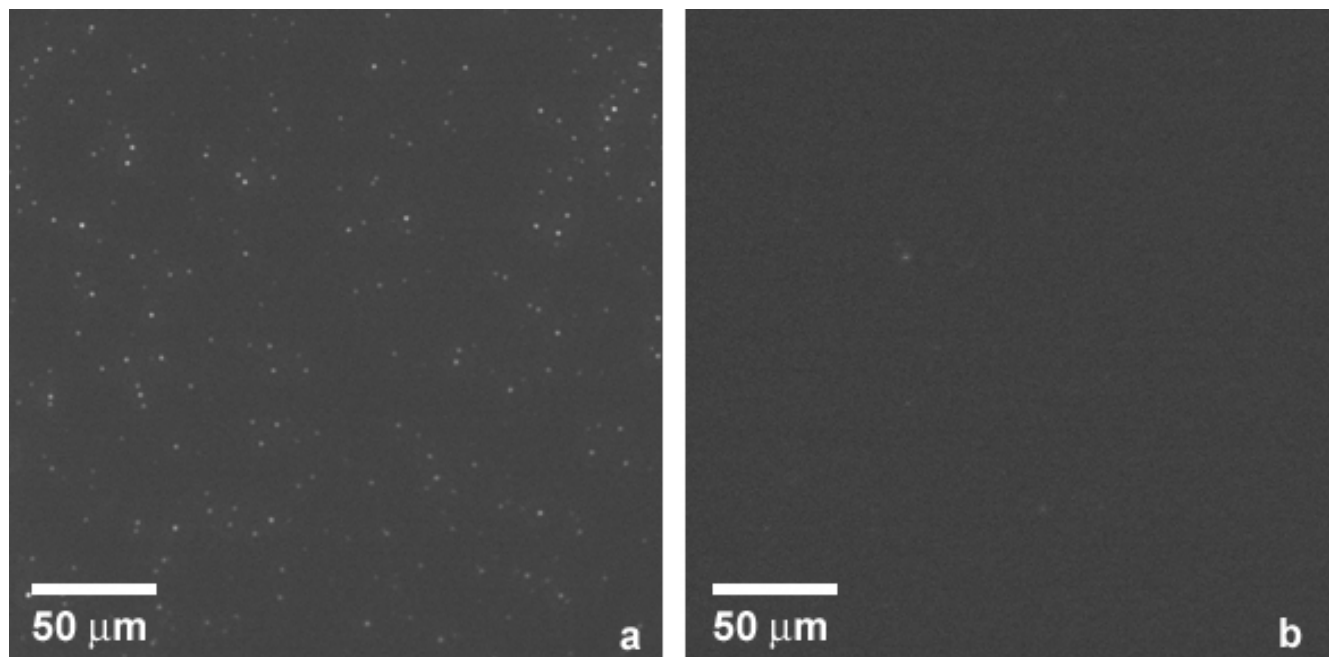


## SUPPLEMENTARY INFORMATION



**Figure S3.** Fluorescence images of neutravidin coated nanospheres bound to rehydrated membranes with compositions of 40-X:59:1:X TDM:DOPC:TR-DHPE:16:0 Biotinyl Cap PE, where the biotinylated lipid percentage  $X=1$  for **a** and  $X=0$  for **b**. The surface density of bound nanospheres in membranes with biotinylated lipids is 300 times greater than in control samples without biotinylated lipids indicating an absence of non-specific binding. The ability of the biotinylated lipids to bind nanospheres after de- and re-hydration confirms the preservation of membrane functionality.