

Oriented nanobody-field-effect transistor interfaces enable ultrasensitive cancer biomarker detection

Nature Sensors

Portable biosensors for sensitive cancer biomarker detection in clinical samples face probe instability, non-specific adsorption, and Debye screening in serum. We present SNAP-FET, a field-effect transistor platform integrating genetic code expansion and click chemistry to site-specifically immobilize nanobodies with controlled orientation within the Debye length. This achieves attomolar-level sensitivity and stable electronic detection of endometrial cancer biomarkers directly in serum. The portable ENDOCARE implementation establishes a versatile framework for point-of-care biochemical sensing in early oncology diagnostics.

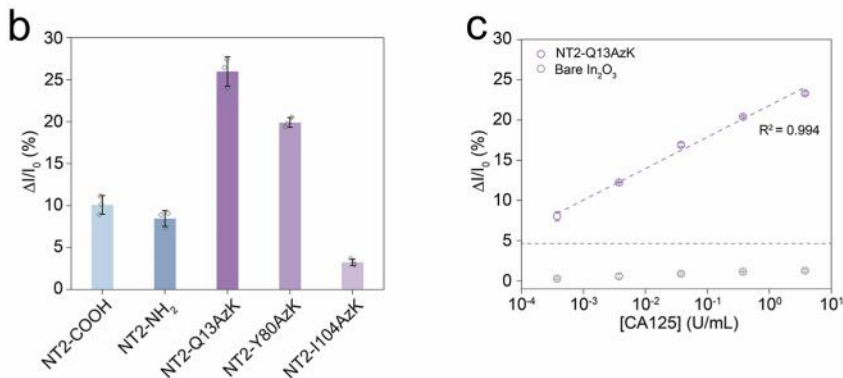
AntibodySystem offers two products that contributes to this study.



Cited Products

[EHJ31001] Recombinant Human MUC16/CA125 Protein, C-His

[MVV05491] Anti-Bacteriophage M13 Capsid protein G8P Monoclonal Antibody (1A191), HRP



Selection of the insertion site for Orthogonal-NT2 and validation of its CA125 detection capability

Associated Products

[YHJ31001] Recombinant Human MUC16/CA125 Protein, C-His

[MVV05441] Anti-Bacteriophage M13 Capsid protein G8P Monoclonal Antibody (1A191), FITC



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