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Pomegranate juice ameliorates dopamine release and motor and olfactory deficits in the rotenone-induced rat model of Parkinson's disease

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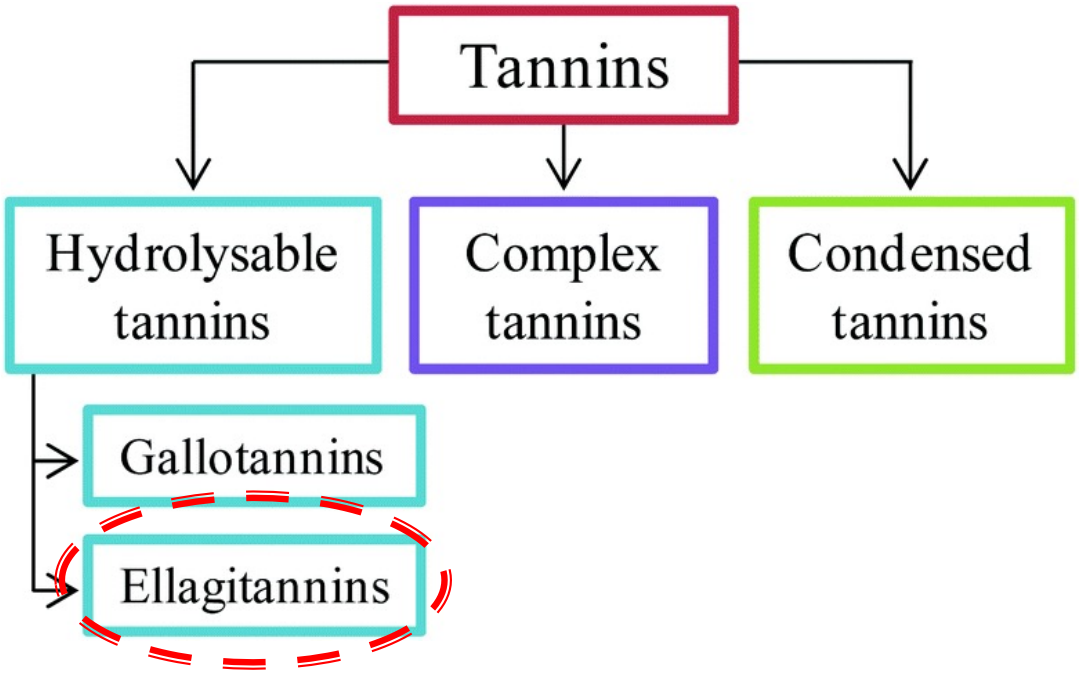

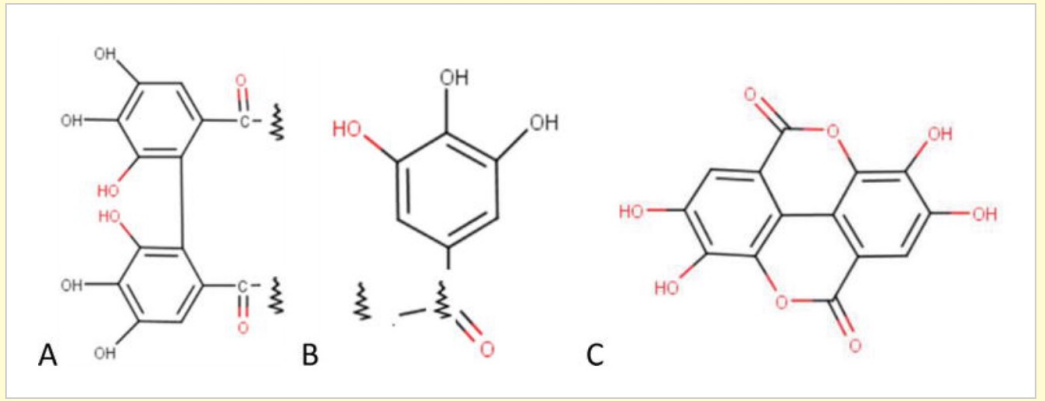

Figure 1.

Basic structures of ellagitannins: (A) HHDP acid (R radical); (B) galloyl unit (G radical); (C) ellagic acid.

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Article

Neuroprotective Effects of Pomegranate Juice against Parkinson's Disease and Presence of Ellagitannins-Derived Metabolite—Urolithin A—In the Brain

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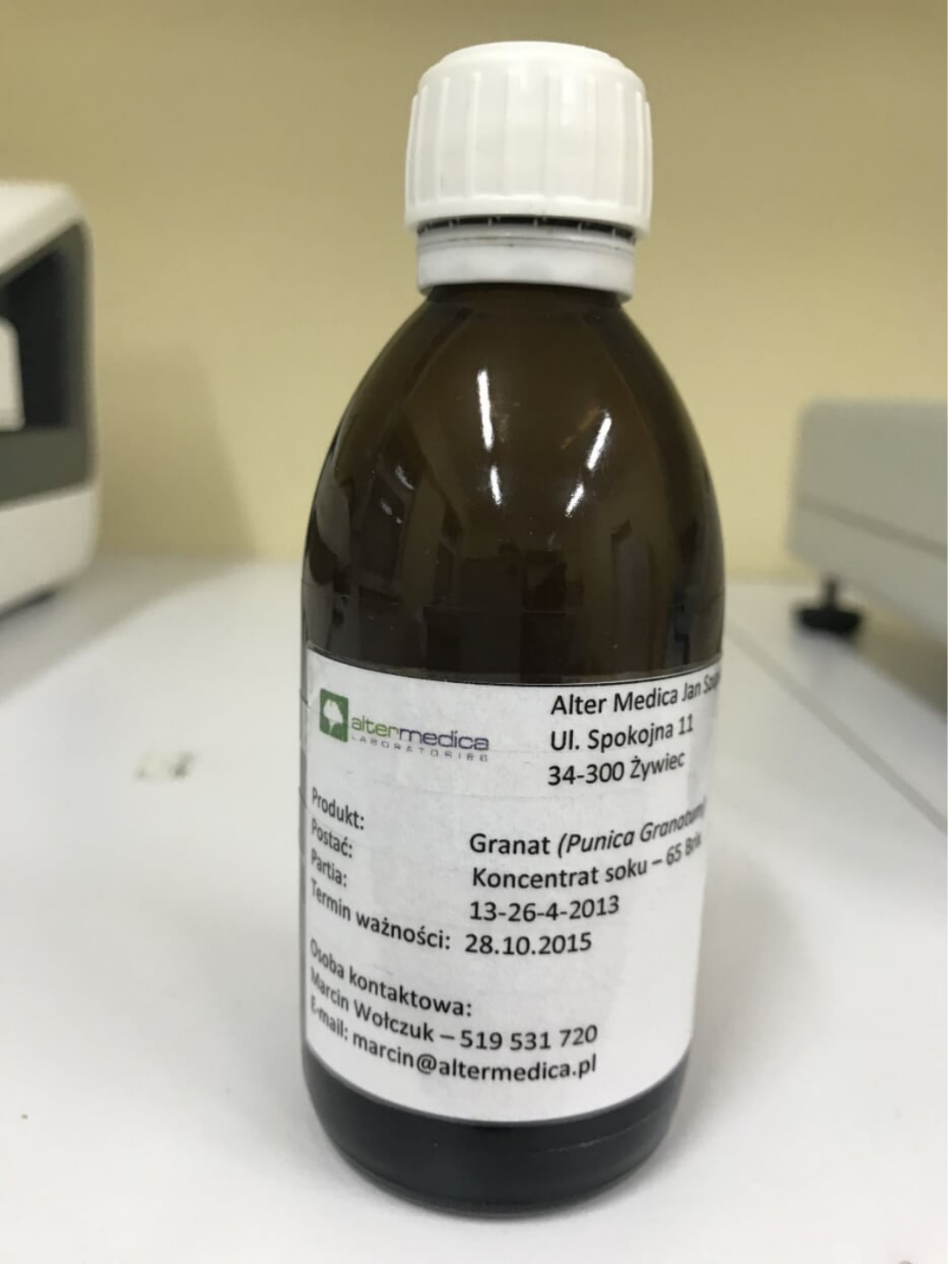


- galloyl-hexoside
- ellagic acid-hexoside
- 3-bis-HHDP-hexoside (pedunculagin)
- 4-galloyl-bis-HHDP-hexoside (casuarinin)
- ellagic acid

Pomegranate juice* (*i.g.*)

10days

Pomegranate juice* (*i.g.*)
Rotenone #(*s.c.*)

35 days

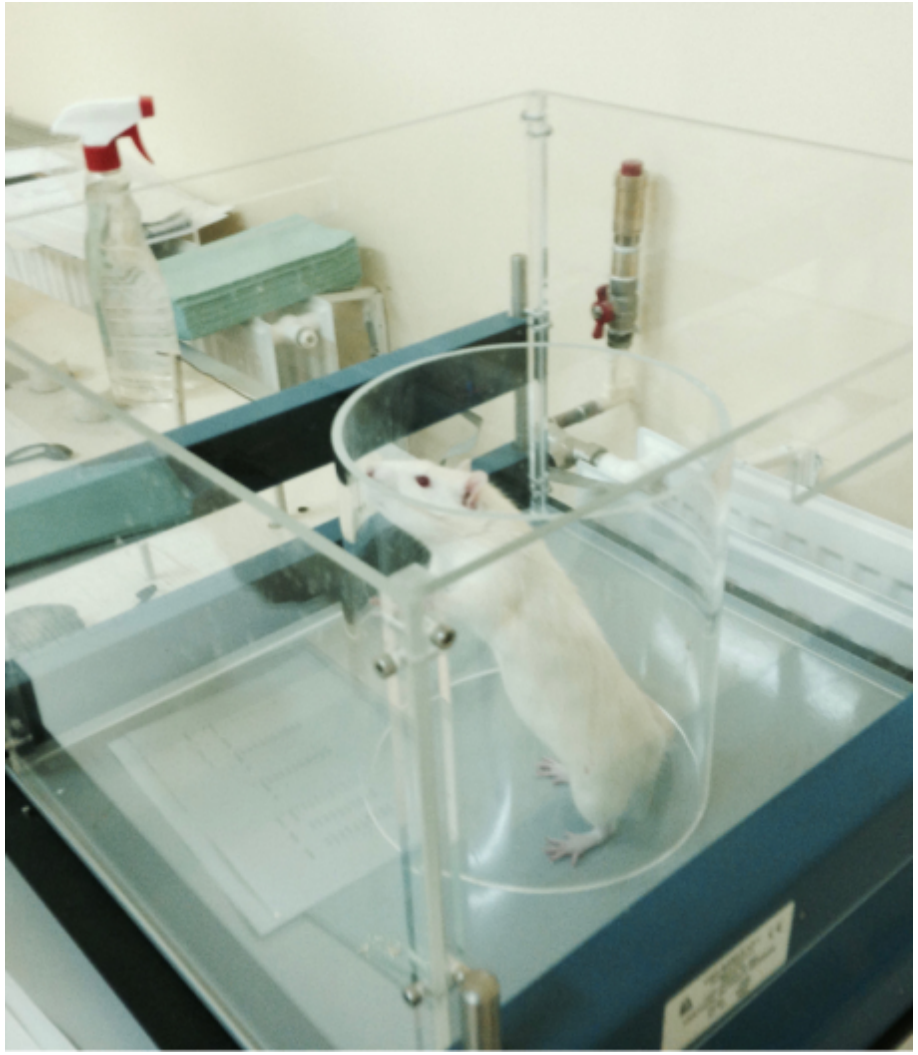
behavioural tests

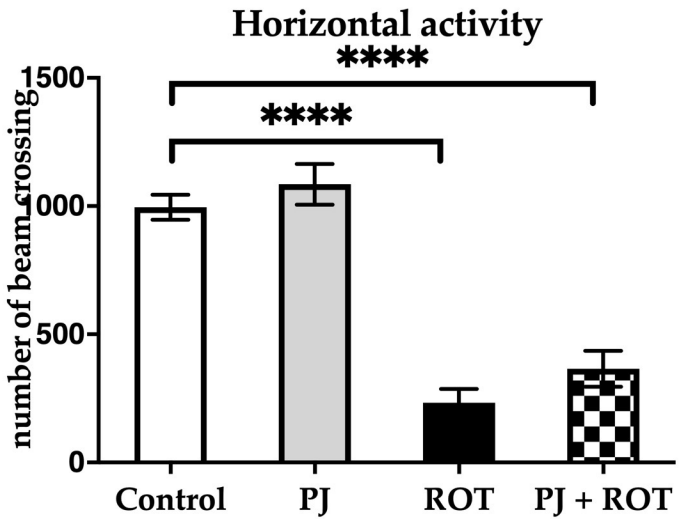
24 hours

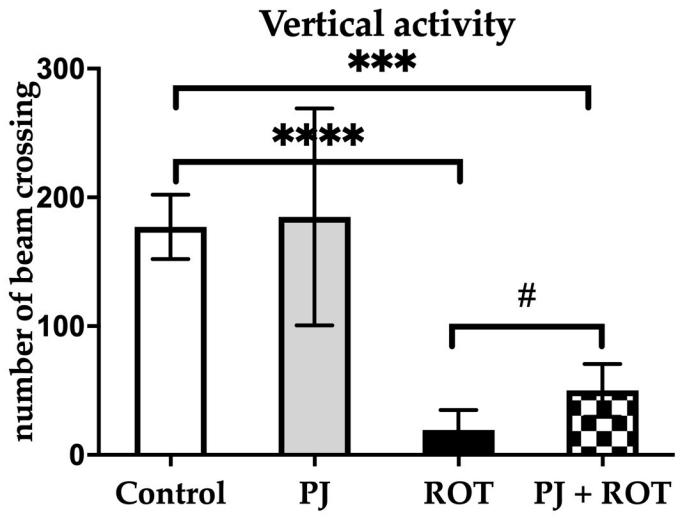
euthanasia /brain harvest

* 500 [mg/kg b.w.]
\# 1.3 [mg/kg b.w.]

MOTOR ACTIVITY





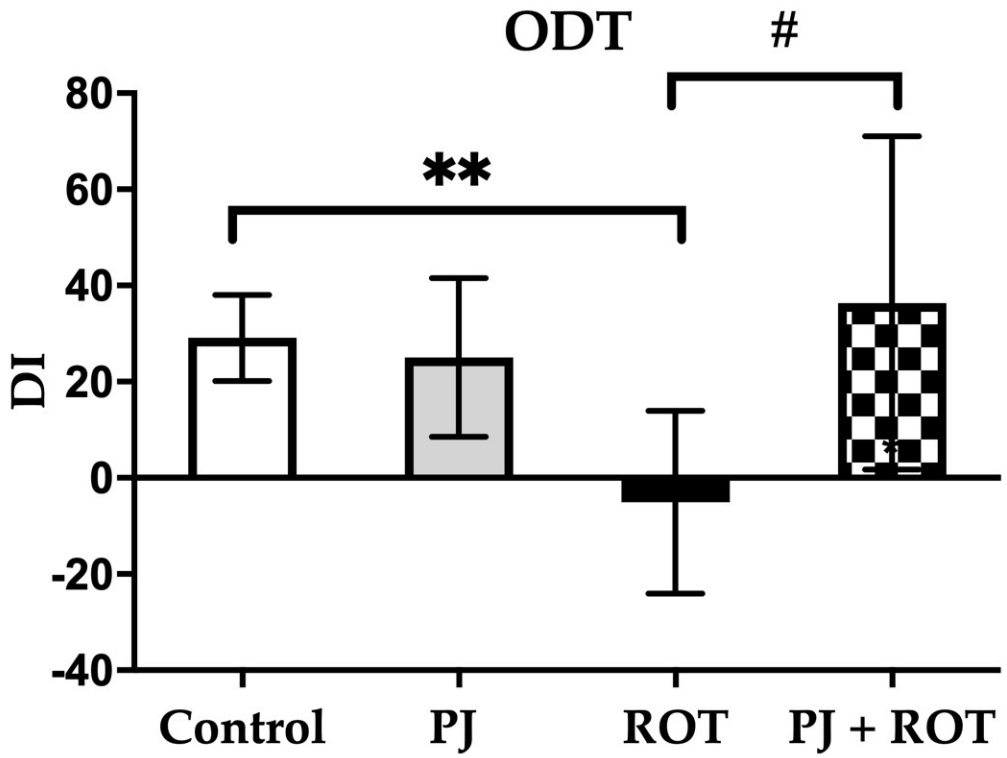


OFACTORY DISCRIMINATION TASK (ODT)

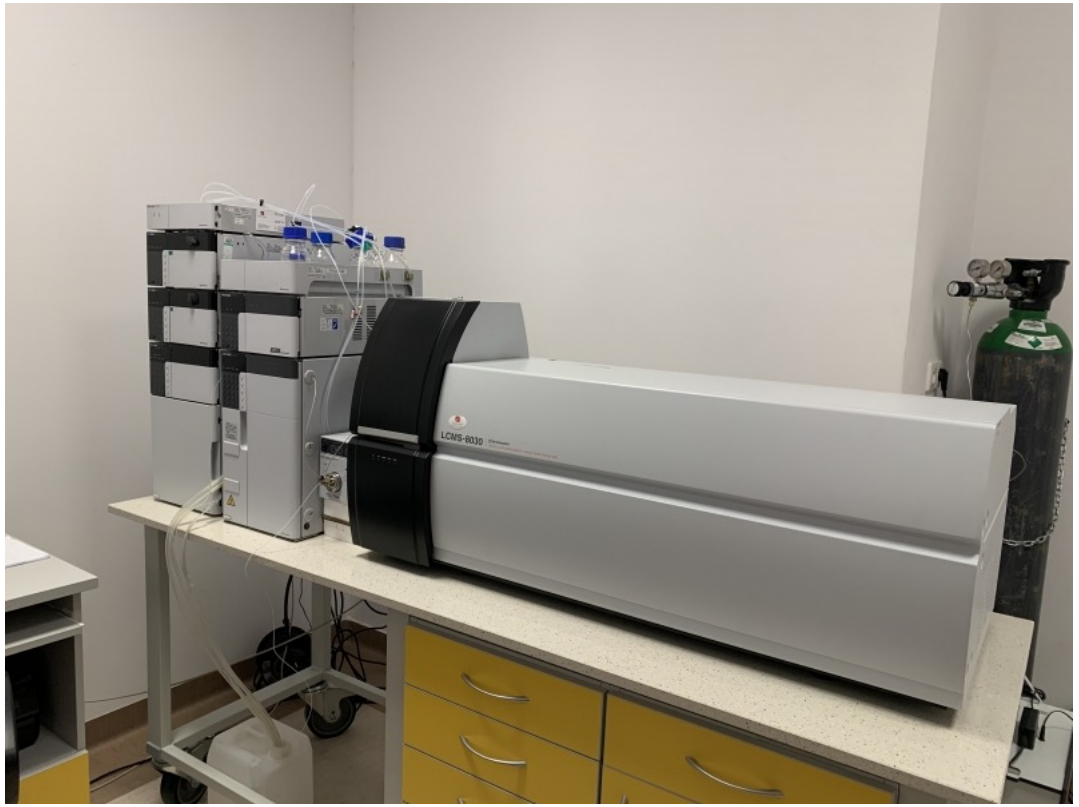
Discrimination index (DI) – a ratio of

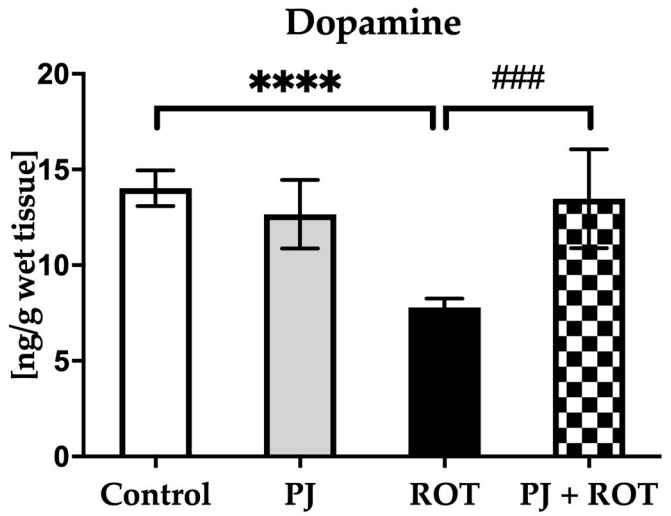
- the difference in exploration time between the two compartments (compartment non-familiar — compartment familiar)
- the total time of exploration for both compartments (compartment non-familiar + compartment familiar).

DI was expressed as a percentage, where positive and negative scores correspond to a preference towards non-familiar and familiar odors, respectively.

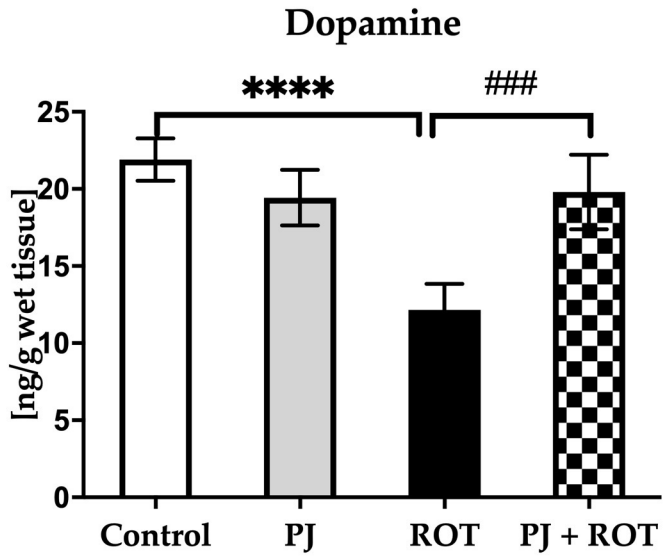


DOPAMINE LEVEL





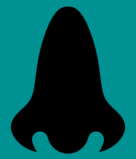
midbrain



cortex

Conclusions and Perspectives

PJ treatment prevented



the development of PD-like olfactory impairment and slightly mitigated a motor deficit

DA depletion in ROT-lesioned rats

Acknowledgment