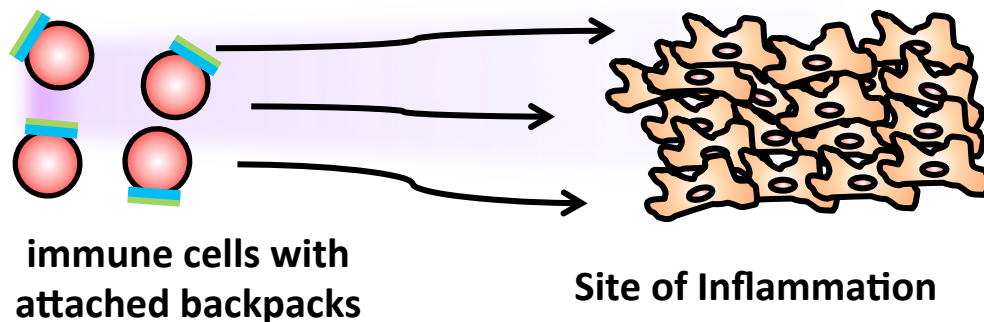
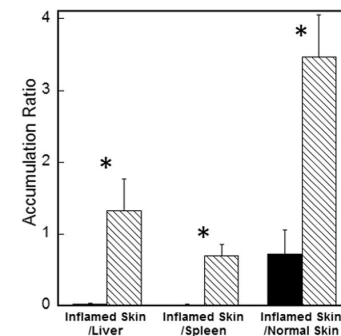


# Synthetic Backpacks Attached to Immune Cells Selectively Target Sites of Inflammation in the Skin and Lungs, R. Cohen and M. Rubner (IRG II)

In collaboration with Professor Mitragotri at UCSB, MIT MRSEC researchers have moved one step closer to using a body's natural immune system to ferry drug carrying backpacks to disease sites. In this work, synthetic backpacks were attached to monocytes and injected into a mouse. The backpack carrying monocytes were able to successfully target and accumulate in inflamed tissues, demonstrating that their native function was not impaired by the synthetic payload. The ability to selectively target disease sites in a body while leaving healthy cells unharmed is an important goal of modern drug delivery science. These promising results further support the idea that cellular backpacks can be used to help the immune system fight diseases such as cancer.



Figures: Top. Cartoon illustrating the targeting of backpack carrying monocytes to a site of inflammation. Right. Compared to free backpacks (black), backpacks attached to monocytes (lined bars) accumulate 9-fold higher in inflamed skin, 6h after injection into a mouse.



A.C. Anselmo, et al., Monocyte-mediated delivery of polymeric backpacks to inflamed tissues: a generalized strategy to deliver drugs to treat inflammation, *J. Control. Release* 199, p 29-36 (2015).