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