

**EFFECT OF VITAMIN C AND E TOWARDS HISTOPATHOLOGICAL  
CHANGES OF DUODENUM IN MICE INDUCED WITH BORAX**

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**ABSTRACT**

The aim of this research was to investigate the effect of vitamin C and E towards histopathological changes of duodenum in mice induced with borax. Twenty five male mice of BALB/c strain divided into five groups; K1 (vitamin control) was given 0,56 mg/mice /day of vitamin C solution combined 2,1 mg/mice/day of vitamin E solution, K2 (borax control) was given 5,2 mg/mice/day of boraks, P1 was given combination of 0,56 mg/mice/day vitamin C and 2,1 mg/mice/day vitamin E solutions and 5,2 mg/mice/ day of borax, P2 was given combination of 1,12 mg/mice /day of vitamin C and 4,2 mg/mice/day of vitamin E solutions and 5,2 mg/mice/day of borax, P3 was given combination of 2,24 mg/mice/day of vitamin C and 4,2 mg/mice/day of vitamin E solutions and 5,2 mg/mice/day of borax. Borax solution on P3, P4 and P5 groups induced in an hour after each groups treated with combination of vitamin C and E solutions. The treatment were given by oral gavage for 14 days. The result against submucosal edema of duodenum indicated there was not any significant difference ( $P>0.05$ ) between K1 (vitamin control) and K2 (boraks control) groups. There was a signifant difference between K2 (borax control) with P1 and P3 groups. There was indicated that combination of vitamin C and vitamin E decrease the submucosal edema of duodenum induced with borax. The result against the damage of mucous epithelial indicated there was a significant difference ( $P<0,05$ ) between K2 group with P1, P2, and P3 groups. There was not any significant difference between P1, P2, and P3 groups. There was indicated that combination of vitamin C and vitamin E decrease the submucosal edema of duodenum induced with boraks.

**Keywords:** Vitamin E, Vitamin C, submucosal edema, mucous epithelial, mice, boraks