

## MPSIIIA Mouse Model

MPS IIIA mice (JAX#003780) contain a spontaneous *Sgsh* mutation, resulting in an almost complete loss of N-sulfoglucosamine sulfohydrolase activity. Mice show typical pathological features of the Sanfilippo syndrome A:

- Cognitive deficits
- Social behavior deficits
- Neuroinflammation
- Lysosomal pathology

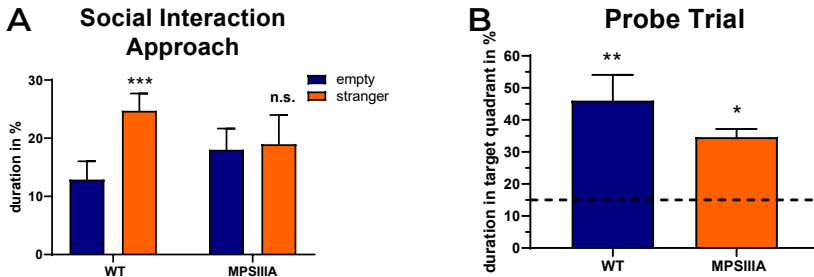


Figure 1: Behavioral analyses of MPS IIIA mice compared to wildtype (WT) littermates in the Three Chamber social test and Barnes maze test. A: social approach in the social interaction test and (B) time animals spent in the target quadrant during the probe trial of the Barnes maze test at the age of 30 weeks. A: Two-Way ANOVA with Bonferroni's *post hoc* test. B: E: One Sample t-test; significances label differences compared to 25% (dotted line); \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.0001$ .

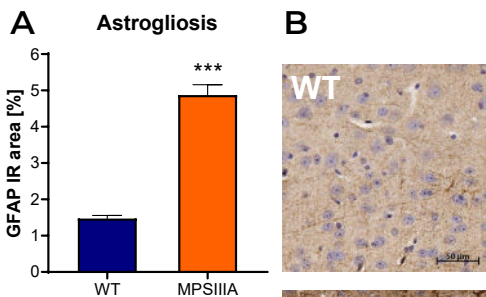


Figure 2: Histological analysis of MPSIIIA mice compared to WT littermates for neuroinflammation in the cortex. A: Immunoreactive area (IR) in percent of GFAP labeling. Mean±SEM; unpaired t-test. \*\*\* $p < 0.001$ .

B: Representative images of GFAP labeling in the cortex of MPSIIIA and WT animals at the age of 30 weeks.

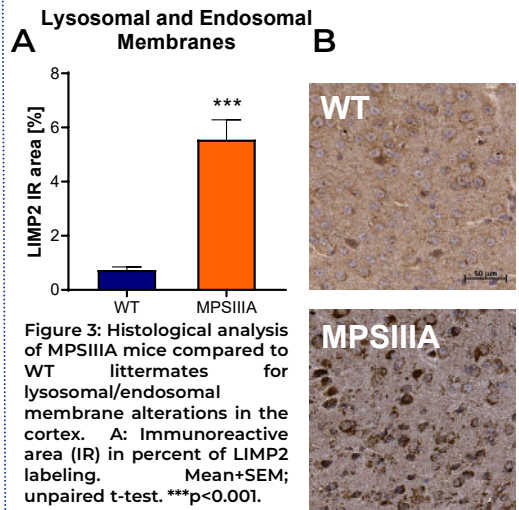


Figure 3: Histological analysis of MPSIIIA mice compared to WT littermates for lysosomal/endosomal membrane alterations in the cortex. A: Immunoreactive area (IR) in percent of LIMP2 labeling. Mean±SEM; unpaired t-test. \*\*\* $p < 0.001$ .

B: Representative images of LIMP2 labeling in the cortex of MPSIIIA and WT animals at the age of 30 weeks.