Main findings:
- Compared to wild type (WT), S100B overexpressing (TG) mice showed higher baseline levels of cell proliferation.
- There were no significant differences between genotypes in baseline levels of ongoing neurogenesis, cell survival, and in the neurogenic response to chronic fluoxetine treatment.
- These results correlate with behavioral performance in the novelty-induced hypopagia test (a task sensitive to neurogenesis), in which there were no differences between genotypes in either vehicle or chronic fluoxetine treated mice.
- TG mice had higher sensitivity to the acute effects of fluoxetine in the tail suspension test.

Background:
- The S100 calcium binding protein B (S100B) has neurotrophic effects and its secretion appears to be mediated by 5-HT1A receptors and by treatment with drugs that increase serotonin transmission [1, 5].
- In hippocampal neurons, serotonin-mediated S100B release has neurotrophic effects, and intraventricular S100B infusion in adult rats leads to higher cell proliferation in the dentate gyrus, after ischemia [2].

Methods:
- 8 to 9 animals were randomly assigned to each group
- Fluoxetine treatment: 10mg/kg, 21 days, i.p.
- bromodeoxyuridine (BrdU) was given, i.p., twice daily (75 mg/kg) for 3 consecutive days before the above-mentioned treatment with fluoxetine began.
- On the final day of injections, brains were fixed via transcardial perfusion, for immunohistochemical analysis

Aims:
- To test whether S100B is involved in the neurogenic response to fluoxetine, we measured adult neurogenesis and depression related behavior in transgenic S100B over-expressing mice (TG), treated chronically with fluoxetine

References:

Figure 1: (A) Performance of untreated WT and TG mice in the novel object recognition task. (B) In the sucrose preference test, TG show a higher preference for sucrose compared to WT.  

Figure 2: (A) TG show higher behavioral response to acute fluoxetine, in the tail-suspension test. (B) Behavioral response to chronic fluoxetine treatment in the novelty-induced hypopagia test.

Figure 3: Markers for (A) cell proliferation, (B) ongoing neurogenesis and (C) cell survival – in immuno-labeled dentate gyrus from WT and TG mice chronically treated with vehicle or fluoxetine