## ABSTRACT

## Antiinflammatory Activities Of A Combination Of Turmeric (Curcumae longae Rhizoma) And Black Pepper (Piperis nigri Fructus) In Wistar Rat (Rattus norvegicus)

By

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Turmeric is a spice that has been known for a long time and has attracted the interest of the medical world because of its properties. Most of the benefits of turmeric related with antioxidant and anti-inflammatory effects, but consuming turmeric alone is less beneficial due to its poor bioavailability, mainly due to its poor absorption of active substances, fast metabolism and elimination. There are several substances that can increase bioavailability, including piperine which is the active component of black pepper. This study aims to examine the anti-inflammatory properties of acute and chronic combination of turmeric and black pepper powder. Two combined doses were tested i.e combination A (turmeric/black pepper = 205,2 / 10,8 mg/kg bw) and combination B (turmeric/black pepper = 136,8 / 7,2 mg/kg bw). Anti-inflammatory effects were tested on Wistar rats which included acute anti-inflammatory effects with λ -carrageenan as inductors and chronic anti-inflammatory effects with Freund's Complete Adjuvant as inductors. In the acute anti-inflammatory test, single powdered turmeric (205,2 mg/kg bw) did not showed significant anti-inflammatory activity,but the A combination could trigger inflammation significantly (p<0.05) at the 4th, 6th, 8th and 24th hour 47,0 ; 27,6 , 25,1 and 36.1%. On chronic anti-inflammatory test, the two combinations (A and B) did not show chronic anti-inflammatory base on parameters i.e., body weight, paw volume, joint and paw thickness, local hyperthermia, mobility, maximal arthritis index and joint stiffness, TNF-a and IL-17A serum titers. Combination A can reduce Nitric Oxide levels (p<0.1), and combination B can significantly reduce Anti-Cyclic Citrullinated Peptide Antibody (anti-CCP) levels (p<0.05). The results of determining anti-CCP levels provide an overview of the safety of using a combination of turmeric powder and black pepper as an anti-inflammatory.

Keywords: Acute Anti-inflammatory, Chronic Anti-inflammatory, Turmeric, Blackpepper, Combination.