牛樟芝的樟芝酸 C 抑制 LPS 誘導之 RAW 264.7 巨噬細胞抗發炎反應

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Inhibitory Effects of actin C from Antrodia cinnamomea on LPS-induced Inflammatory Response in RAW246.7 Macrophages—Hsiu-Ju Chen [1], Guan-Jhong Huang [2], Shyh-Shyun Huang[1] ([1]School of Pharmacy, College of Pharmacy, China Medical University, Taichung 40402, Taiwan. [2]Department of Chinese Pharmaceutical Sciences and Chinese Medicine Resources, China Medical University, Taichung 40402, Taiwan)

過度或者控制不良的發炎反應已經被證實是許多疾病的進程。包括像是類風濕性關節炎、多發性硬化症、神經性退化疾病等等。樟芝酸 C 是種從牛樟芝（一種生產於台灣的珍貴藥用真菌）中分離出來的生化活性物質，已經被證實能作為抗人類肝癌細胞 HepG2 和乳腺癌 MCF-7 細胞的胞殺介質。

在我們的實驗中，我們使用樟芝酸 C 來對 RAW 264.7 巨噬細胞進行 LPS 誘導的發炎反應，而我們實驗結果發現樟芝酸 C 不會影響 RAW 264.7 的細胞活性。此外，樟芝酸 C 會抑制 iNOS 和 COX-2 的蛋白質表現，當我們給予樟芝酸 C 時細胞內的 TNF-a 含量會顯著的隨著給予量的增加而降低。

除此之外，我們發現樟芝酸 C 是透過活化有絲分裂蛋白激酶（MAPK）家族 ERK1/2 和 c-JNK、p-38 蛋白的表現來抑制發炎反應。NF-kb 活性是受到他的抑制分子 Ikb 所控制。所以我們也探討了 Ikb / NF-kb 途徑。根據以上所有的實驗數據。我們得到樟芝酸 C 可以抑制 LPS 誘導的發炎反應在體外。也顯示樟芝酸 C 擁有能力作為未來的抗發炎藥物。

Excessive or uncontrolled inflammation has been confirmed associating with the progression of many diseases, including: rheumatoid arthritis, multiple sclerosis, and neurodegenerative diseases. Antcin C, a bioactive compound isolated from *Antrodia cinnamomea*, a rare and expensive medicinal fungus, has been identified as a cytotoxic agent against Hep G2 and MCF-7 cells.

In our study, antcin C was used on LPS-induced inflammatory response in RAW 264.7 macrophage cell line, and the results showed that antcin C would not affect the cell viability of RAW 264.7 cell. Moreover, antcin C can inhibit the iNOS and COX-2 protein expression, and significantly reduce the intracellular content of TNF-α in a does dependent.

Besides, our results indicate that antcin C inhibited the inflammation via mitogen activated protein kinase (MAPK) family ERK1/2, c-JNK, and p38 protein expression. NF-κB activity is dominated by its inhibiting molecular IκB. Therefore, we also explore IκB/NF-κB pathway. Based on the experimental results, the data indicate that antcin C can inhibit LPS-induced inflammatory