

## **Effect of marmin, a compound isolated from aegle marmelos correa, on contraction of the guinea pig-isolated trachea.**

### **ABSTRACT**

Marmin or 7-(6',7'-dihydroxygeranyl-oxy)coumarin is a compound isolated from *Aegle marmelos* Correa. In the study, we examined the effects of marmin on the contraction of guinea pig-isolated trachea stimulated by several inducers, namely histamine, metacholine, compound 48/80. We also evaluated its action against contraction induced by extracellular or intracellular calcium ion. The possibility of marmin to potentiate the relaxation effect of isoprenaline was also studied. Marmin added in the organ bath at 10 min prior to the agonist inhibited the contraction elicited by histamine and metacholine in a concentration-dependent manner. Moreover, marmin antagonized the histamine-induced contraction in competitive manner. Marmin mildly potentiated the relaxation effect of isoprenaline. In the study, marmin abrogated the contraction of tracheal smooth muscle induced by compound 48/80, an inducer of histamine release. Besides, marmin successfully inhibited  $\text{CaCl}_2$ -induced contraction in  $\text{Ca}^{2+}$ -free Krebs solution. Marmin also inhibited two phases of contraction which were consecutively induced by metacholine and  $\text{CaCl}_2$  in  $\text{Ca}^{2+}$ -free Krebs solution. Based on the results we concluded that marmin could inhibit contraction of the guinea-pig tracheal smooth muscle, especially by interfering histamine receptor, inhibiting the histamine release from mast, inhibiting intracellular  $\text{Ca}^{2+}$  release from the intracellular store and the  $\text{Ca}^{2+}$  influx through voltage-dependent  $\text{Ca}^{2+}$  channels.

**Keyword:** Marmin; *Aegle Marmelos Correa*; Guinea Pig-Isolated Trachea.