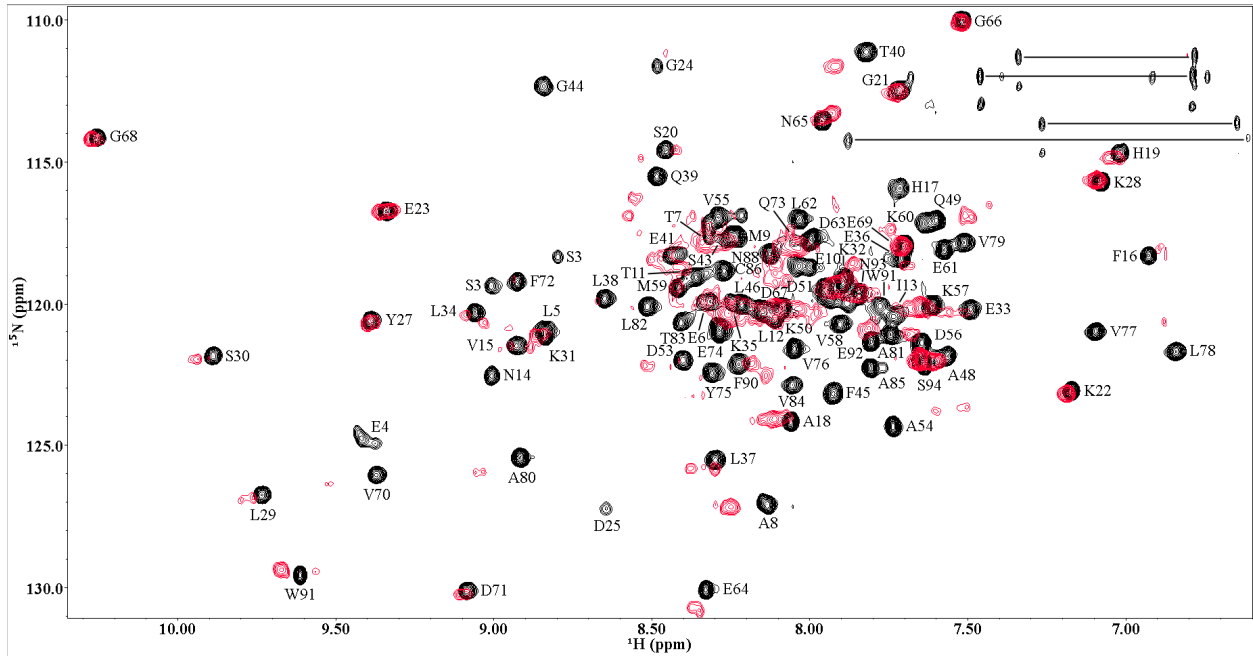
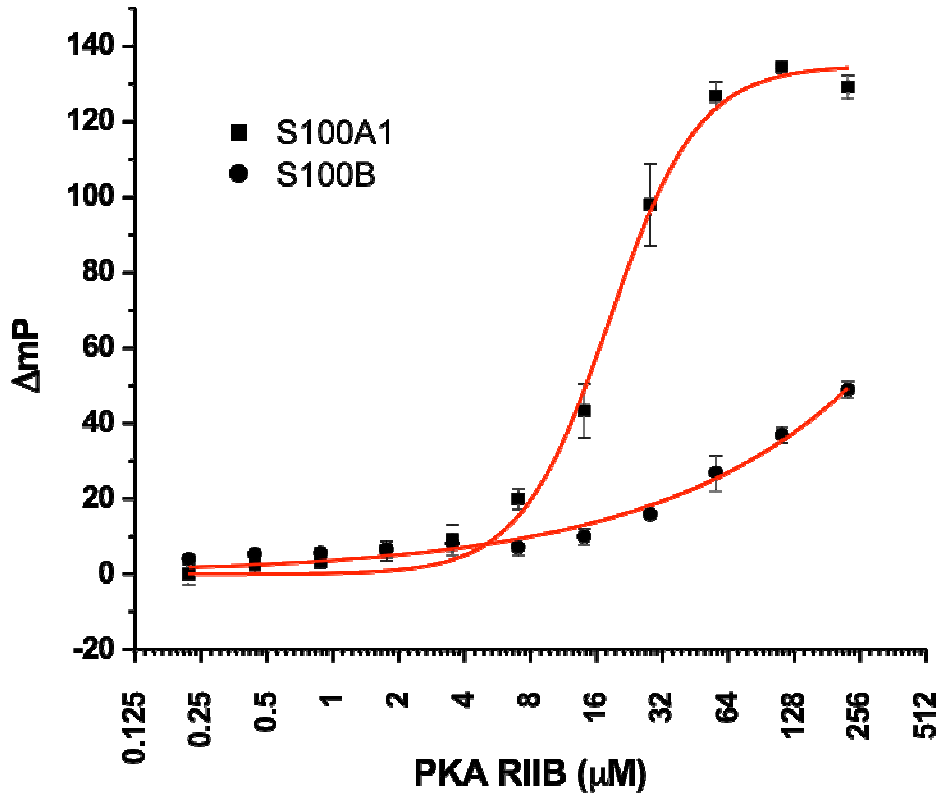


Supporting Information



**Figure S1.** TROSY-HSQC spectra of human  $Ca^{2+}$ -S100A1 before (black) and after (red) addition of unlabeled RII $\beta$  showing chemical shift perturbations as a result of binding.



**Figure S2.** Example FPCA binding curve of RII $\beta$  competing off the TAMRA-HDM4 peptide bound to S100A1 or S100B. The binding affinity for S100B-RII $\beta$  could not be determined due to its weak binding.