

P.1.g.013 Investigation of the Effects of Chlorogenic acid, Ferulic acid, Gallic acid and Quercetin on Pain Sensitivity Threshold in Rats

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Background and purpose



Some of the most widespread polyphenols in natural food sources (such as fruits, vegetables, cereal grains, coffee, tea and wine) are phenolic acids and flavonoids. **Purpose:** to investigate the effect of equal doses of chlorogenic acid (CA), ferulic acid (FA), gallic acid (GA) and quercetin (Q) on pain sensitivity threshold in young/healthy rats.

Methods

Animals: male Wistar rats (200-250 g)

Experimental substances:



CA, GA, FA and Q from Sigma Aldrich (Germany)



Experimental design:

- ❖ 4 testing periods (7, 14, 21 and 30 days)
- ❖ 5 groups (n=10) for each period: Control (C), CA, FA, GA and Q

Treatment: saline (10 ml/kg), CA, FA, GA and Q (20 mg/kg as a 10 ml/kg solution) for the respective groups

Assessment of pain sensitivity threshold:



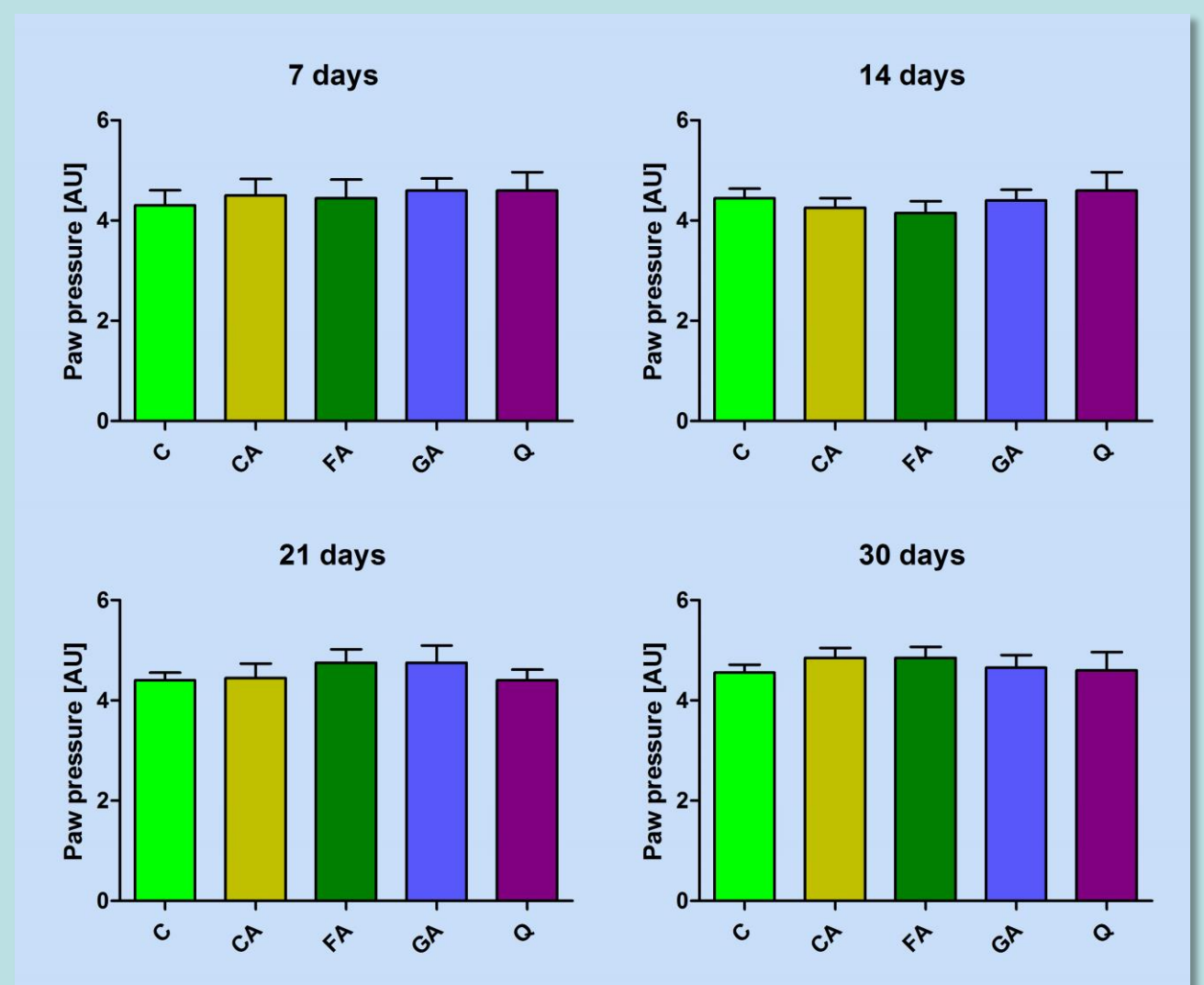
one hour after the last treatment on the 7th, 14th, 21st and 30th day using the paw pressure test according to the method of Randall & Selitto

Behavior recorded: the pressure at which the rat pulled back its paw as a result of pain sensation; measured in arbitrary units (AU)

Statistical analysis: Student's t-test, GraphPad Prism statistical software

There is no potential conflict of interests.

Results



Conclusion

Chlorogenic acid, ferulic acid, gallic acid and quercetin had no significant effects on pain sensitivity of the uninflamed rat paw. These results suggest that the tested substances show no central opioid-like analgesic activity.

References

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