2

Induction of Immune Responses and Inflammation to Parasitic Infections

Gurdeep Singh^{1,*}, Abhishek Tiwari^{2,*}, Varsha Tiwari², and Mukesh Kr Singh³

2.1 Introduction

Senescent multimorbidity, which is the co-existence of numerous chronic pathologies including the principal diseases of advanced age, is mostly caused by aging. Slowing down the aging process can simultaneously avoid the onset of a number of age-related disorders [1]. Worm therapy is a form of immunotherapy that treats immunological problems and autoimmune diseases by purposefully contaminating a patient's body with parasites in any of their developmental stages, including eggs, larvae, or adult worms. Studies showing that individuals who routinely contract parasitic worms have low rates of autoimmune illnesses, so all parasitic worms cannot be damaging to the body [2]. In affluent nations, the prevalence of autoimmune inflammatory illnesses has dramatically increased over the past three decades. Just a few examples include type 1diabetes (T1D), multiple sclerosis (MS), rheumatoid arthritis (RA), and Crohn's disease. An immune-mediated attack on a target organ that causes the immune system to no longer identify itself is the hallmark of autoimmune disease. Both antibody and cell-mediated elements can contribute to autoimmune disease [3].

Various age-related diseases, such as cardiovascular disease, dementia, cancer, chronic obstructive pulmonary disease (COPD), osteoporosis, and age-related macular degeneration, are made worse by this inflammation [4]. Gut dysbiosis, an

¹ School of Pharmaceutical Sciences, Lovely Professional University, Phagwara, Punjab, India

² Pharmacy Academy, IFTM University, Moradabad, Uttar Pradesh, India

³ School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, India

^{*} Corresponding authors