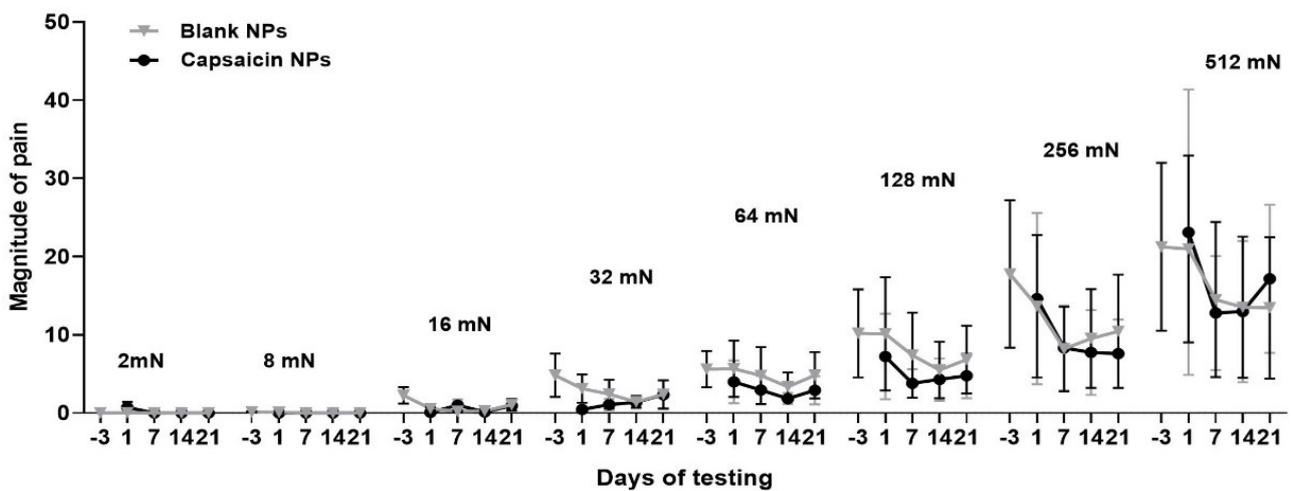




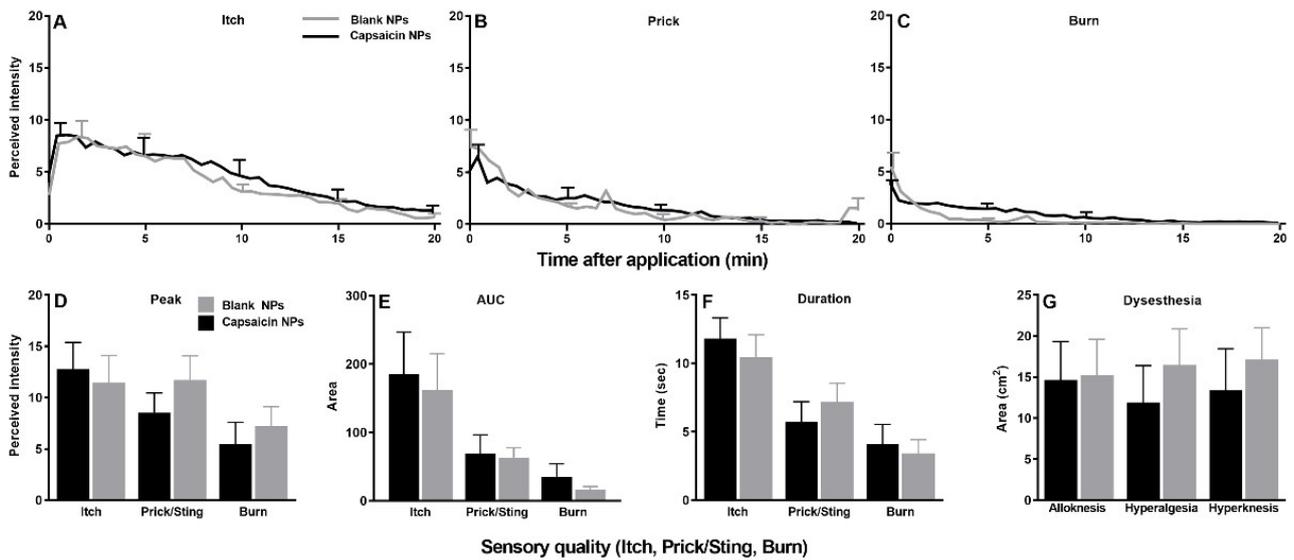
Supplementary figures

Topical Capsaicin in Poly(lactic-co-glycolic)acid (PLGA) Nanoparticles Decreases Acute Itch and Heat Pain

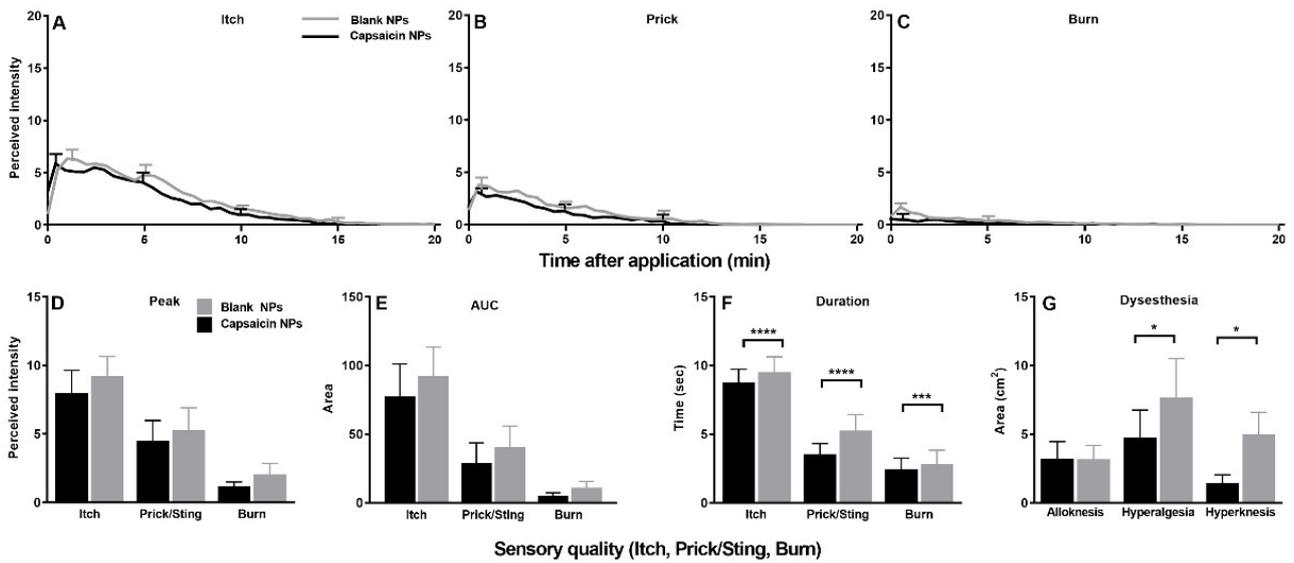
Nathalie M. Malewicz ^{1,2,*}, Zahra Rattray ³, Sebastian Oeck ^{4,5}, Sebastian Jung ^{1,6}, Vicente Escamilla-Rivera ^{1,7}, Zeming Chen ⁸, Xiangjun Tang ⁸, Jiangbing Zhou ⁸ and Robert H. LaMotte ^{1,*}



Supplementary Figure S1: Magnitude ratings of pain evoked by mechanical stimuli obtained at sites of blank and capsaicin NPs 4 days before and on each designated day after removal of the NPs. The mechanical stimuli delivered indentation forces of 2 to 512 mN. Mixed effect model 2 within subject treatments (capsaicin vs. placebo treatment) \times 4 repeated timepoints (0, 7, 14, 21 days) with Bonferroni correction. Means with SEMs for capsaicin- and blank NPs are black and gray, respectively ($n = 21$). * $p < 0.05$ and ** $p < 0.01$ for blank vs. NPs comparison.



Supplementary Figure S2. Effects of capsaicin NP pretreatment on sensations and dysesthesias evoked by injection of histamine. (A-C) Time course of perceived intensities of itch, pricking/stinging, and burning. Same format as Figure 7 (D) Peak magnitude (Peak) of each sensory quality. (E) Area under the rating curve (AUC). (F) Duration of response. (G) Area of each type of dysesthesia: alloknesis, hyperalgesia and hyperknesis. $n = 21$, (A-C) repeated measures two-way ANOVA 2 repeated treatment groups (capsaicin vs. placebo treatment) \times 40 repeated timepoints (0 - 20 min) with Bonferroni correction, (D-G) Wilcoxon test. Data are means with SEMs. * $p < 0.05$, ** $p < 0.01$.



Supplementary Figure S3. Effects of capsaicin NP pretreatment on sensations and dysesthesias evoked by histamine spicules. (A–C) Time course of perceived intensities of itch, pricking/stinging, and burning. Same format as Figure 7. (D) Peak magnitude (Peak) of each sensory quality. (E) Area under the rating curve (AUC). (F) Duration of response. (G) Area of each type of dysesthesia: alloknesis, hyperalgesia and hyperknesis. $n = 21$, (A–C) repeated measures two-way ANOVA 2 repeated treatment groups (capsaicin vs. placebo treatment) \times 40 repeated timepoints (0–20 min) with Bonferroni correction, (D–G) Wilcoxon test. Data are means with SEMs. * $p < 0.05$, ** $p < 0.01$.