



Supplementary Figure 1: TAK1 is identified in Rap80- UIM pull down in response to cartilage injury. Cartilage was dissected and either snap frozen (0 min) or cultured for the indicated time points. K63-ubiquitin linked proteins were pulled down from cartilage lysates by Rap80 UIM as described in Methods and proteins bound to the beads were western blotted with an anti- K-63 ubiquitin antibody and anti-TAK1 antibody. Lysates were western blotted for ph-JNK and ERK.