

NATURAL MEDICINES DESIGN BASED ON
ENCAPSULATION TECHNOLOGY

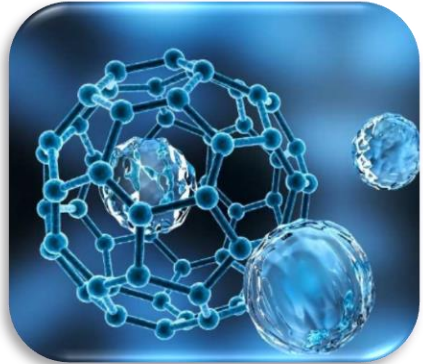
About Us

Today, societies are facing problems with a healthy lifestyle. A change in lifestyle using natural products that are effectively healthy is greatly required. Given the significant advances in medicine, all possible capacities should be applied to reduce treatment expenses by increasing effectiveness and reducing side effects of health-oriented products. For a long time, I have felt upset about the exorbitant costs of medicines on the one hand and the low effectiveness and side effects of consuming them on the other hand. By targeting the ongoing academic research since 2016, we have used Nano encapsulation technology to form a strong, scientific and committed team to design a variety of smart medicines with the aim of increasing effectiveness and reducing side effects. So far, many projects have been successfully completed in the laboratory and the results have marked a starting point for the creation of a knowledge-based company called Mehr o Mah Pharmaceutical Company. The aim of this company is the industrial manufacturing of various medicines on the basis of encapsulation technology.

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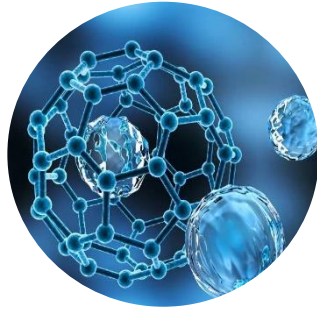
Mehr&Mah Pharmaceutical Company



The Advantages of
Encapsulated Cinnamom

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Diabetes

The effect of cassia cinnamon on diabetes

The results of study demonstrate that intake of cinnamon per day reduces serum glucose, triglyceride, LDL cholesterol, and total cholesterol in people with type 2 diabetes and suggest that the inclusion of cinnamon in the diet of people with type 2 diabetes will reduce risk factors associated with diabetes and cardiovascular disease (1). Cinnamon increase phosphorylation of the insulin receptor, which increases insulin sensitivity. Increased insulin sensitivity may improve blood glucose control and lipid levels. Cinnamon extracts also seem to activate glycogen synthetase and increase glucose uptake (2).

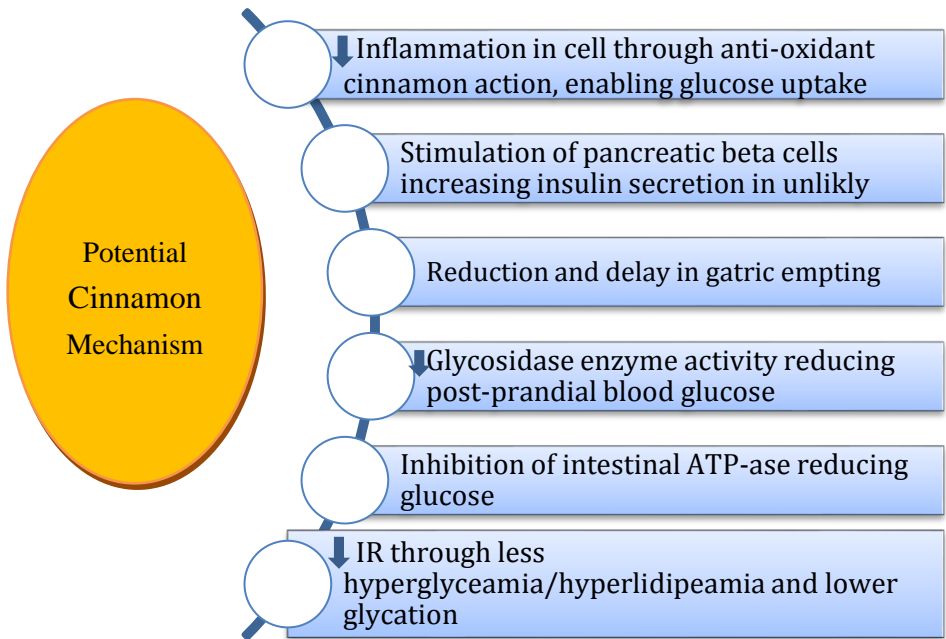


Fig1. Potential antihyperglycaemic actions of cinnamon (3).

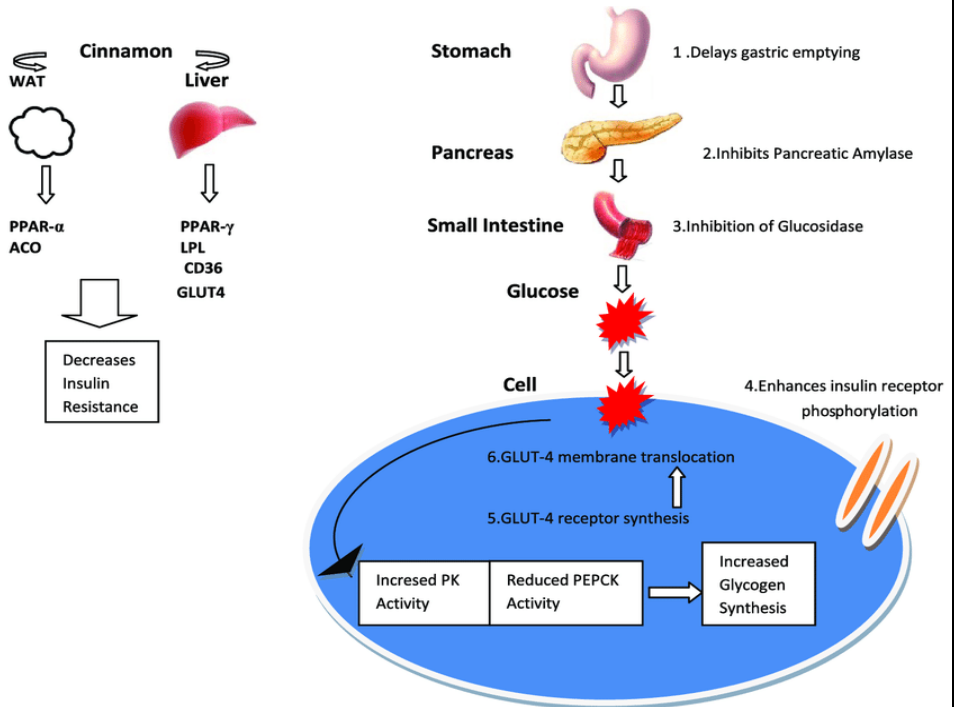


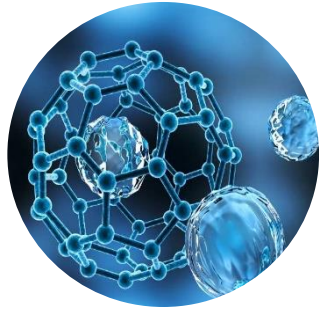
Fig2. Molecular mechanisms of Cinnamon by which it exerts hypoglycemic activity. PK: Pyruvate Kinase, PEPCK: Phosphoenol Carboxy Kinase, PPAR-gamma: Peroxisome Proliferator Activated-Receptor gamma, WAT: White Adipose Tissue, ACO: Acyl-CoA Oxidase, GLUT-4: Glucose transporting protein 4, LPL: Lipoprotein lipase, CD36: Fatty Acid Transporter (4).

Reference:

- 1-professional.diabetes.org/abstract/follow-study-combined-hypoglycemic-effects-cinnamon-heshouwu-and-mushroom-extracts-and
- 2-Naturalmedicines.therapeuticresearch.com
- 3-Kirkham, S., Akilen, R., Sharma, S. and Tsiami, A., 2009. The potential of cinnamon to reduce blood glucose levels in patients with type 2 diabetes and insulin resistance. *Diabetes, obesity and metabolism*, 11(12), pp.1100-1113.
- 4-Medagama, A.B., 2015. The glycaemic outcomes of Cinnamon, a review of the experimental evidence and clinical trials. *Nutrition journal*, 14(1), pp.1-12.

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PCO

The effect of cassia cinnamon on PCO

Cinnamon supplementation improves menstrual cyclicity and may be an effective treatment option for some women with PCOS (1). The importance of polyhydroxyphenols has extensively increased due to their potent cardio protection, anti-carcinogenic, anti-oxidant, anti-apoptotic, and anti-inflammatory properties. Since oxidative stress, hormonal, metabolic, and endocrine disturbances have been shown to play a crucial role in the initiation/progression of PCOS, polyphenols are suggested to be an effective treatment for this disorder (2).

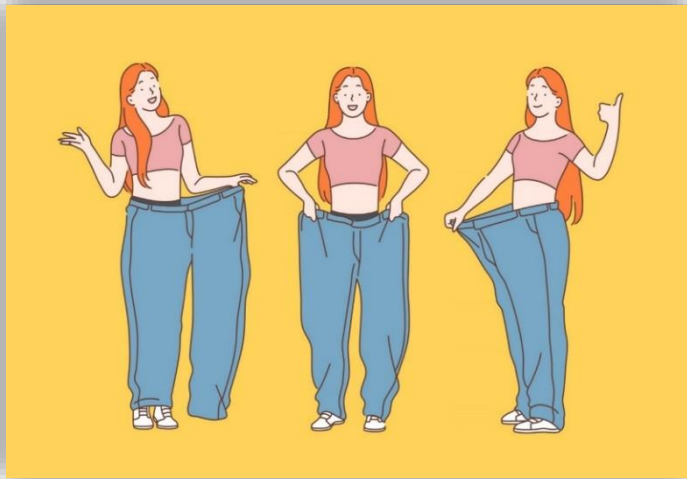
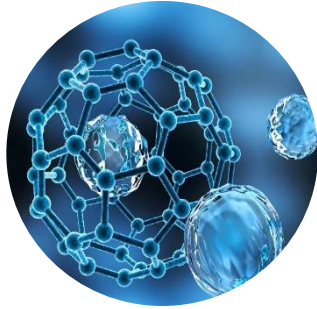


Reference:

- 1- Khanna, S., Jaiswal, K.S. and Gupta, B., 2017. Managing rheumatoid arthritis with dietary interventions. *Frontiers in nutrition*, p.52.
- 2- https://tmedweb.tulane.edu/pharmwiki/doku.php/rheumatoid_arthritis

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weight loss

The effect of cinnamon on weight loss

Cinnamon extract. increased brown adipocytes markers and reduced white adipocytes markers in the 3T3-L1 adipocytes. Oral administration of cinnamon significantly increased UCP1 expression in the subcutaneous adipose tissue (1).

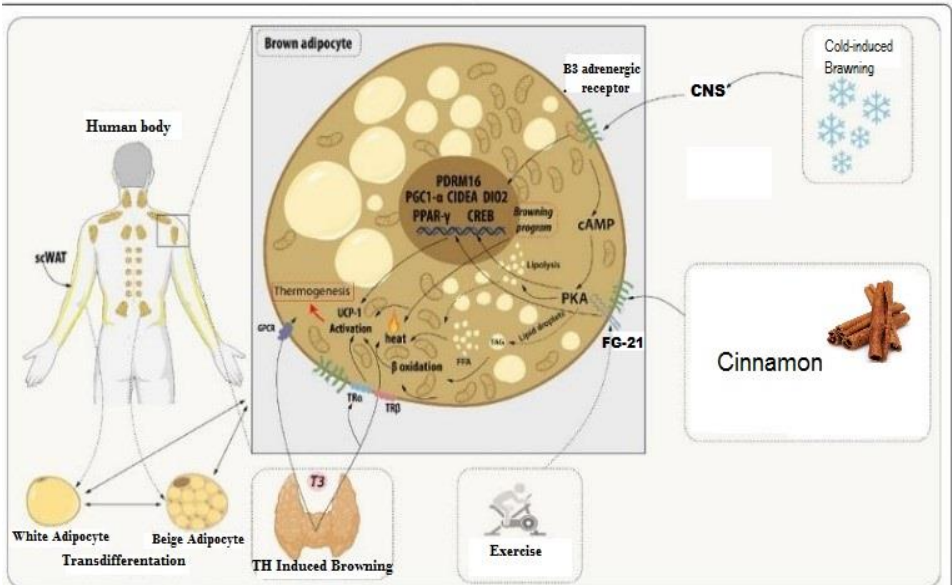


Fig1. Brown adipocyte regulation by exogenous agents (2).

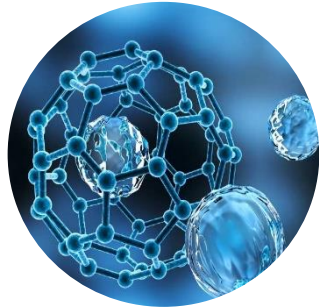
Reference:

1-www.nature.com/scientific-reports

2-Machado, S.A., Pasquarelli-do-Nascimento, G., da Silva, D.S., Farias, G.R., de Oliveira Santos, I., Baptista, L.B. and Magalhães, K.G., 2022. Browning of the white adipose tissue regulation: new insights into nutritional and metabolic relevance in health and diseases. *Nutrition & Metabolism*, 19(1), pp.1-27.

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bones health

The effect of cinnamon on Cartilage and bones health

Cinnamon has the effect of accelerating the healing of the disease and improving wrist inflammation (1). The researchers observed that inflammatory markers (i.e., serum levels of C-reactive protein and tumor necrosis factor-alpha) were significantly reduced in women who took cinnamon supplements compared to women who took a placebo. In addition, the participants showed a significant reduction in diastolic blood pressure and swelling in the joints (2). Cinnamon has an effect on the secretion of cytokines IL-2, IL-4 and IFN- γ and reducing the level of TNF- α (3).

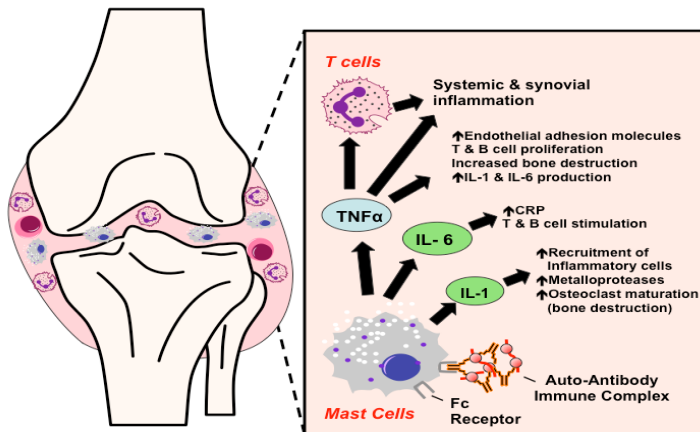


Fig1. In rheumatoid arthritis autoimmune reactions stimulate macrophages and T cells to produce multiple inflammatory cytokines in the joints. (4)

Reference:

- 1-Hassani, S., Delavare, S.H., 2020. The Effect of Eight Weeks of Hand-Selected Strength Exercises and the Cinnamon Supplementation on Inflammatory Biomarkers in Elderly Women with Osteoarthritis. *Journal of Clinical Research in Paramedical Sciences*, 9(2).
- 2-Gruenwald, J., Freder, J. and Armbruester, N., 2010. Cinnamon and health. *Critical reviews in food science and nutrition*, 50(9), pp.822-834.
- 3-Khanna, S., Jaiswal, K.S. and Gupta, B., 2017. Managing rheumatoid arthritis with dietary interventions. *Frontiers in nutrition*, p.52.
- 4- https://tmedweb.tulane.edu/pharmwiki/doku.php/rheumatoid_arthritis