

## ABSTRACT

**Mechanism of Myometrial Contraction in Pregnant Mice after the Administration of Rumput fatimah (*Anastatica hierochuntica* L.) Extract through Expression of OTR, FP, Cx43, PGE2 and PGF2 $\alpha$  levels**

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**Objective:** This study aimed to analyze the mechanism of myometrial contractions in pregnant mice after the administration of *Rumput fatimah* (*Anastatica hierochuntica* L.) extract through the expression of connexin-43, OTR and FP receptors and prostaglandin levels.

**Methods:** The research was a randomized post-test only control group design. Twenty-one pregnant mice (*Mus musculus*) Balb/C strain which met the sampling criteria were divided into three groups, each of which consisted of 7 mice. They were classified as control group (P0) and two treated groups with administrations of Rumput fatimah (*Anastatica hierochuntica* L.) extract of different doses (P1 = 100 mg/kg BW; P2 = 150 mg/kg BW). Extracts were given per sonde for 5 days from the 14th to 18th day of pregnancy. Termination was carried out on the 19th day of pregnancy to take blood serum and uterine tissue for bioassay/ELISA, immunohistochemical staining and examination of uterine contractions using Powerlab. The results obtained were analyzed by employing comparative tests and path analysis.

**Results:** There were significant differences in the increase in expression of connexin-43, OTR, and FP receptors in pregnant mice myometrium cell between treated groups and the control group ( $p < 0.05$ ), and there were significant differences in prostaglandin levels (PGE2, PGF2 $\alpha$ ) between the control and the treated groups ( $p < 0.05$ ). The administration of Rumput fatimah (*Anastatica hierochuntica* L.) extract increased the frequency of contractions ( $p = 0.014$ ,  $p < 0.05$ ) and the amplitude of contraction ( $p = 0.017$ ,  $p < 0.05$ ) but did not cause an increase in duration of contraction ( $p = 0.388$ ,  $p > 0.05$ ). The results of path analysis showed that rumput fatimah (*Anastatica hierochuntica* L.) extract increased contraction of pregnant mice myometrium cells through the OTR receptor pathway.

**Conclusion:** Rumput fatimah (*Anastatica hierochuntica* L.) extract increases the expression of OTR, FP, Cx43, PGE2, and PGF2 $\alpha$  levels and uterine contractions, therefore it is potential as a uterotropic agent.

**Keywords:** *Anastatica hierochuntica* L., Myometrial Contraction, OTR, FP, Cx43, Prostaglandins.