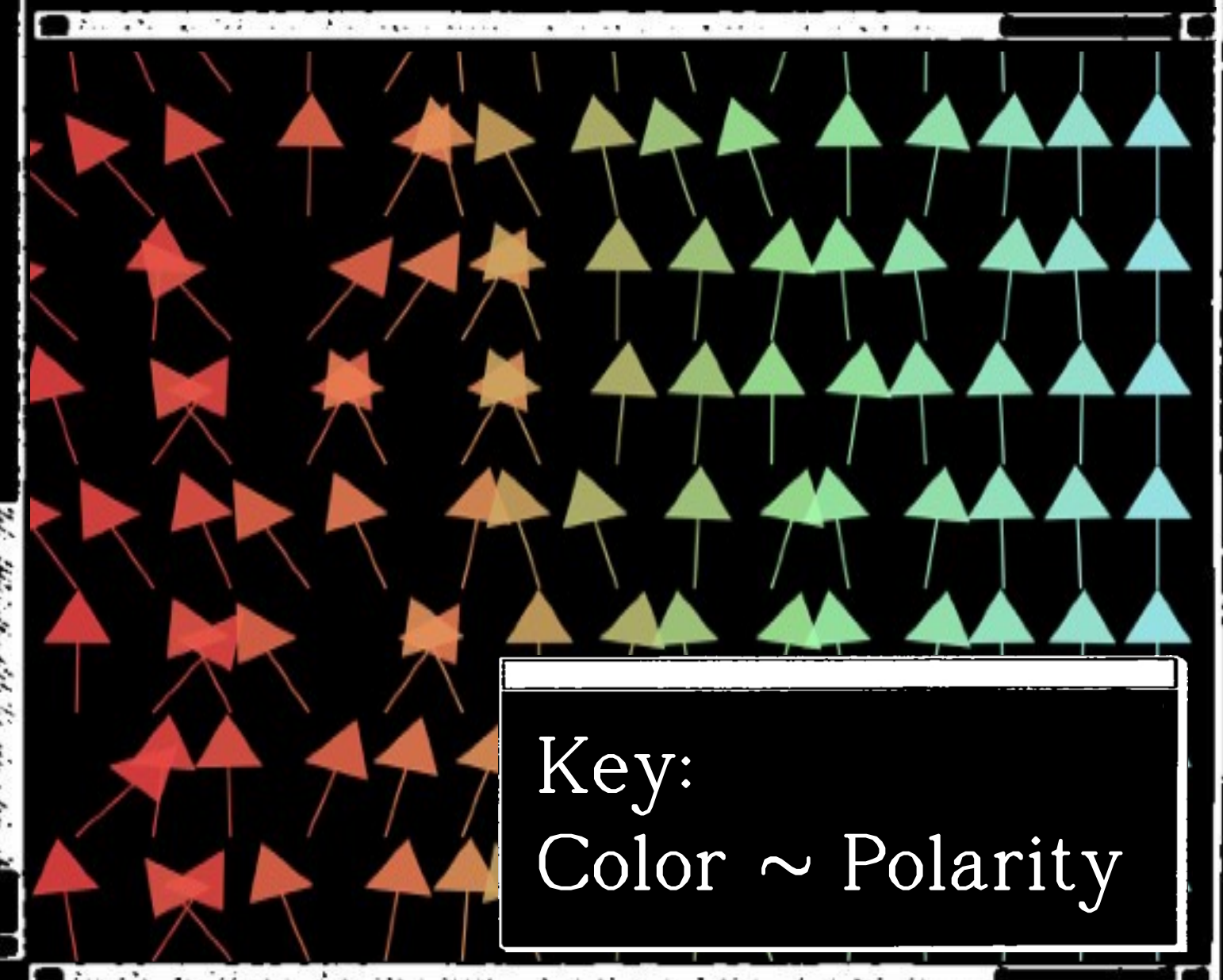
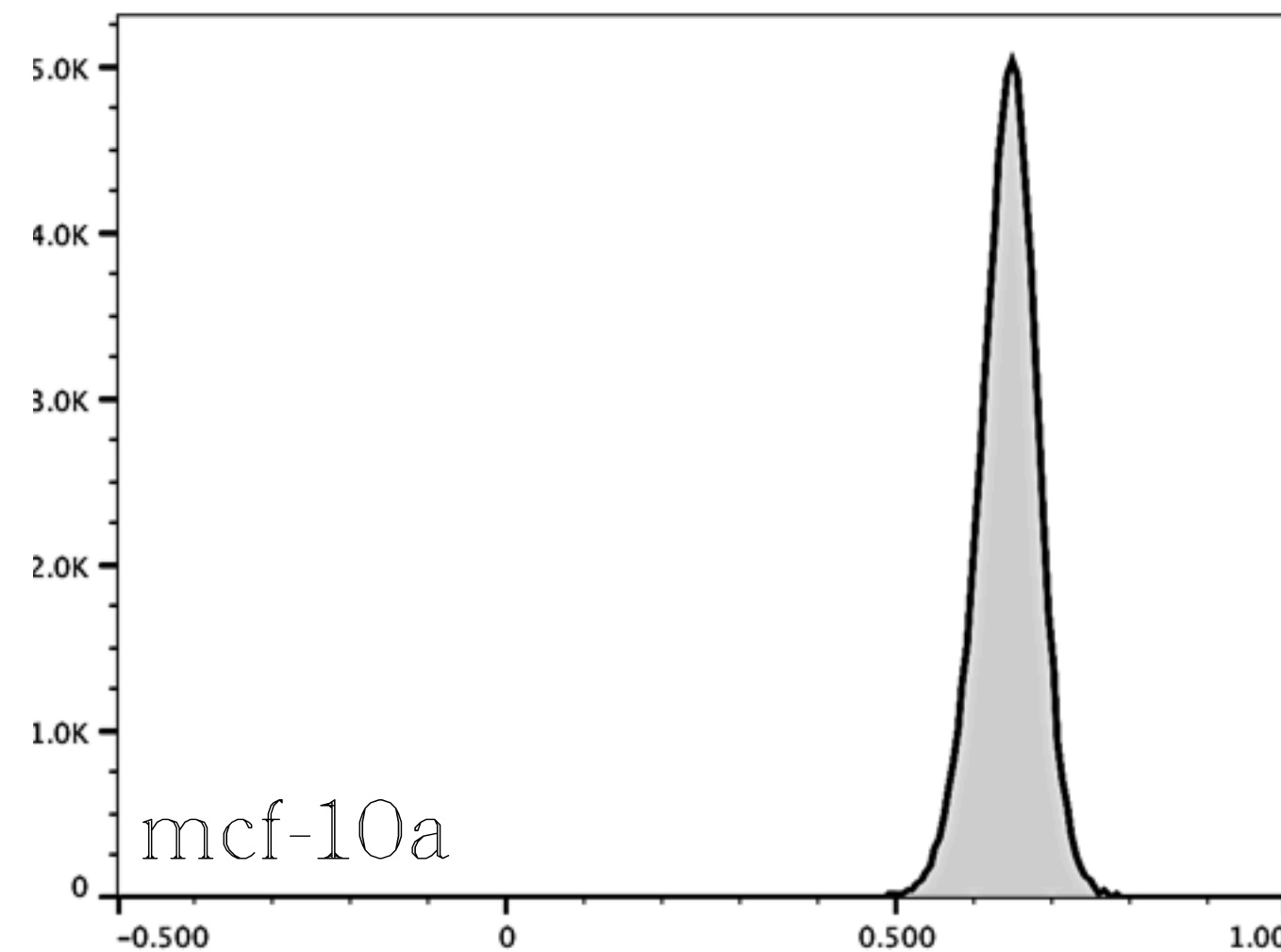


Breast cancer cells exhibit high water polarity heterogeneity.

Heterogeneity is observed in the uptake of the dye as well, by about an order of magnitude. This makes flow cytometry, rather than microscopy with a fixed exposure time, the ideal assay. Total dye uptake is increased as the dye shifts red, which is the opposite trend of quantum yield, which increases with blue-shift. This is consistent with Gilbert Ling's AIH, where water polarization partially excludes solutes from the cell. Below is an overlay of raw ACDAN fluorescence and phase contrast; ACDAN fluorescence is used to create the 'Generalized Polarization' function image on the left.

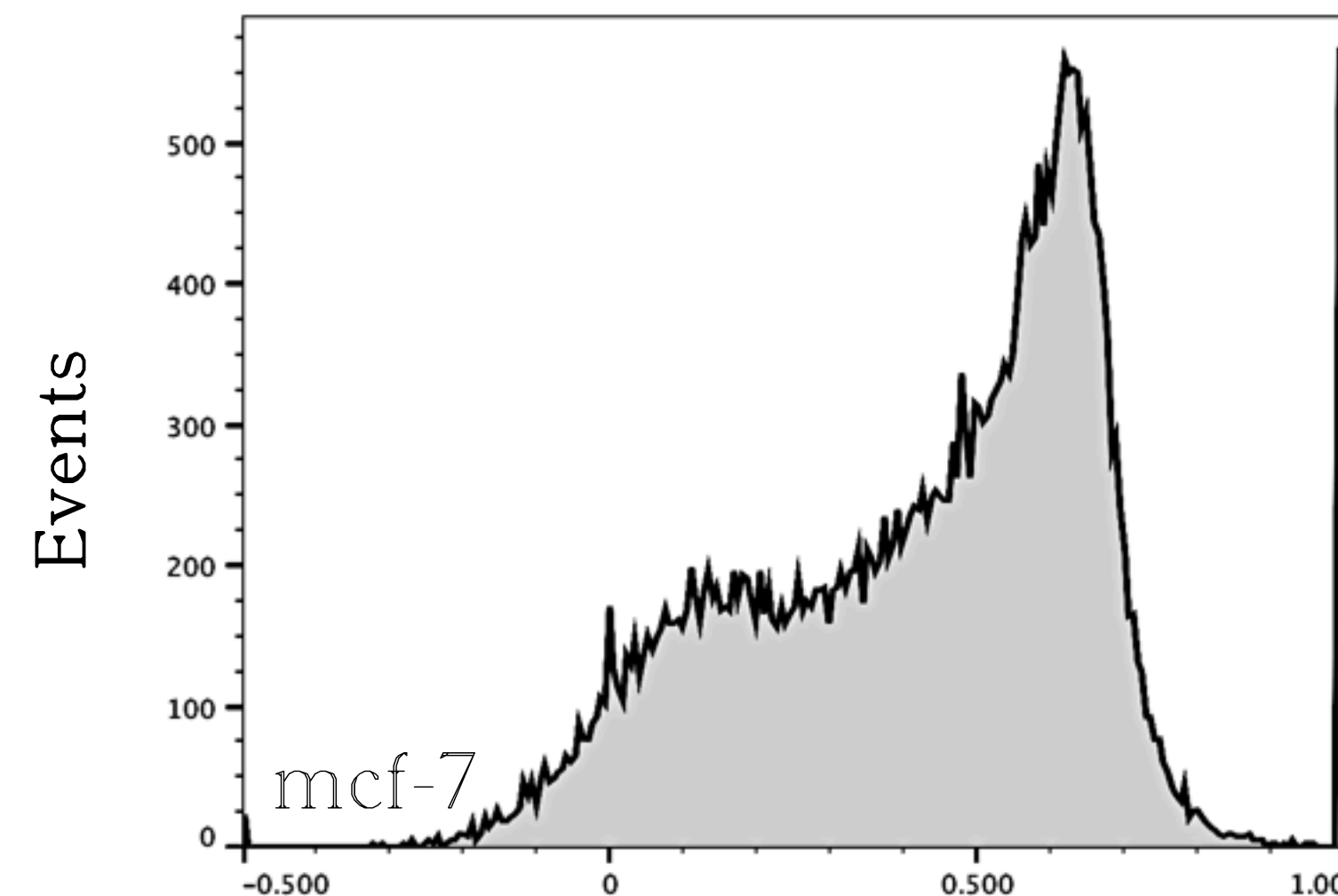


Breast healthy



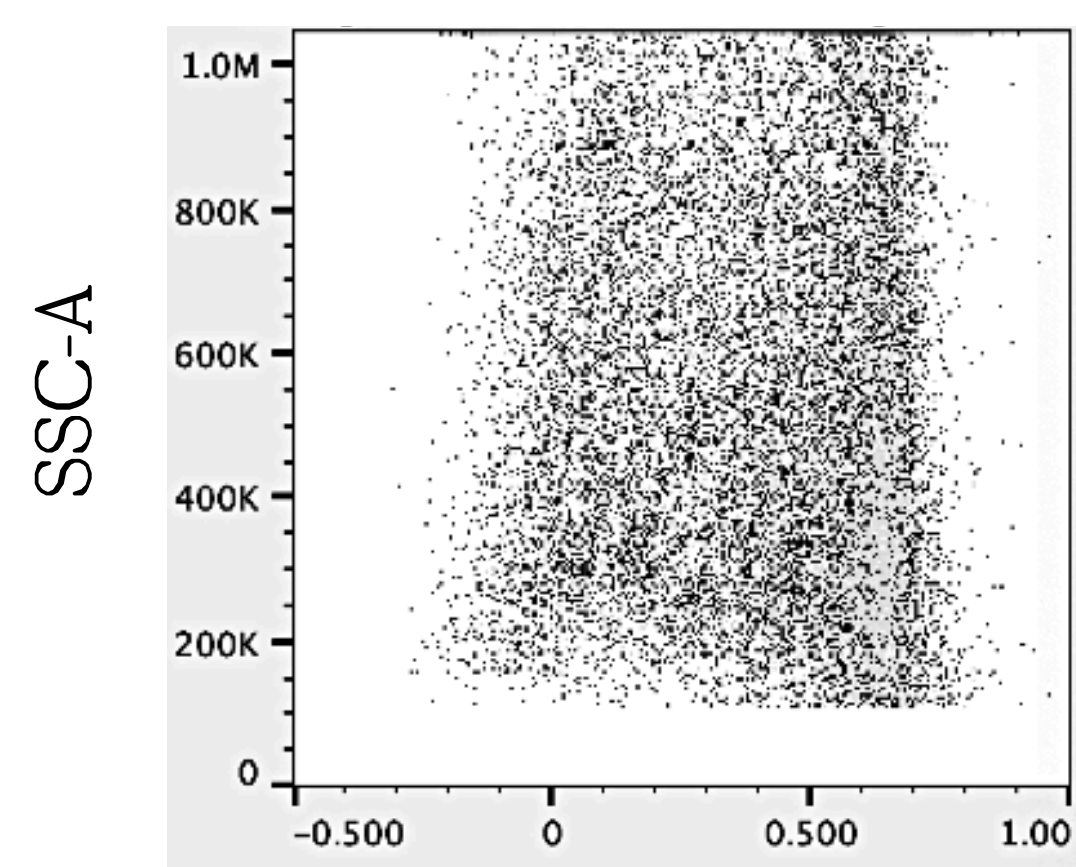
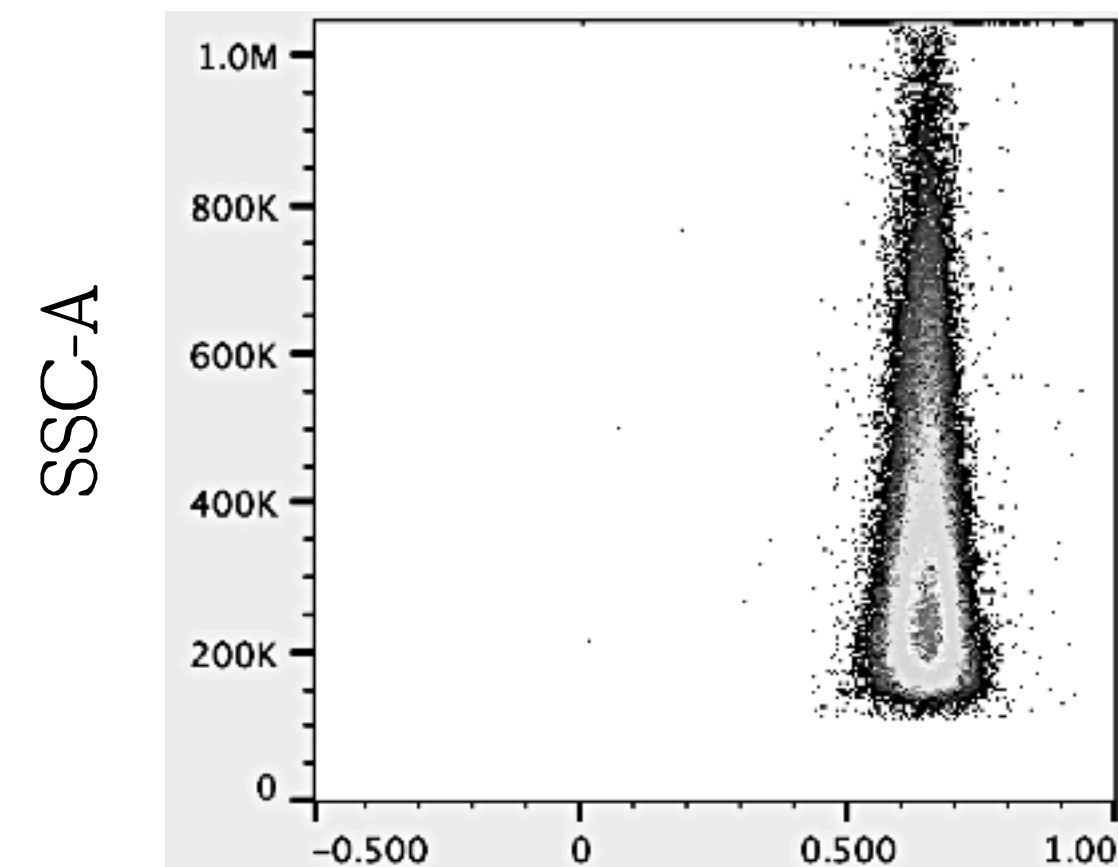
Water structure (ACDAN GP)

Breast cancer

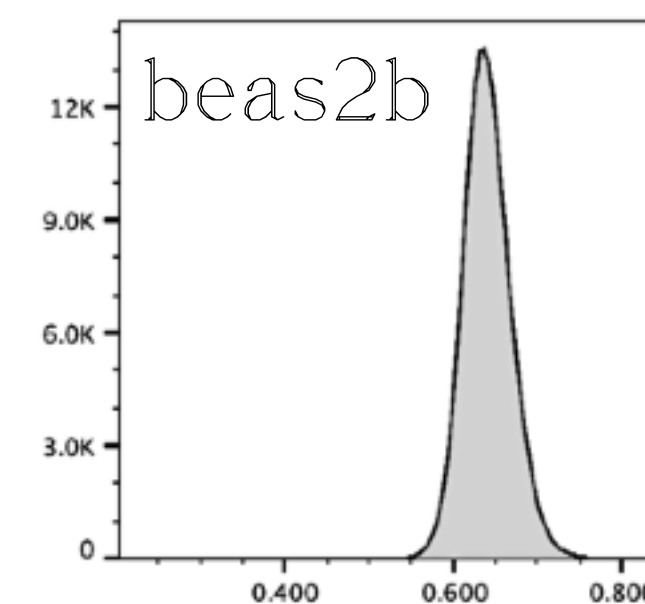


Water structure (ACDAN GP)

Cancer cells lose water structure across the population, though there are many cells that appear to have unchanged water structure. We have replicated this in lung cancer as well:



Lung healthy



Lung cancer

