

## ABSTRAK

**LATAR BELAKANG:** Monosodium glutamate (MSG) adalah salah satu senyawa yang mengakibatkan stress oksidatif yang ditandai dengan pembentukan ROS. ROS dapat meningkatkan kadar *Malondialdehyde* (MDA), pembentukan senyawa 8-*Hidroksi guanosine* (8-OHdG), hingga berakibat pada penurunan ketebalan tubulus seminiferus. Ekstrak *Countinous Multi-Stage Countercurrent Extraction* (CMCE) propolis mengandung antioksidan potential yang berperan sebagai *non-enzymatic radical scavenger*. **TUJUAN:** untuk membuktikan pemberian ekstrak CMCE propolis dapat menurunkan kadar MDA, 8-OHdG, dan meningkatkan ketebalan tubulus seminiferus pada tikus jantan *Wistar* yang diinduksi MSG.

**METODE:** Penelitian ini menggunakan rancangan *Post Test Only Control Group Design*. Sebanyak 18 ekor tikus jantan *Wistar* dibagi menjadi 3 kelompok: kelompok perlakuan MSG (K), kelompok perlakuan ekstrak CMCE propolis dengan dosis 8,3mg/hari (P1) dan 10,8mg/hari (P2). Pemberian ekstrak CMCE propolis diberikan secara oral selama 21 hari. Kadar MDA dan 8-OHdG diukur dengan metode Elisa Kit dan ketebalan tubulus seminiferus dengan mikroskopik.

**HASIL:** Kadar MDA ( $\mu\text{mol/L}$ ) pada kelompok K (34,35), kelompok P1 (19,07), dan kelompok P2 (13,66) lebih rendah bermakna,  $p < 0,05$ . Kadar 8-OHdG (ng/ml) pada kelompok K (27,04), kelompok P1 (22,28), dan kelompok P2 (17,73) lebih rendah bermakna,  $p < 0,05$ . Ketebalan tubulus seminiferus ( $\mu\text{m}$ ) pada kelompok K (86,55), kelompok P1 (95,40), dan kelompok P2 (105,67) lebih tinggi bermakna  $p < 0,05$ .

**KESIMPULAN:** Pemberian ekstrak CMCE propolis terbukti menurunkan kadar MDA, kadar 8-OHdG, dan meningkatkan ketebalan tubulus seminiferus pada tikus jantan yang diinduksi MSG.

**Kata kunci:** MSG, Ekstrak CMCE Propolis, Kadar MDA, Kadar 8-OHdG, Ketebalan Tubulus Seminiferus

## ABSTRACT

**BACKGROUND:** Monosodium glutamate (MSG) is a composition that causes oxidative stress which is characterized by the formation of ROS. ROS can increase the level of Malondialdehyde (MDA), the formation of a mixture of 8-Hydroxy guanosine (8-OHdG), which results in the addition of seminiferous tubule thickness. Countinous Multi-Stage Extract Countercurrent Extraction (CMCE) Countinous contains antioxidants that have the potential to be non-enzymatic radical scavengers. **PURPOSE:** To prove the administration of CMCE propolis extract can reduce MDA, 8-OHdG levels, and increase seminiferous tubule levels in MSG-induced Wistar male rats.

**METHOD:** This study uses a Post Test Only Control Group Design. A total 18 of Wistar male rats were divided into 3 groups: MSG control group (K), CMCE propolis extract control group with a dose of 8.3 mg / day (P1) and 10.8 mg / day (P2). Giving extract of CMCE propolis is given orally for 21 days. MDA and 8-OH levels were used with the Elisa Kit method and the thickness of the seminiferous tubules with microscopy.

**RESULTS:** MDA levels ( $\mu\text{mol} / \text{L}$ ) in group K (34.35), group P1 (19.07), and group P2 (13.66) lower with competence,  $p < 0.05$ . Levels of 8-OHdG (ng / ml) in group K (27.04), group P1 (22.28), and group P2 (17.73) were lower in combination,  $p < 0.05$ . Seminiferous tubule thickness ( $\mu\text{m}$ ) in group K (86.55), group P1 (95.40), and group P2 (105.67) were higher in group  $p < 0.05$ .

**CONCLUSION:** Provision of CMCE propolis extract has been shown to reduce MDA levels, 8-OHdG levels, and increase seminiferous tubular thickness in MSG-induced male rats.

**Keywords:** MSG, CMCE Propolis Extract, MDA Levels, 8-OHdG Level, Thickness of Seminiferous Tubules