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Sesamin: From sesame to the functional foods

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Sesame has been used as food over 4,000 years. It contains very high value of nutritional compounds. One of them is sesamin, which is the most containing of lignan in sesame. There are many research papers concerning about its pharmacological activities. This leading to the research and development and apply this natural compound, sesamin, for widely uses as functional foods and cosmetics. It has been studied in our laboratory as anti-cartilage degradation (as anti-osteoarthritis and anti-rheumatoid arthritis) by inhibition of the Inteleukin-1 Beta, which is the most potent pro-inflammatory cytokine, through NFkB and NAPK signaling pathway in human chondrocyte culture. Sesamin shows the chondroprotective effects in cartilage explant culture and papain induced cartilage degradation in rat model. We are also studied anti-osteoporosis as enhancing the mineralization and stimulating osteoblast functions by up-regulating Type-II collagen, alkaline phosphatase and bone morphogenetic protein-2 (BMP-2). The osteoclastogenesis was inhibited by sesamin. Furthermore, the neuro-protective effect on the LPS-induced neuronal cell (PC12) development has been studied. Finally, the pathway of commercialization for development of simple and innovative dietary supplement of healthy products from sesamin with other natural resources, such as black rice bran and pre-cooked rice have been successfully formulated and sold in several countries, especially in Southeast Asia.

Biography

Prachya Kongtawelert has completed his PhD from Sydney University in 1992. He is currently working as an Associate Professor in Department of Biochemistry. He is interested in researches concerning about pathogenesis of osteoarthritis, rheumatoid arthritis, including diagnosis and treatment. Further, he has developed the formulation for dietary supplement products based on the active ingredient of sesamin, which is a natural compound from sesame.

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