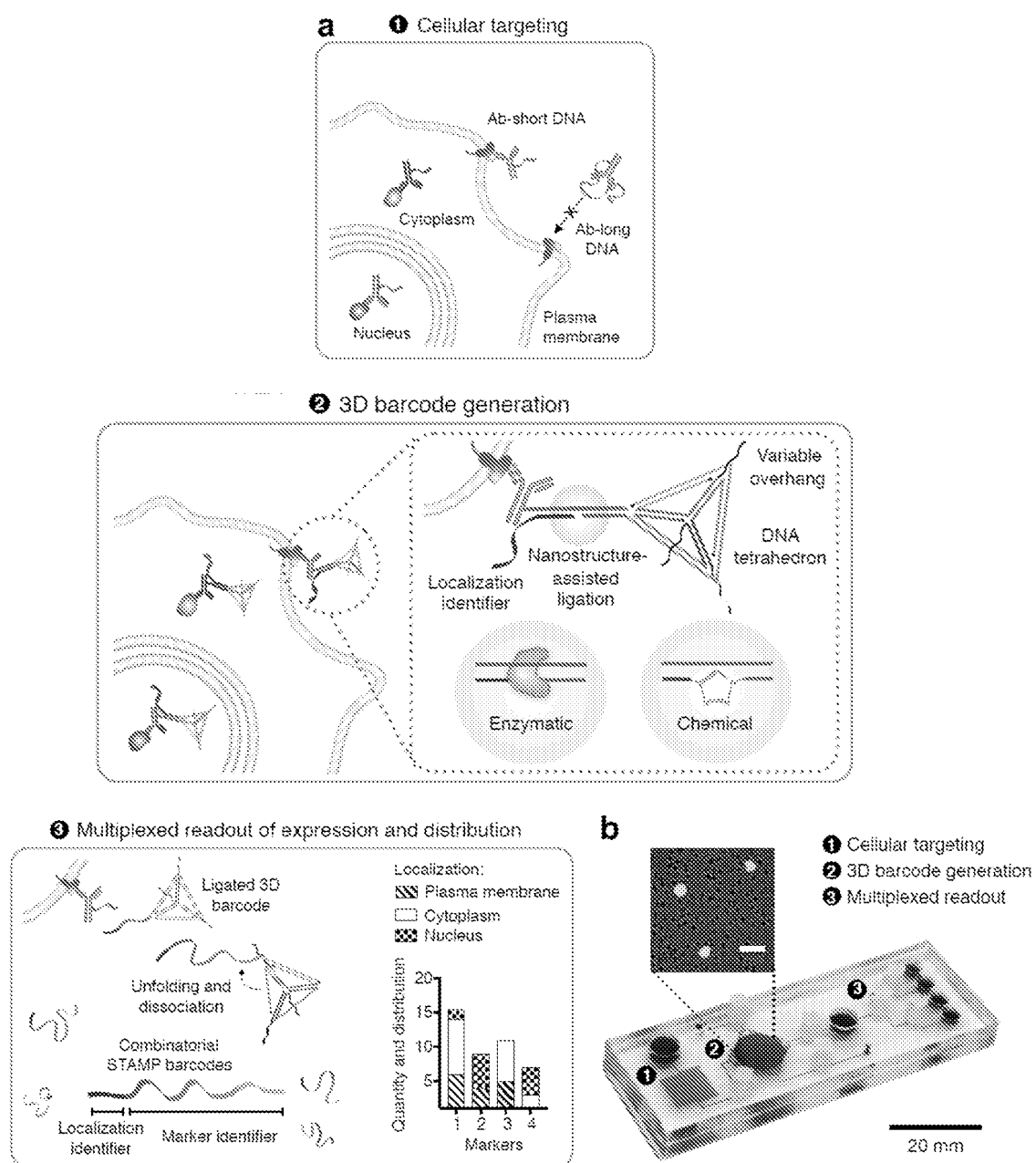
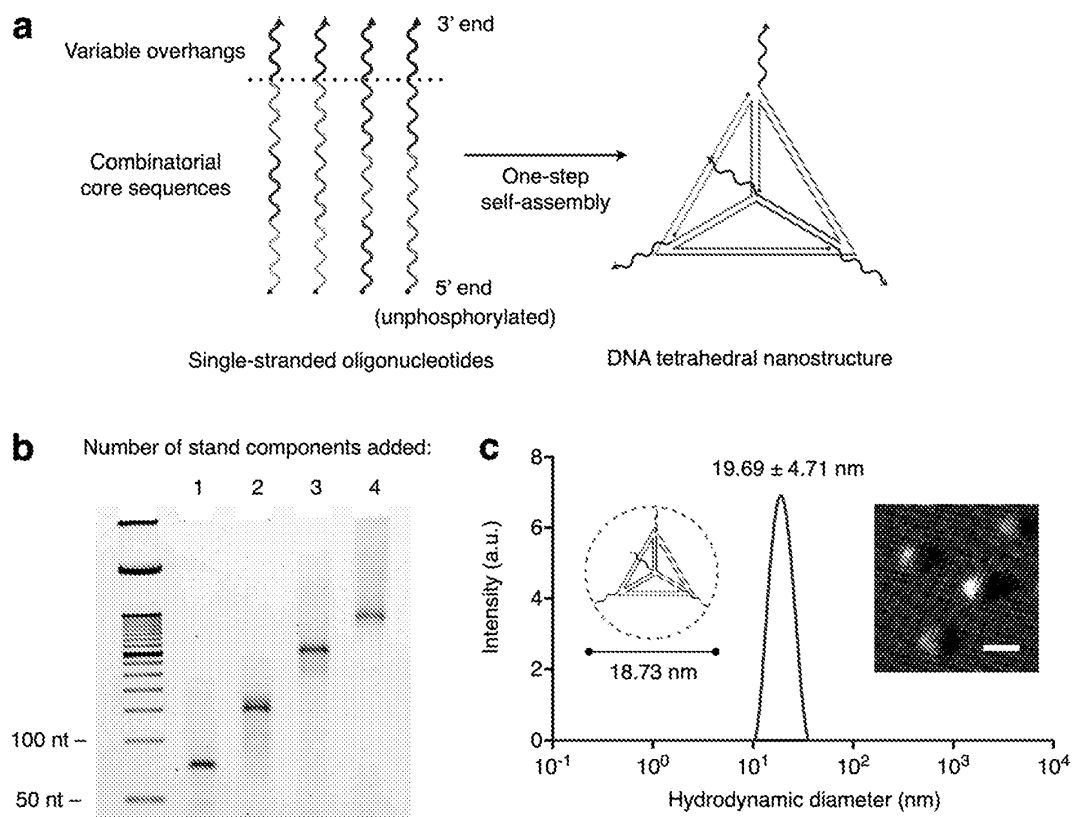
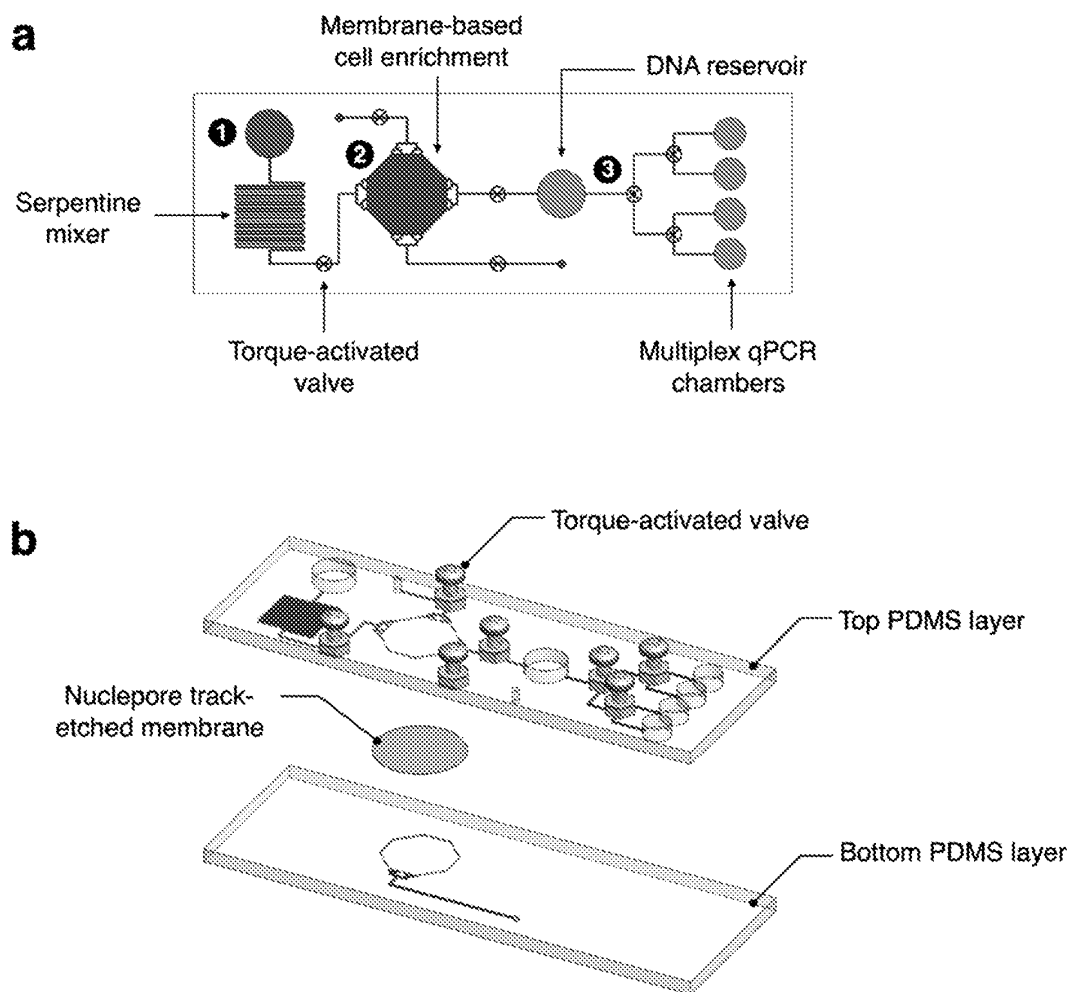


1/21

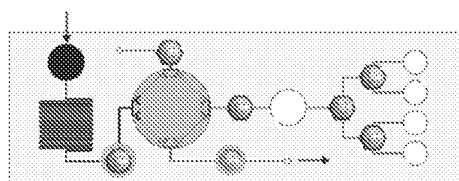
FIGURE 1



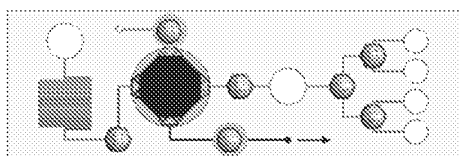
2/21
Figure 2

3/21
Figure 3

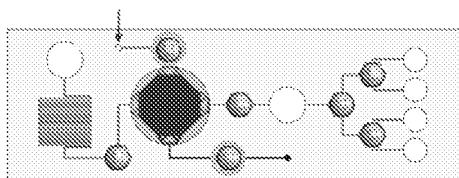
4/21

Figure 4**Step 1: Cellular targeting**

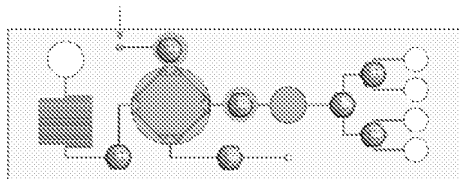
- Cells are mixed with the fixation and permeabilization buffer and introduced into the inlet with antibody-DNA conjugates.
- The serpentine channel enhances mixing to facilitate cellular targeting.

**Step 2: Cell capture**

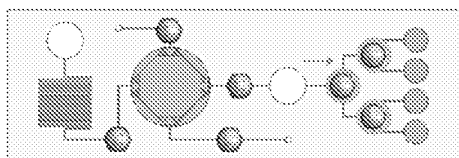
- Cells are captured on the porous membrane.
- Unbound antibodies are removed via the waste outlet.

**Step 3: 3D barcode generation**

- STAMP reagents (i.e., DNA tetrahedron probes, localization labels and ligases) are introduced to generate 3D barcodes *in situ* on cell-bound antibodies.
- Formed barcodes are liberated upon heat inactivation of ligase.

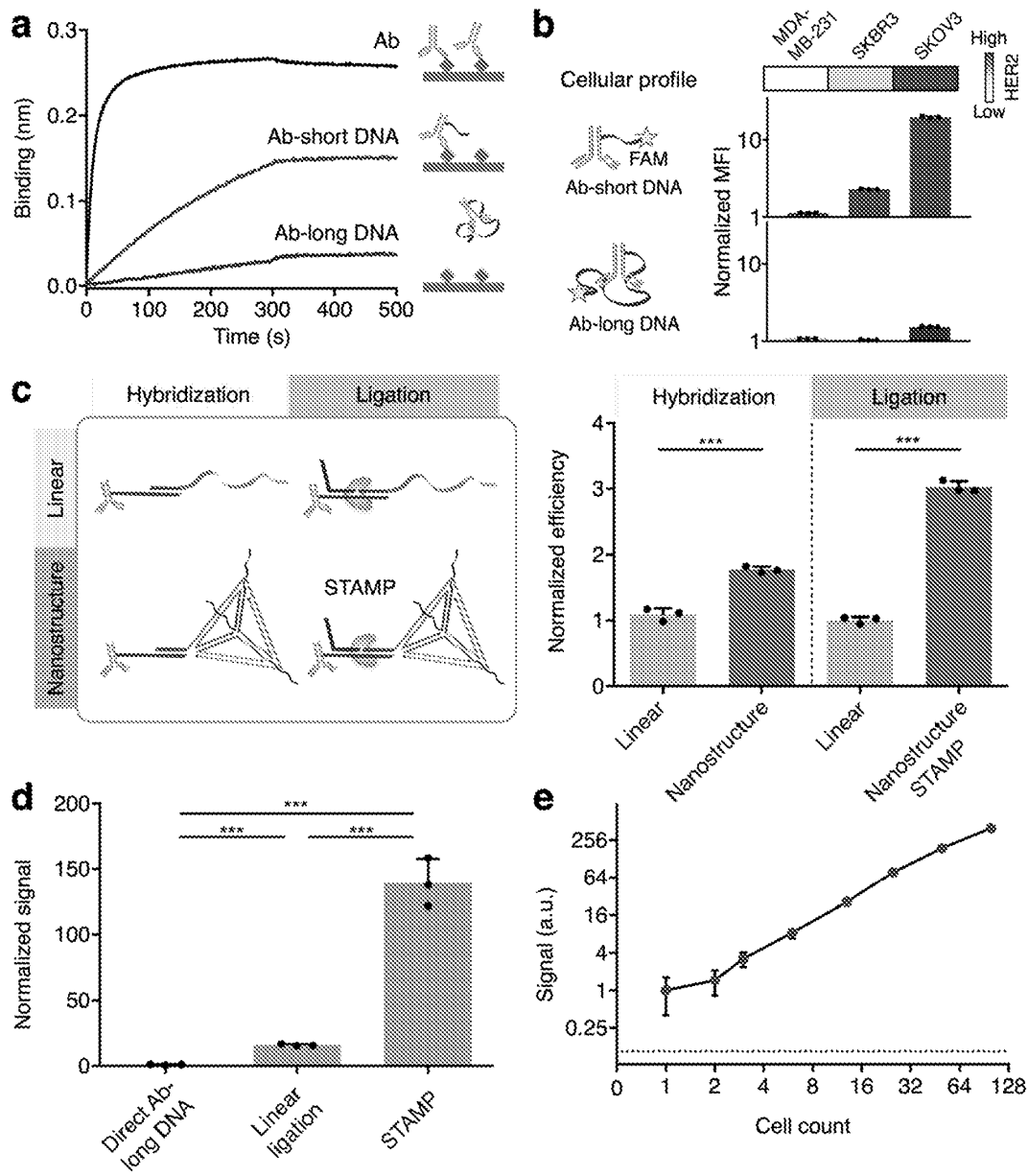
**Step 4: Barcode amplification**

- STAMP barcodes are introduced to the amplification chamber via positive pressure. The barcodes can be pre-amplified with appropriate primers for sequencing analysis or on-chip qPCR (see below).

**Step 5: On-chip qPCR**

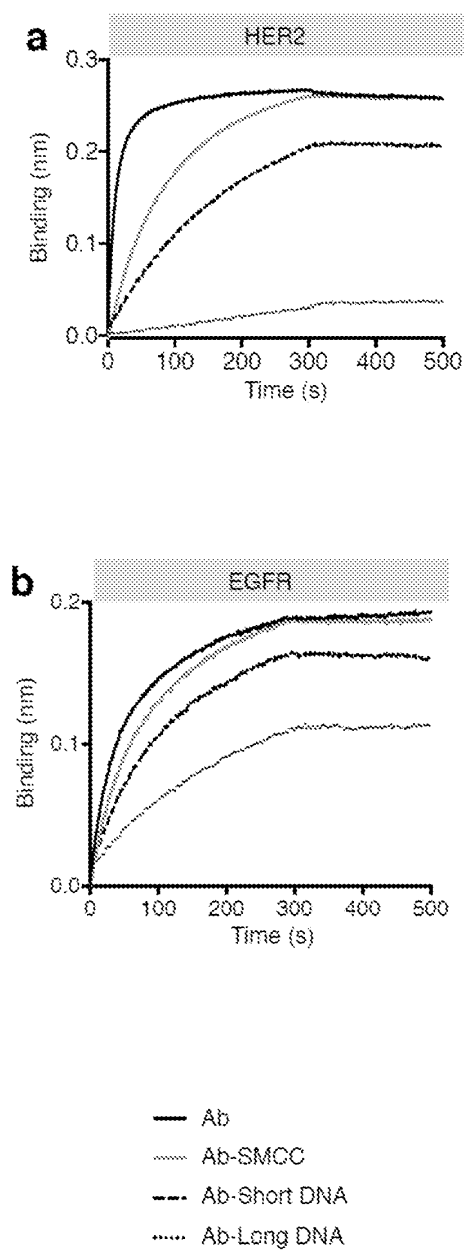
- STAMP barcodes are transferred to individual qPCR chambers, each preloaded with specific lyophilized primers for on-chip real-time qPCR fluorescence measurements.

5/21
Figure 5



6/21

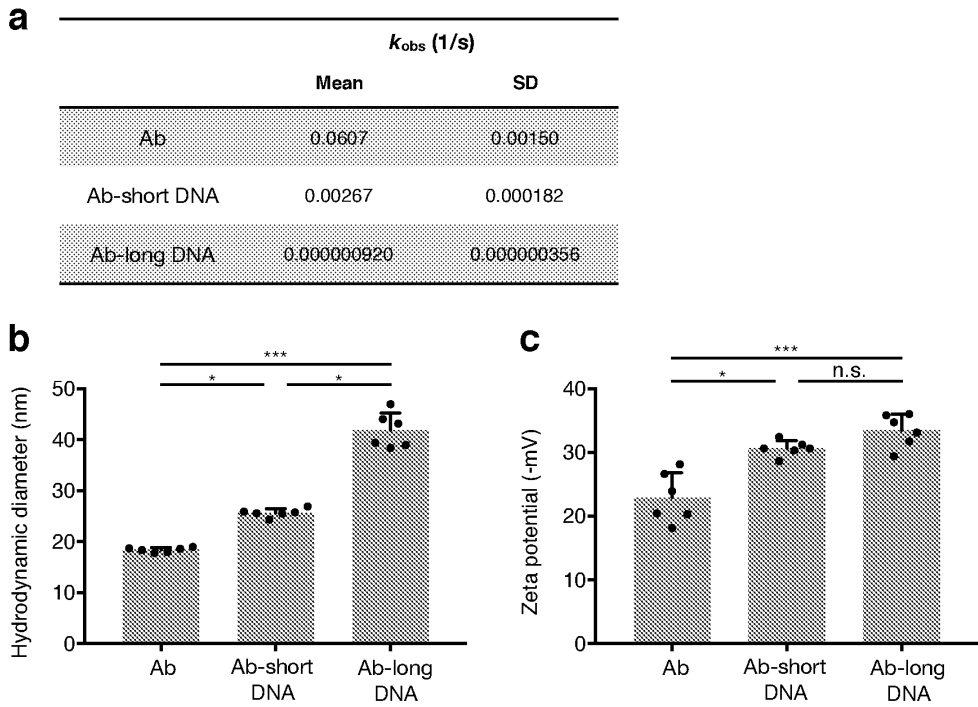
FIGURE 6



SUBSTITUTE SHEET (RULE 26)

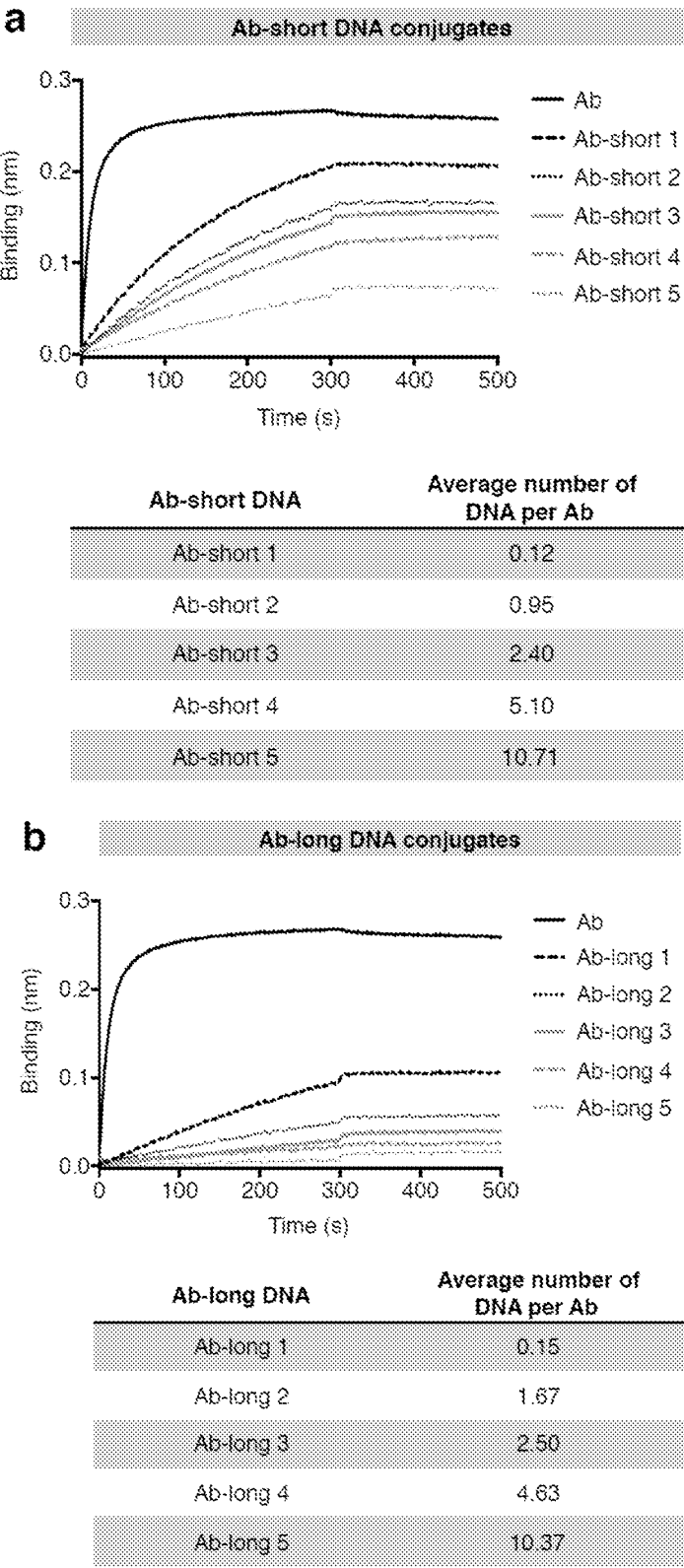
7/21

Figure 7

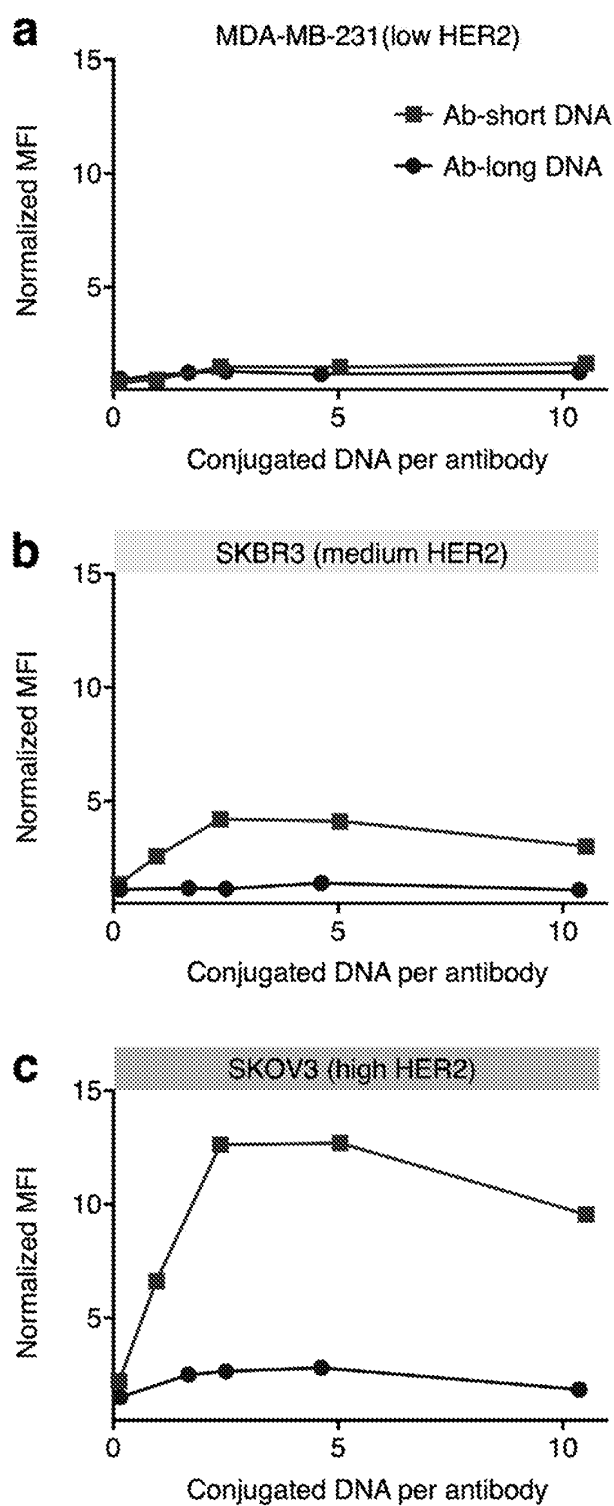


8/21

FIGURE 8



9/21
Figure 9



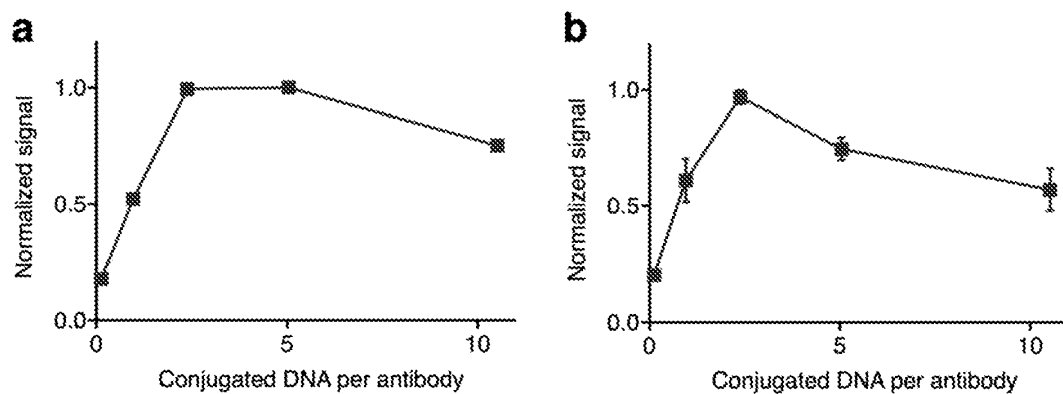
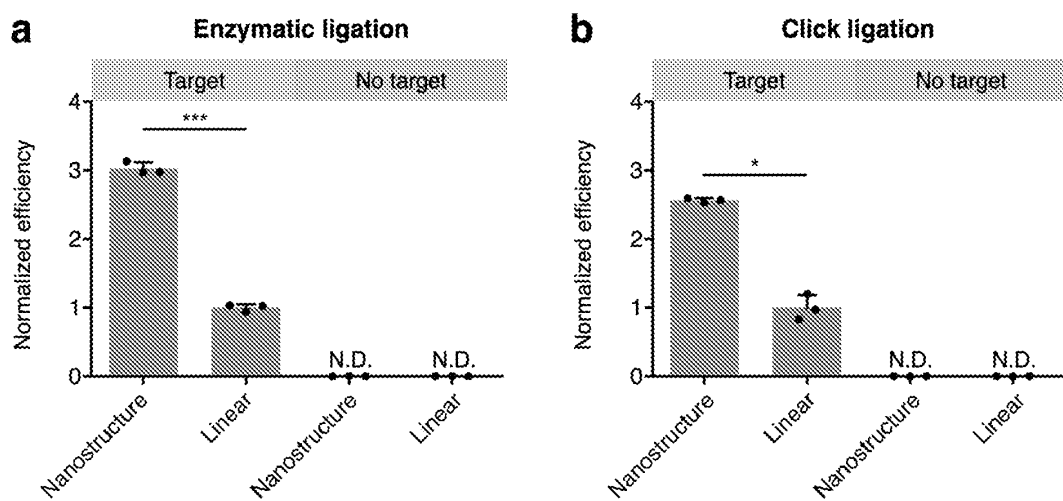
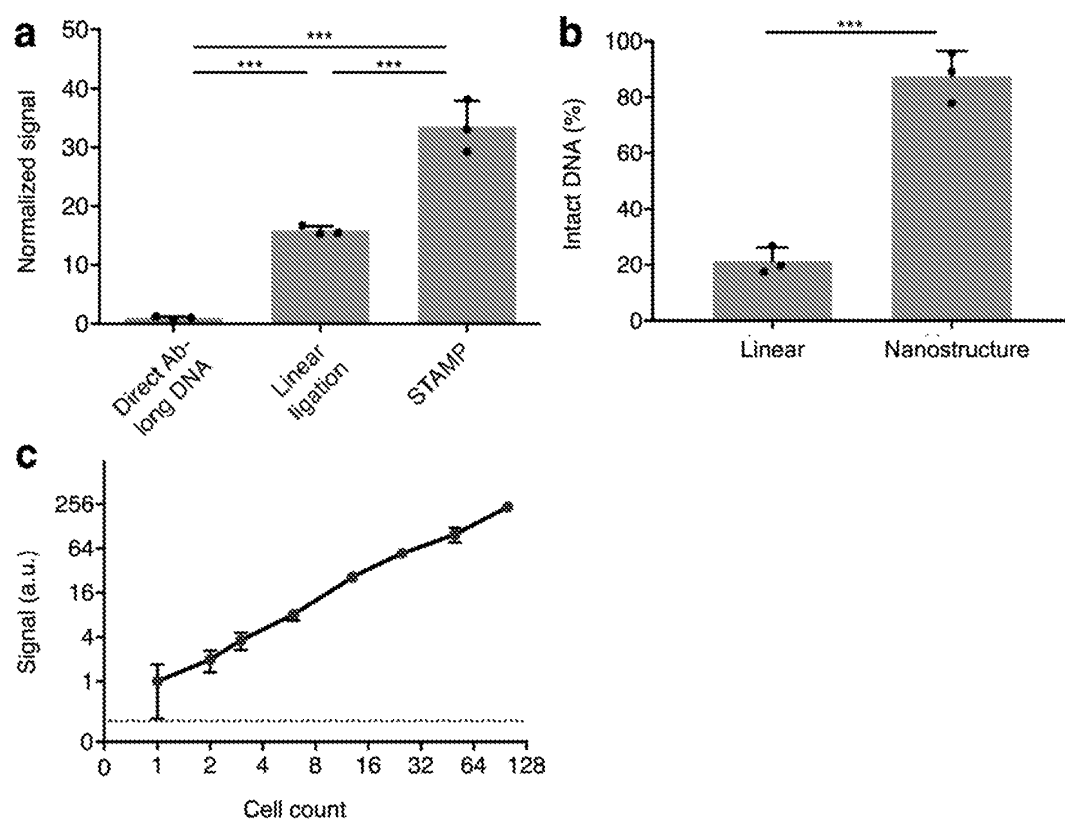
10/21
Figure 10

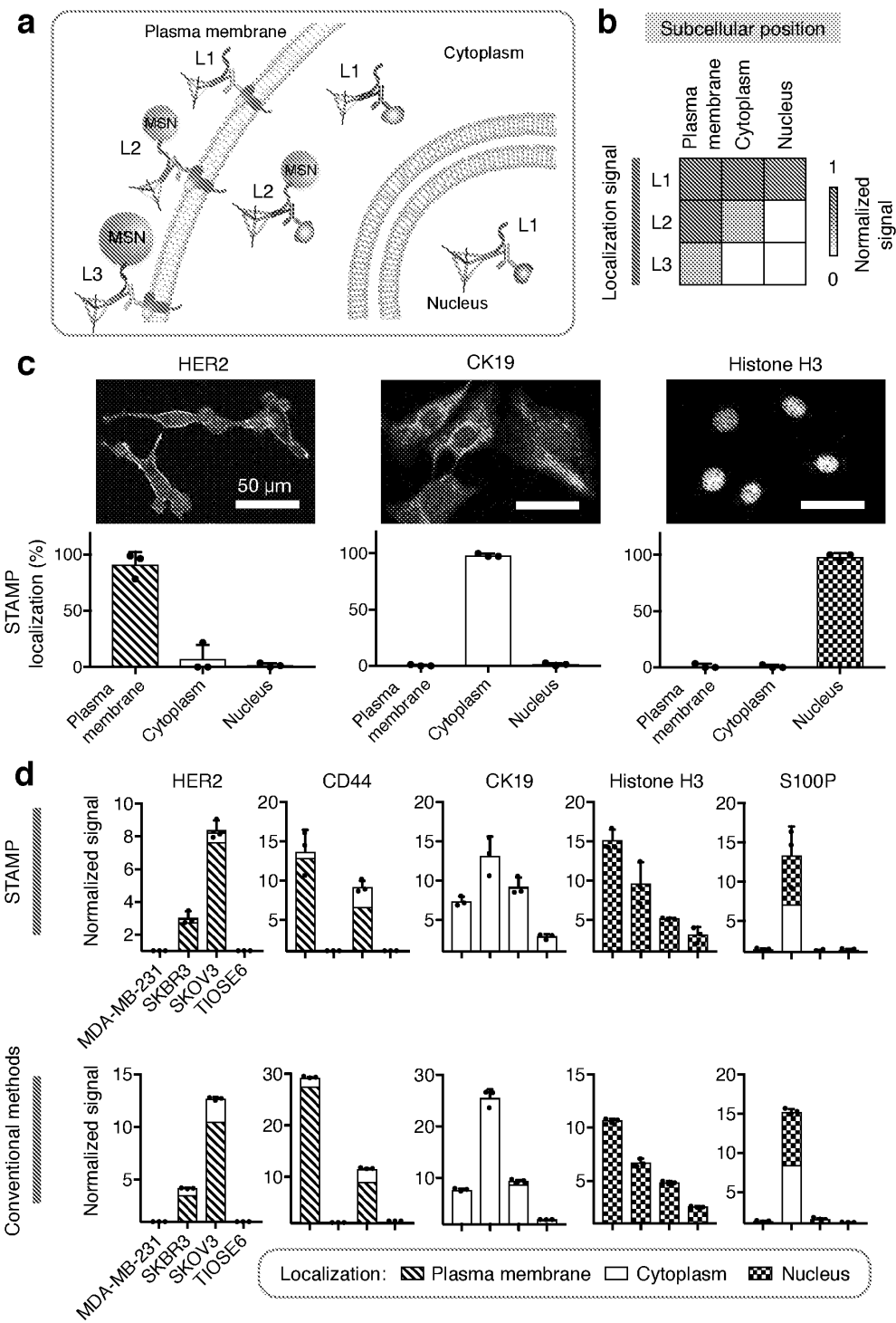
Figure 11



11/21
Figure 12

12/21

Figure 13



13/21

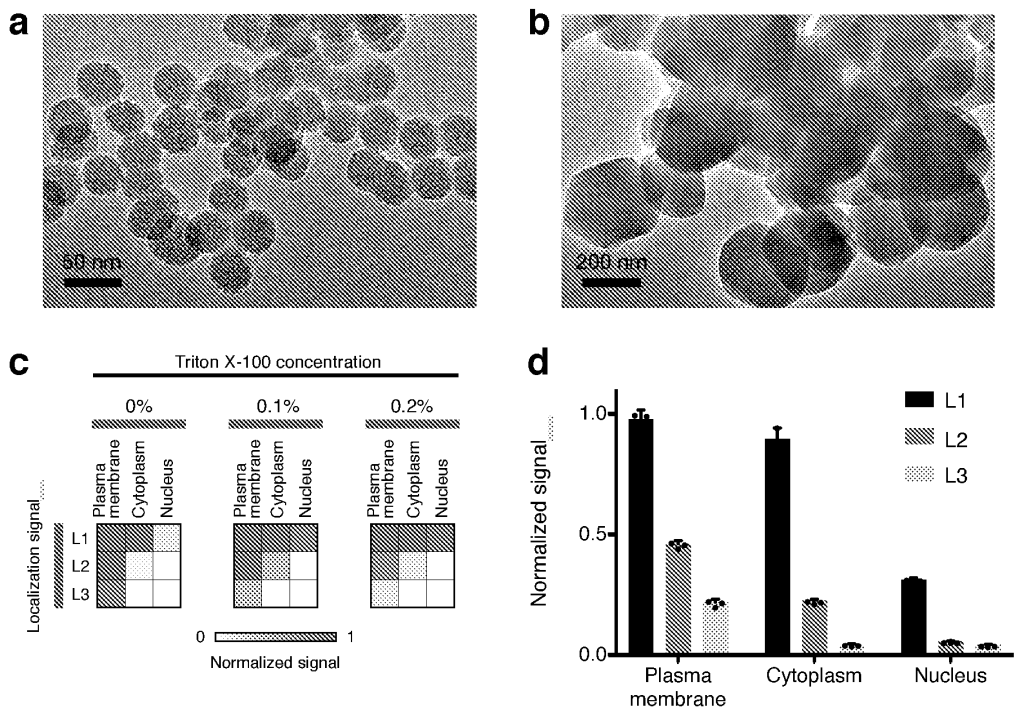
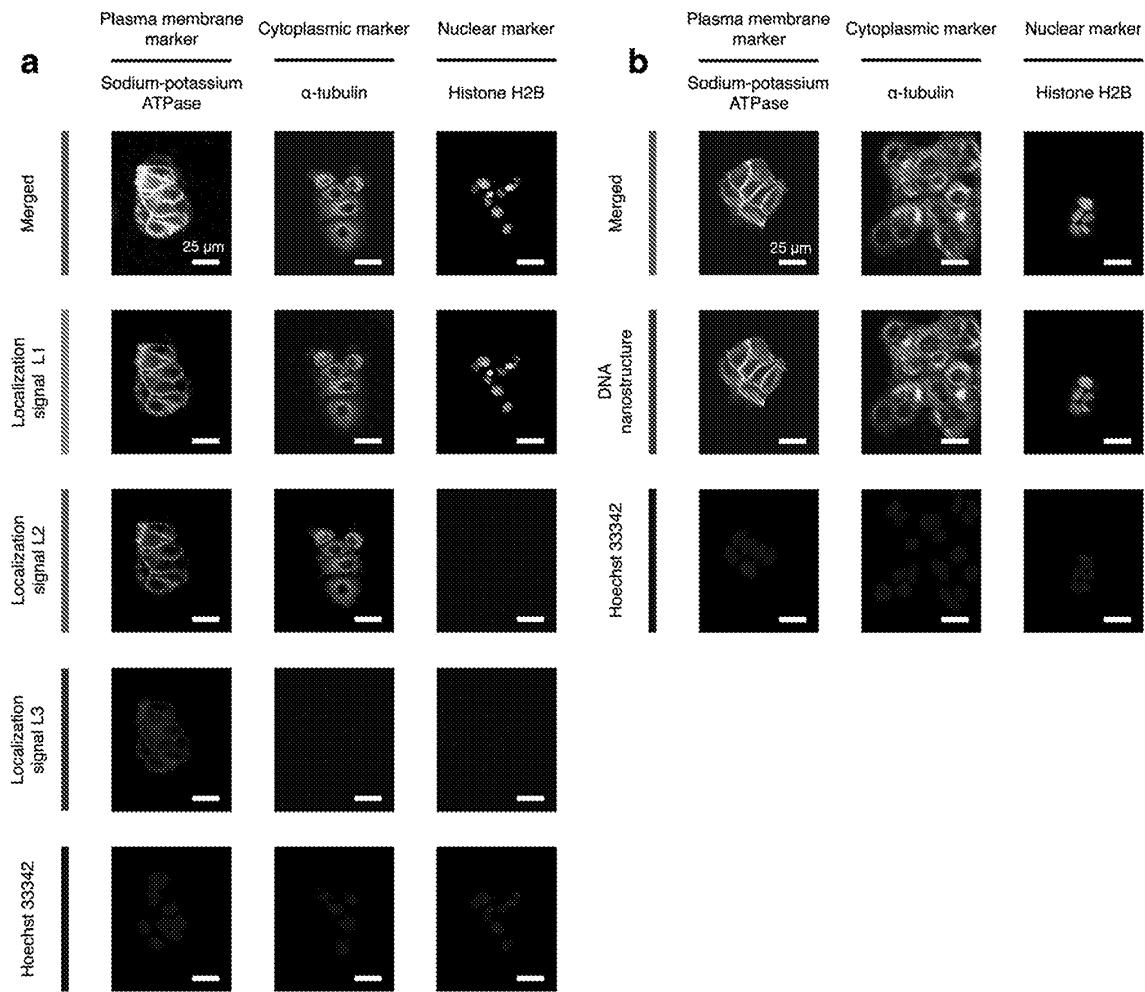


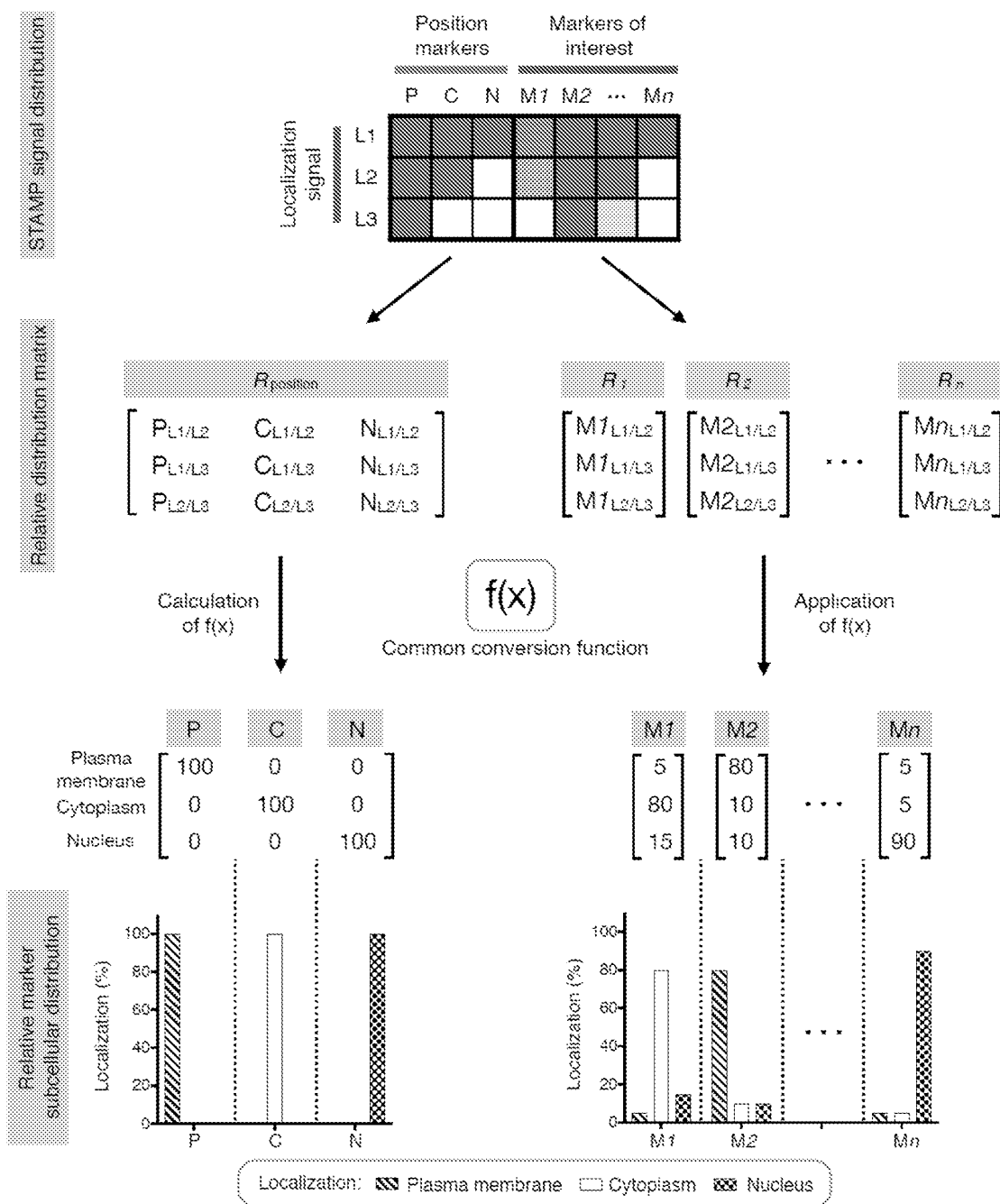
Figure 14

14/21
Figure 15

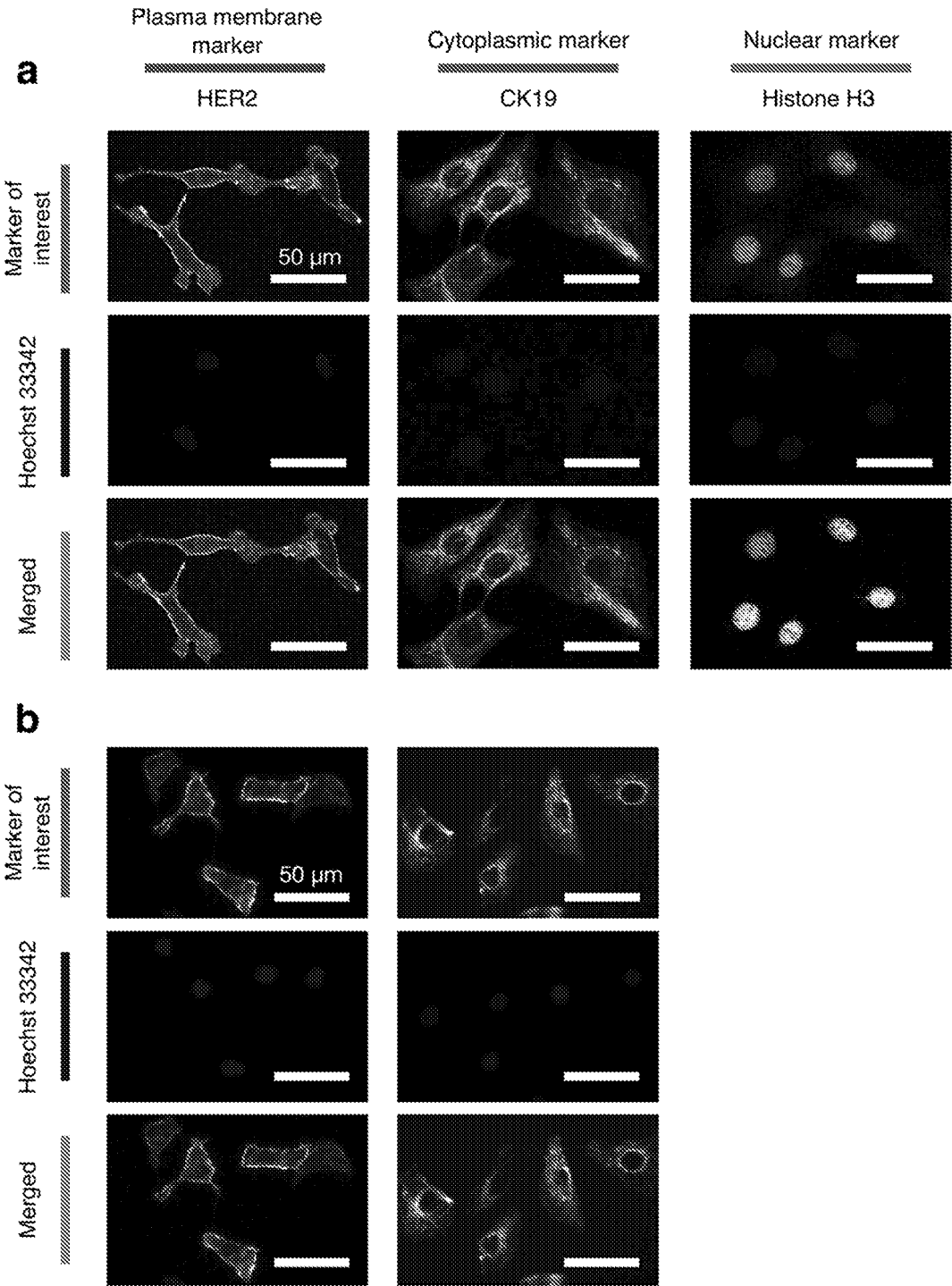


15/21

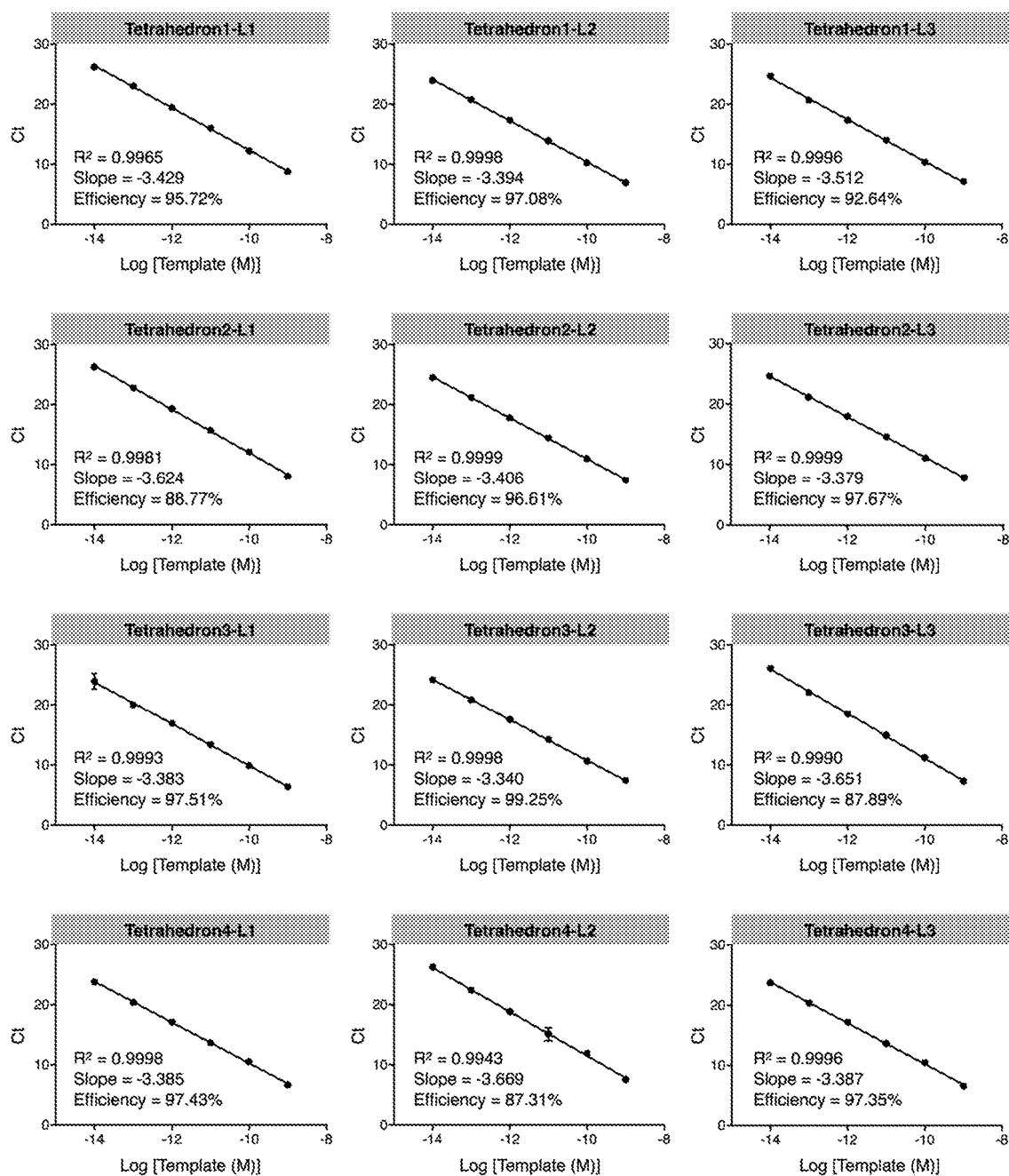
FIGURE 16



16/21
Figure 17



17/21
Figure 18



18/21
Figure 19

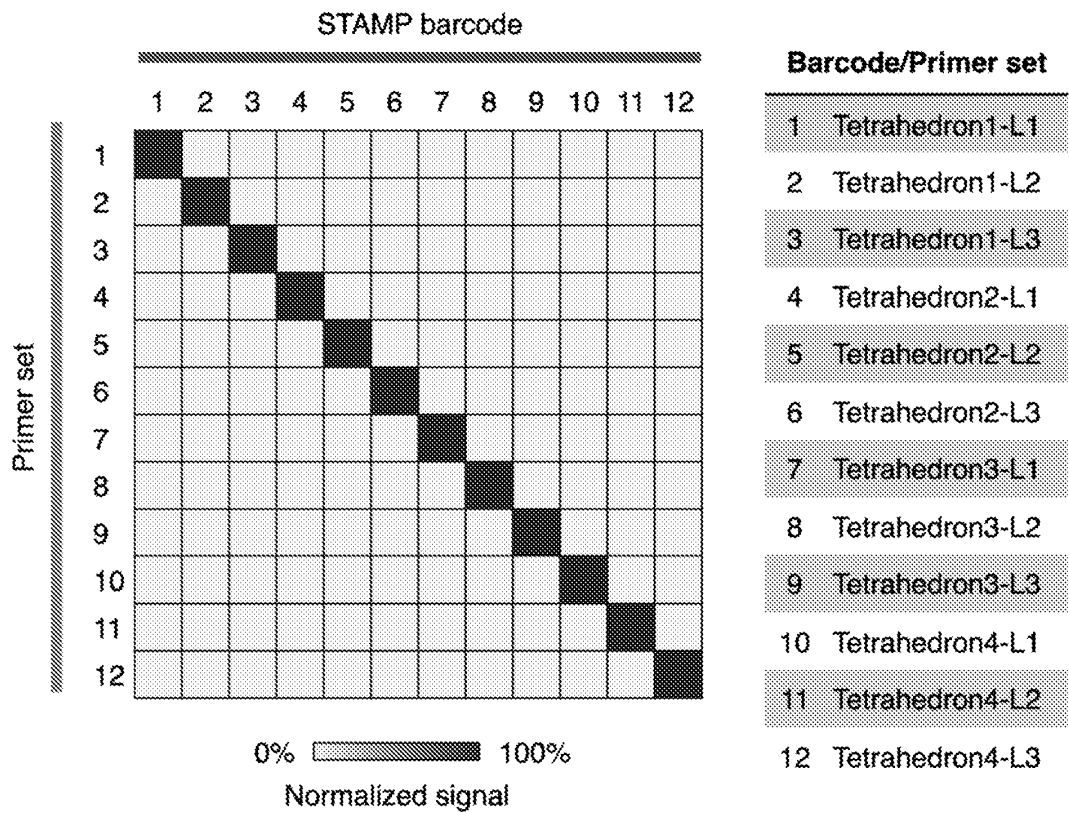
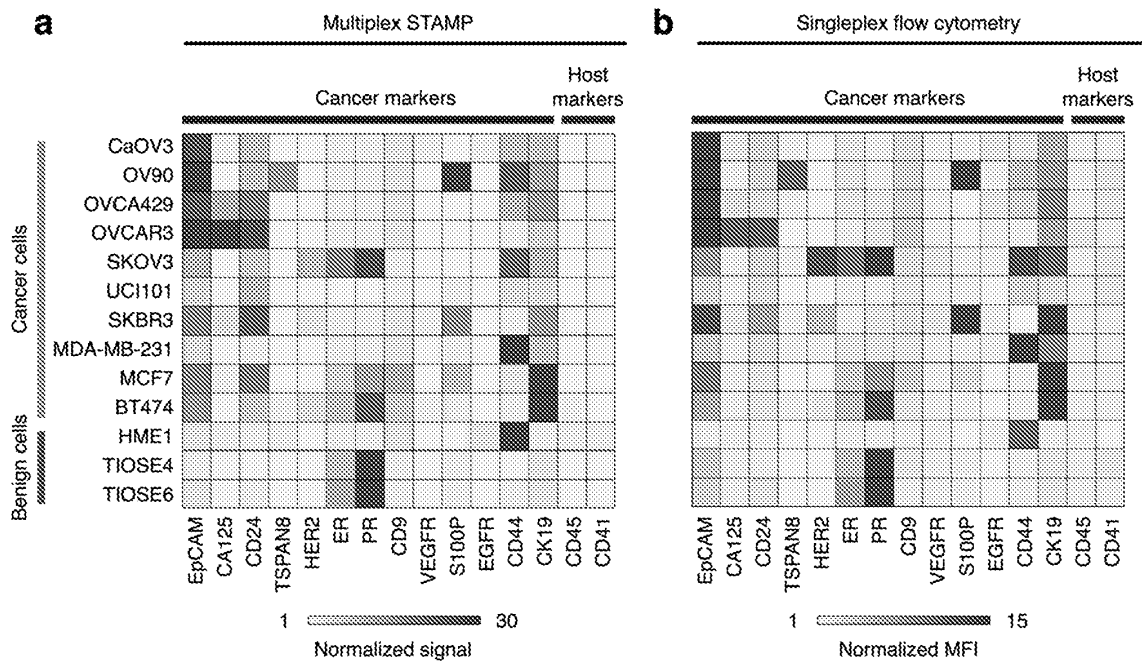
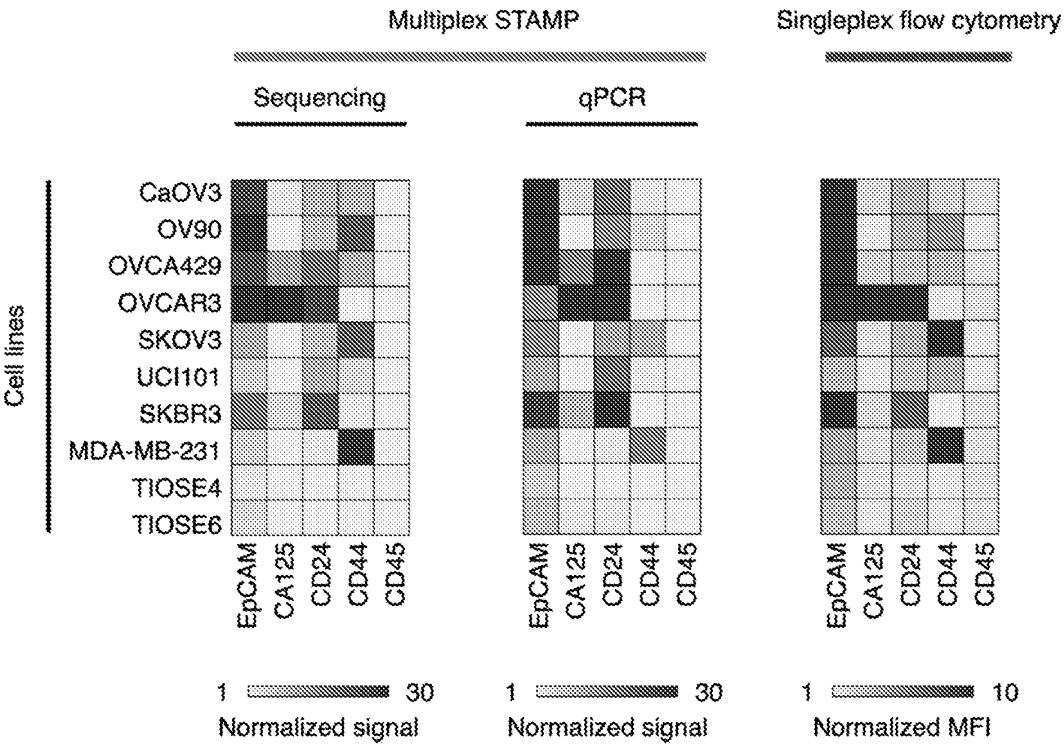


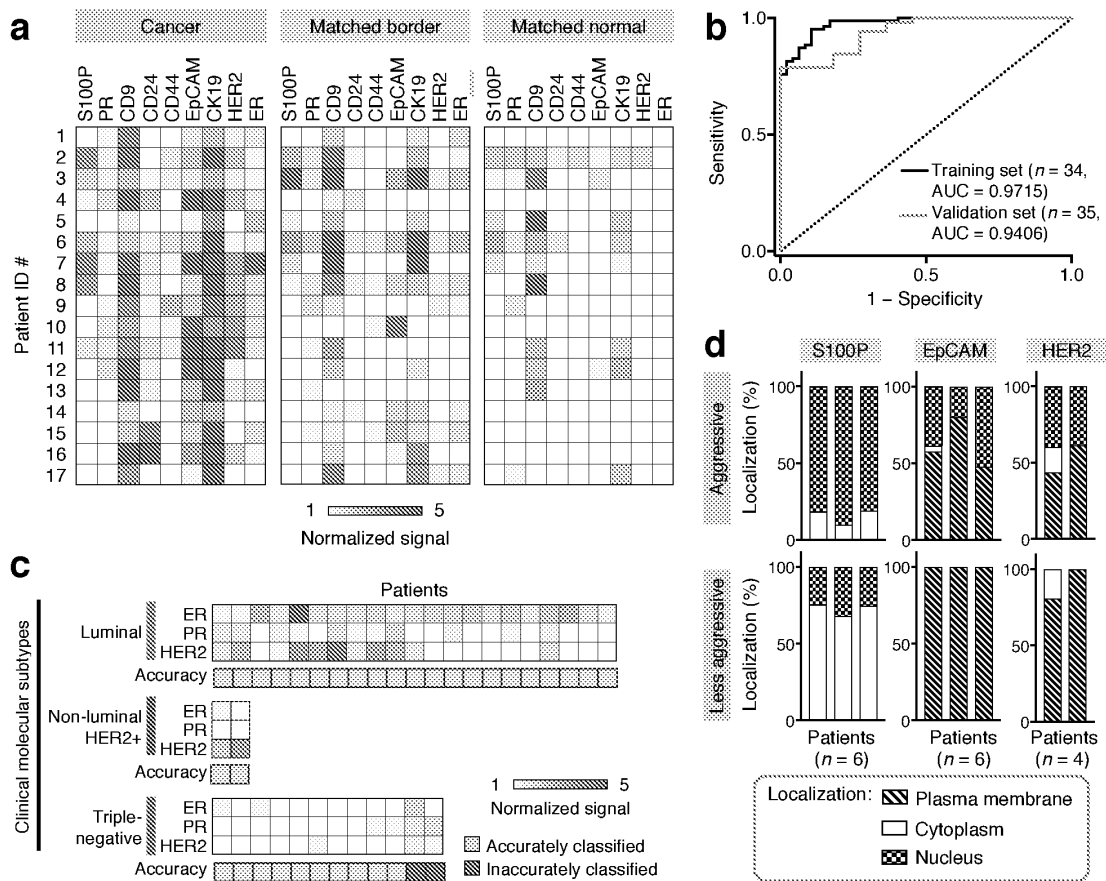
Figure 20



19/21
Figure 21



20/21
Figure 22



21/21
Figure 23

