



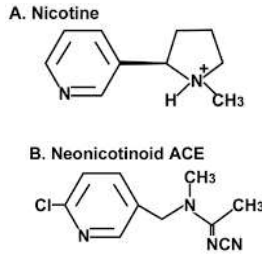
Embryonic exposure to Acetamiprid insecticide on neuron-glia interaction in the cerebellum of neonatal rat

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Background

Acetamiprid, ACE

- ACE mimics nicotine's chemical structure
- ACE binds to nAChR
- NOAEL in rat maternal developmental toxicity: 16 mg/kg bw per day



Concerns

- US EPA: ACE as "unlikely" human carcinogen but
- Effects on non-targeted pests:
1. Bees
 2. Developing mammalian brain?

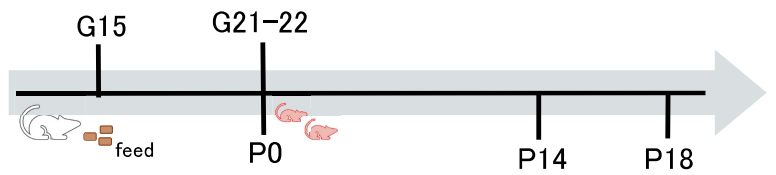
Aim

Examination of the effect of **different ACE doses** on the developing rat cerebellum

Methodology

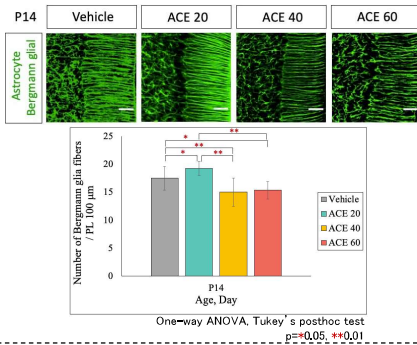
Treatment

1. ACE
20 mg/kg (ACE 20),
40 mg/kg (ACE 40),
60 mg/kg (ACE 60)
2. DMSO as vehicle

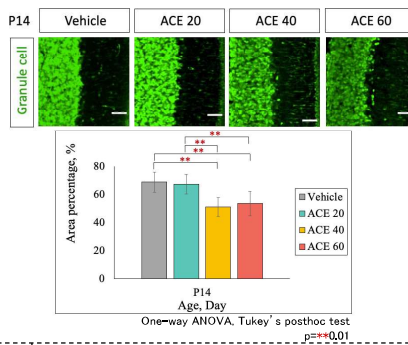


Results and Discussions

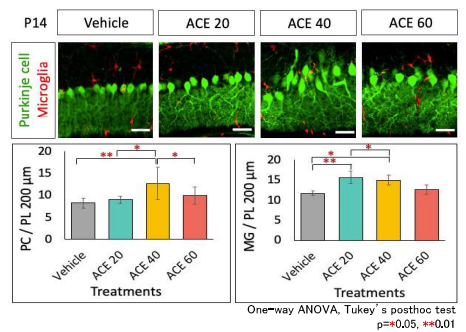
Bergmann glial fibers decrease



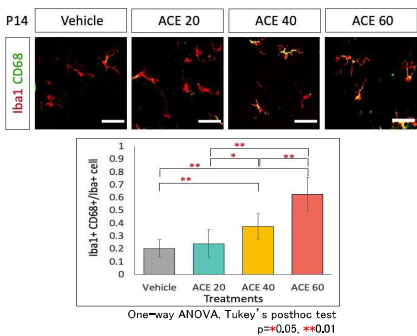
Granule cell area decrease



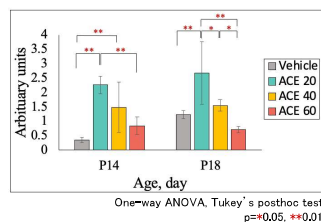
Purkinje cell alignment abnormalities and microglia accumulation



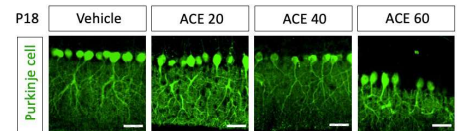
Phagocytic microglia increase



Astrocyte increase



Purkinje cell gaps



All scale bar 50 μm

