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Opinion
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Sunflower Mannose Binding Lectin-Associated Serine Protease Inhibitor-1 (SFMI-1) and -2: Significant Inhibitors of Mannose Binding Lectin Pathway Which Helps in Multiple Sclerosis Treatment

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Opinion

One of the important parts of innate immunity is complement system that occurs in three different ways; the classic, the alternative and the lectin pathway. The four pattern recognition molecules that have been identified till now are Mannose binding lectin (MBL), a component of lectin pathway, and three ficolins (ficolin1,-2 and -3) which compound to the carbohydrates of the cell surface. MBL associated serine protease1 (MASP-1), MASP-2 and -3 are three proteases which associate with recognition molecules. Also MBL-associated protein 19 and MBL-associated protein 44 are two non-catalytic molecules that their role is association with recognition molecules. MASP-1 and MASP-2 activate the lectin pathway but function of MASP-3 is unclear. Although some researches show that MASP-3 down regulate activation of two other MASPs and has a similar role like MBL-association 19 and MBL-association 44 that they inhibit MBL pathway too.

Researches show that MBL pathway has a critical role in pathogenesis of autoimmune diseases such as multiple sclerosis (MS). Researches indicate that levels of MBL pathway activator components (MASP-1 and MASP-2) are higher in serum plasma of MS patients.

So inhibiting activators of MBL pathway seems to be useful for MS treatment and reducing its disabilities.

Sunflower MASP inhibitor-1 (SFMI-1) and sunflower MASP inhibitor-2 (SFMI-2) are two peptides with 14 amino acids that inhibit MASP-1 and MASP-2 and block the lectin pathway activation. This article suggests using SFMI-1 and SFMI-2 in drugs to targeted therapy of MS and decreasing its symptoms.

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