Supplemental Material

Targeting Na,K-ATPase-Src signaling to normalize cerebral blood flow in a murine model of familial hemiplegic migraine

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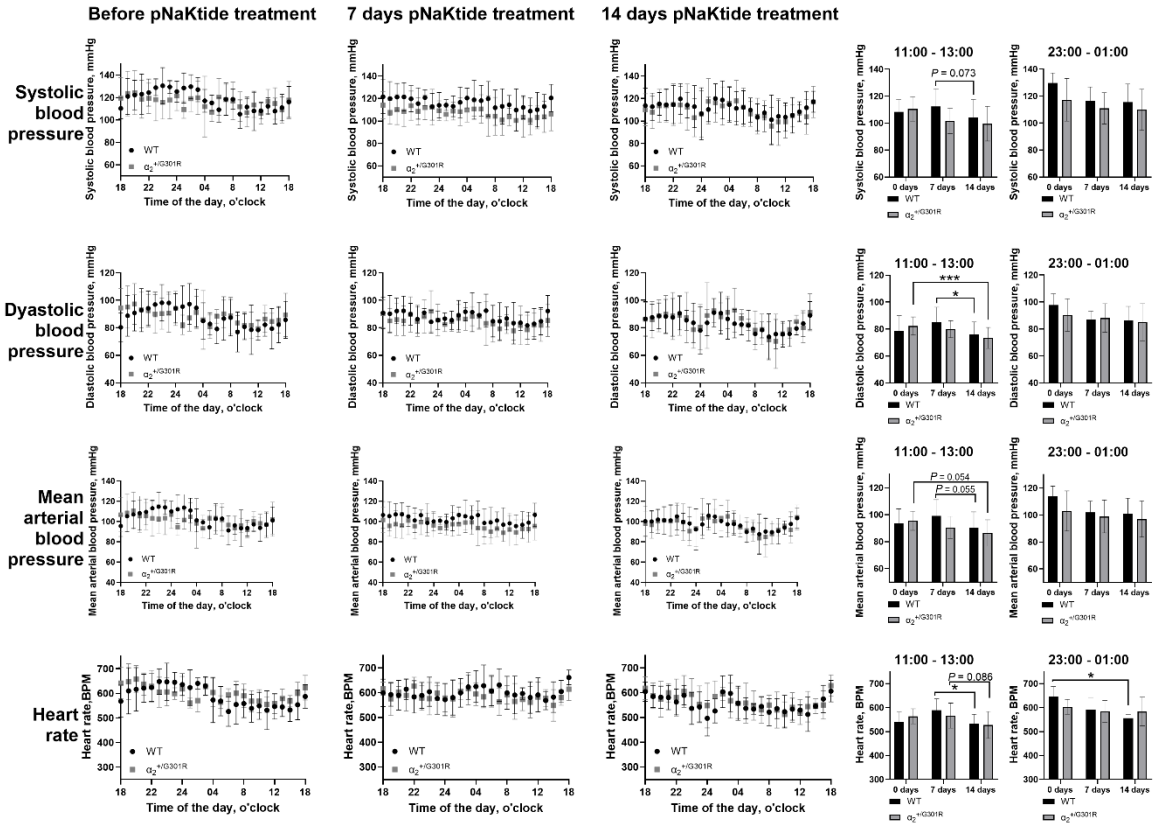
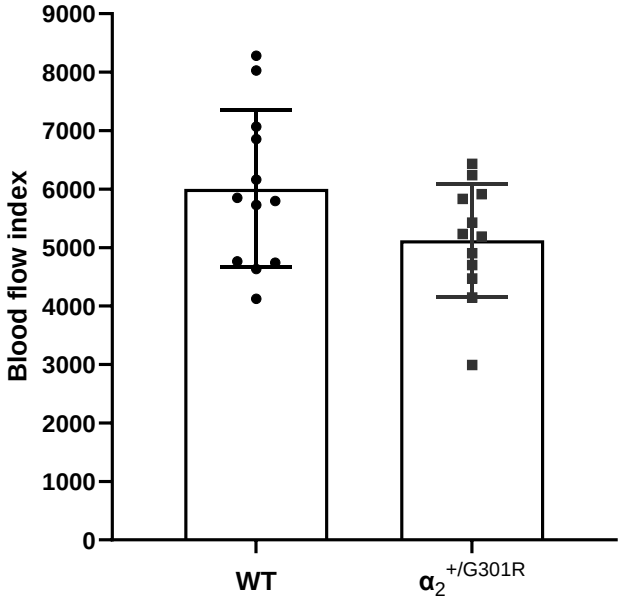
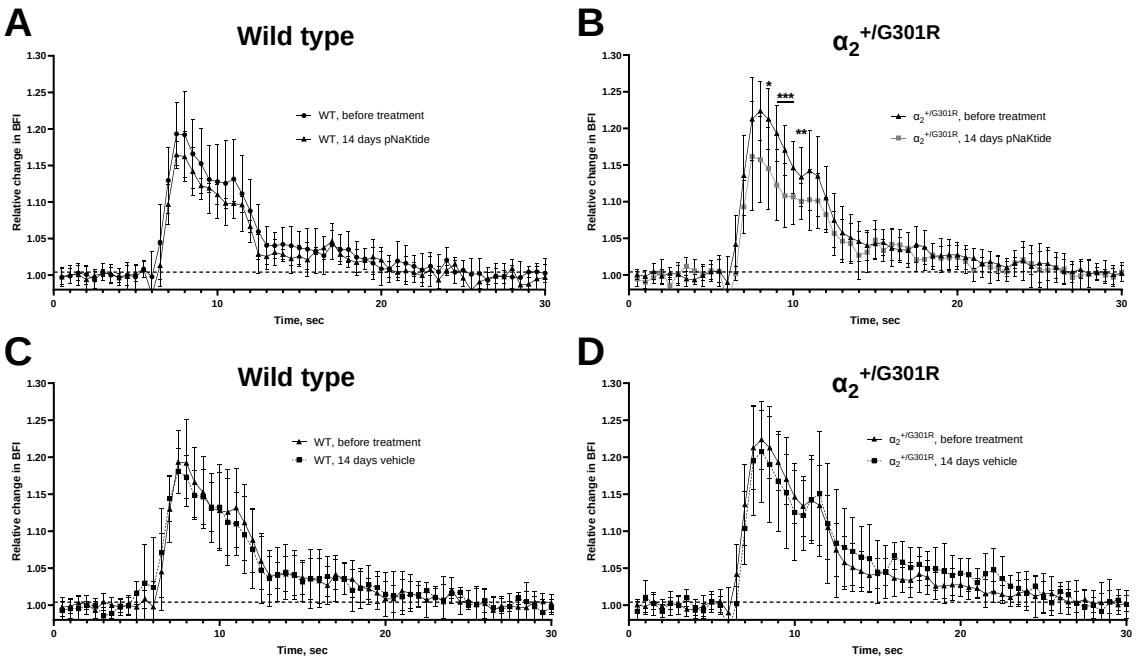
Supplementary Video. Representative image data of relative changes in blood flow in the sensory cortex in response to whisker stimulation in an awake $\alpha_2^{+/G301R}$ mouse at baseline before the pNaKtide treatment. The red frame indicates periods when whisker stimulations were performed. The dotted region of interest (ROI) was automatically placed in the area where blood flow changed the most on average during the 10 repeated whisker stimulations. Changes in blood flow within the ROI are displayed, with the X- and Y- axes as time and = relative changes in blood flow. Video speed is increased by 10x.



Supplementary Figure 1. No difference in cardiovascular parameters between wild type and $\alpha_2^{+/G301R}$ mice prior and after 14 days of pNaKtide treatment. The 24-hours telemetry recordings of systolic, diastolic and mean arterial blood pressure and heart rate before treatment, 7 and 14 days after pNaKtide treatment as indicated. When diurnal and nocturnal parameters averaged over 3 hours were compared, minor but not significant blood pressure and heart rate reduction was seen after pNaKtide treatment (no difference between wild type and $\alpha_2^{+/G301R}$ mice; $n = 6$ each). WT, wild type. Groups were compared using two-way ANOVA with Bonferroni's multiple comparisons test where *, **, *** indicate $P < 0.05$, 0.01, 0.001.



Supplementary Figure 2. Baseline blood flow index in the sensory cortex under resting conditions. The blood flow index was assessed using laser speckle contrast imaging in the automatically placed ROI where neurovascular coupling responses were later measured. There was no significant difference in resting parenchymal blood flow between the two genotypes. Groups were compared using t-test, $n = 12$.



Supplementary Figure 3. Neurovascular coupling response before and after vehicle or pNaKtide. Neurovascular coupling was unaffected in wild type (WT) mice by 14 days of pNaKtide treatment (A). Amplified neurovascular coupling responses in $\alpha_2^{+/G301R}$ mice prior to the treatment were normalized after the pNaKtide (B). Vehicle treatment did not change the neurovascular coupling response in WT (C) or $\alpha_2^{+/G301R}$ mice (D). Data, mean ± SD. Responses in each genotype were compared before and after treatment using two-way ANOVA with correction for multiple comparisons using the two-stage step-up method. n = 5; *,**,*** indicate $P < 0.05, 0.01, 0.001$.