ADVANCED FUNCTIONAL MATERIALS

# Supporting Information

for *Adv. Funct. Mater.,* DOI: 10.1002/adfm.202100722

## Biomimetic Nanoparticles as a Theranostic Tool for Traumatic Brain Injury

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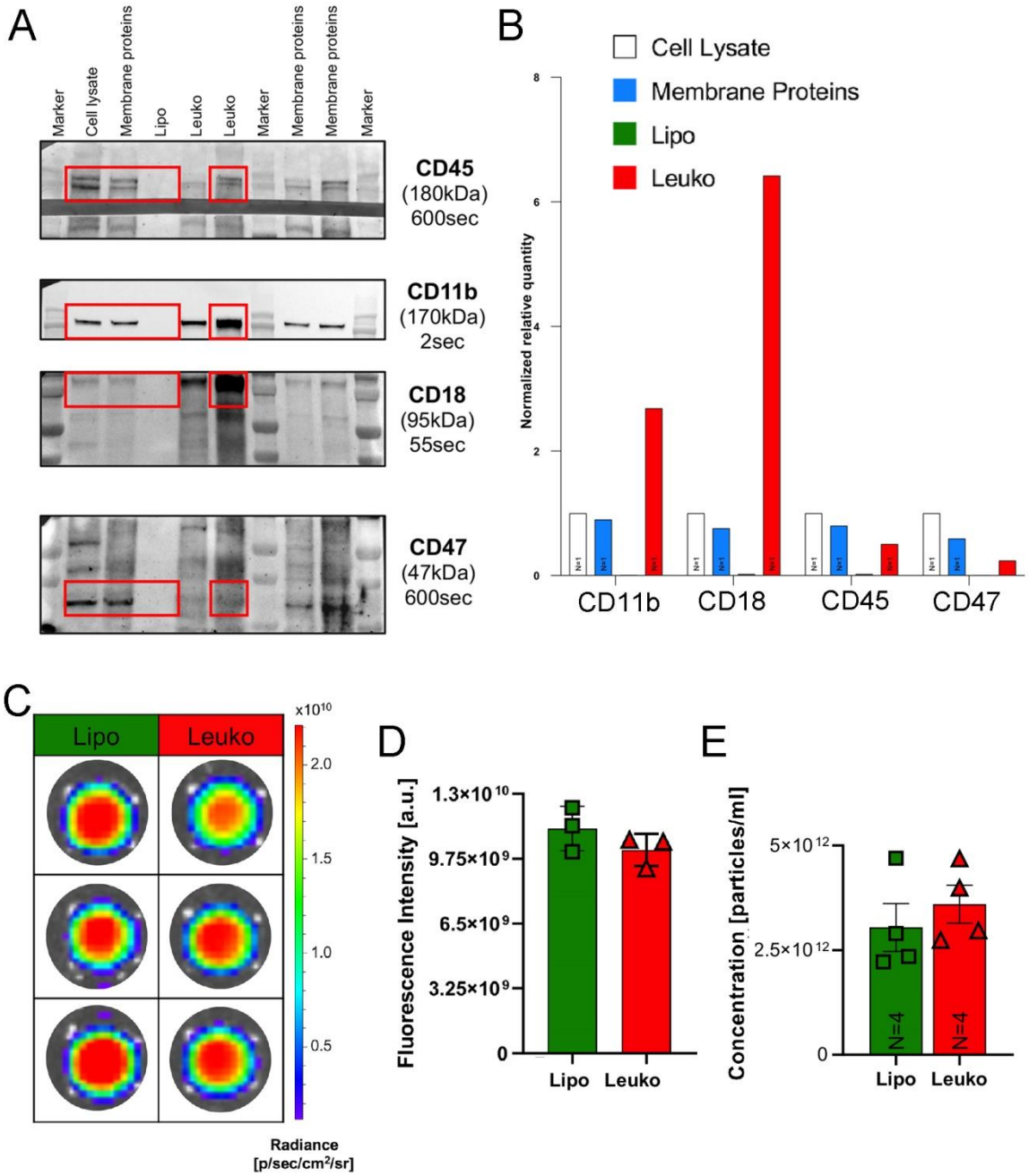
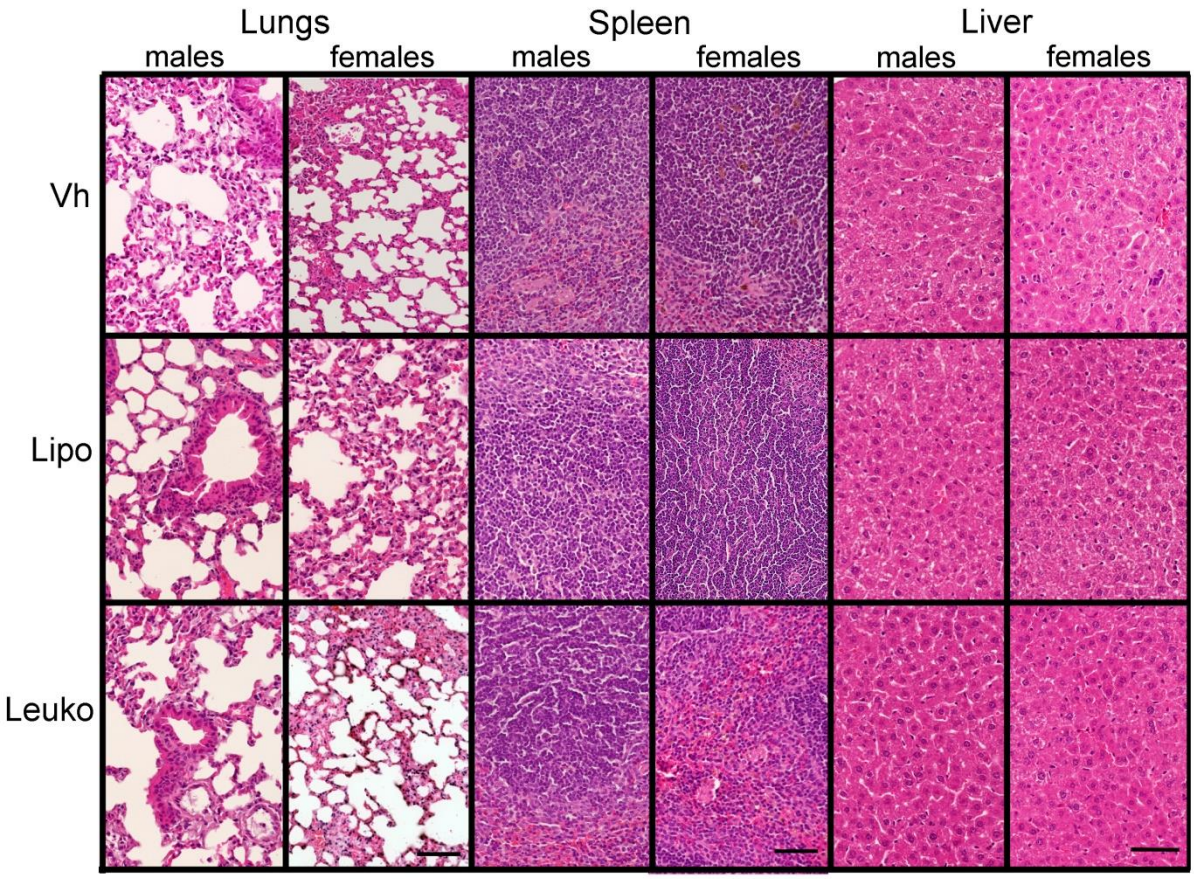
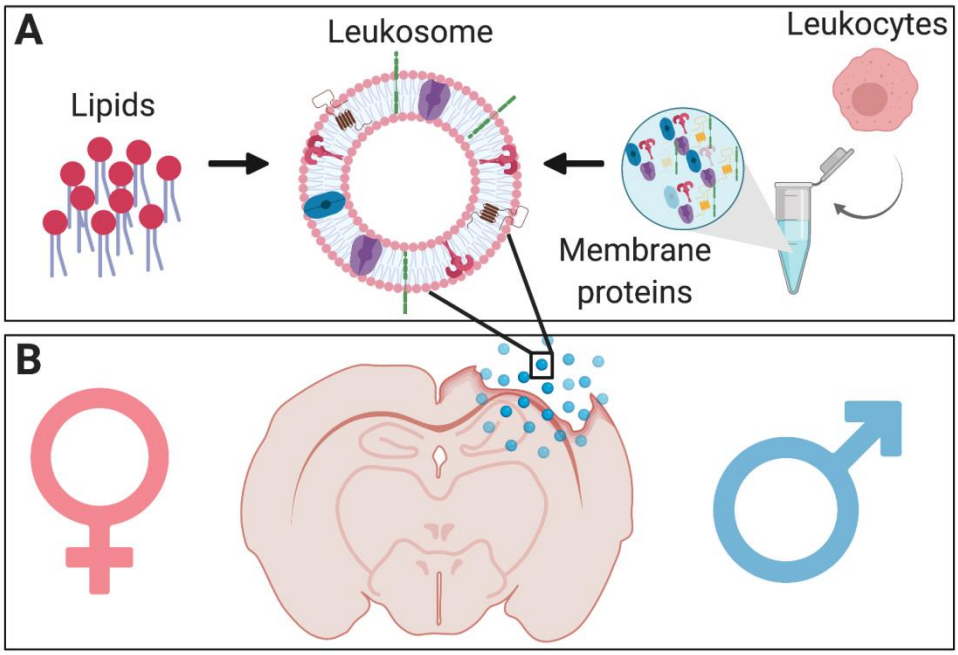



**Supplemental Figure 1. Nanoparticles (NPs) biomimetic markers and fluorescence intensity. (A)** Four leukocyte membrane protein markers (CD11b, CD18, CD45, and CD47) were characterized and quantified following the NPs fabrication and filtration. The protein band reported in the main manuscript is distinguished via red rectangles. **(B)** Western blot quantification indicates CD11b, CD18, CD45, and CD47 in Leuko but not in Lipo. **(C-D)** NPs Cy5.5-DSPE labeled were measured by triplicate using the fluorescence intensity of each NPs using IVIS. Lipo fluorescence was 1.1-fold higher than that of Leuko. For this

reason, all measurements of Leuko biodistribution *in vivo* were multiplied by 1.1. **(E)** No concentration differences were assessed when comparing NPs groups using NanoSight NS300. NPs concentration [particles/ml] was evaluated by using NanoSight NS300 and setting the following parameters: infusion rate = 100, temperature = 25 °C, screen gain = 1.0 and camera level = 14. Leuko averaged measured concentration was 3.59 x $10^{12}$ particles/ml compared to Lipo averaged measured concentration of 3.04 x $10^{12}$ particles/ml. Unpaired t-test was used to determine statistical probabilities. No significant differences were assessed between the two groups (n=4).




**Supplemental Figure 2. NPs toxicity assessment in filtering organs.** Tissue sections of liver, spleen, lung, and kidney underwent Hematoxylin and Eosin (H&E) staining 24 h post-TBI. No obvious tissue differences were observed when comparing the NPs administrated groups to the Vh treated groups. Scale bar = 50µm.




**Supplemental Figure 3**. Video: Leukosomes are localized into the vasculature wall and engulfed by the surrounding brain tissue 24 h post-TBI.