

Sirtuin 1 is Linked to Inflammatory Bowel Disease and Global Diseases

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The global chronic disease epidemic has become of major concern to various individuals in the developing and developed world. In the developing world the global increase in chronic diseases such as NAFLD and neurodegenerative diseases that now afflict millions of individuals in various countries is possibly associated with environmental xenobiotics [1]. The anti-aging gene sirtuin 1 (Sirt1) is involved with the regulation of various anti-aging genes that control cell survival associated with mitochondrial biogenesis and programmed cell death [2]. Interests in Sirt 1 have increased since it may repress with effects on other genes and their cellular expression with importance to the induction of obesity, diabetes, NAFLD and accelerated neurodegenerative disease [3].

The literature reports that the impact of inflammatory bowel disease (IBD) has risen in the developing and developed world [4]. The understanding of the variation in IBD trend levels in various countries is crucial for the development of effective strategies for preventing and treating IBD. Research studies indicate that Sirt 1 activity is reduced in inflammatory bowel disease models and associated with the increased production of proinflammatory cytokines and oxidative stress with relevance to colitis [5,6]. Research studies now show the IBD is linked to NAFLD, obesity, diabetes and neurodegenerative diseases and Sirt 1 repression may be the defective gene with relevance to these various chronic diseases [7-13].

Bacterial lipopolysaccharides (LPS) and mycotoxins have become of central importance to Sirt 1 regulation with relevance to global diseases. Nutritional therapy that includes the use of Sirt 1 activators may be critical to the treatment of IBD and chronic

disease and the consumption of Sirt 1 inhibitors such as LPS should be avoided to prevent the induction of IBD and its connections to global diseases. LPS has been shown to induce intestinal inflammation and LPS is involved with the repression of Sirt 1 and relevant to chronic diseases. The role of nutrition and food quality is critical to the prevention of IBD and chronic disease progression and the measurement of plasma Sirt 1 levels may be important to the diagnosis and treatment of IBD relevant to global diseases.

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