

Supporting Information

Nanodisc-Based Bioelectronic Nose Using Olfactory Receptor Produced in *Escherichia coli* for the Assessment of Death-Associated Odor Cadaverine

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Schematic diagram of fabrication of CNT-FET with floating electrode

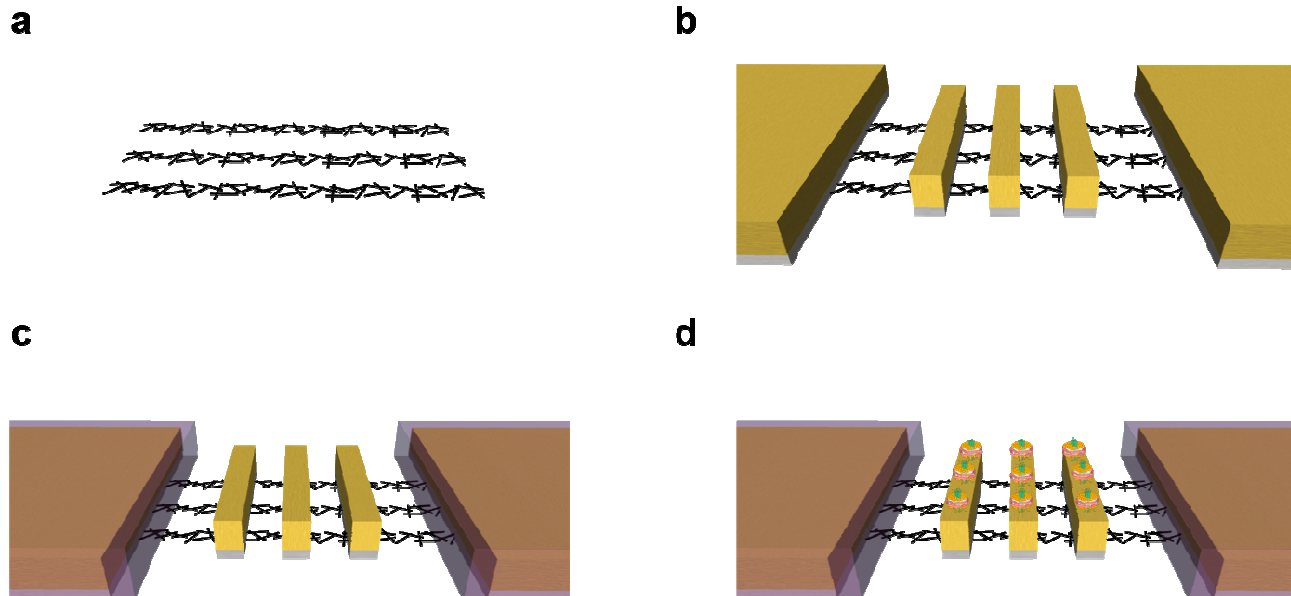


Figure S1. The fabrication process of an ONBN. (a) CNTs were patterned in SiO₂ substrates as the channels (b) Source, drain and floating electrodes (Pd/Au, 10/30 nm) were fabricated via thermal evaporation method. (c) The source and drain electrodes were passivated by the photoresist to prevent current leakage in aqueous conditions. (d) T13NDs were immobilized on the Au surfaces of the floating electrodes.

Western blot of TAAR13c in HEK-293 cell and tested chemicals

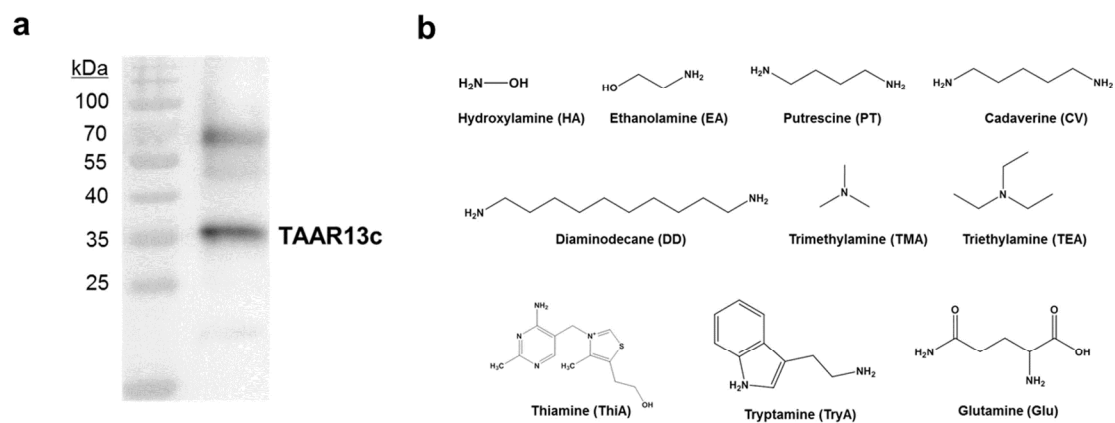


Figure S2. (a) Western blot analysis of HEK-293 cells expressing TAAR13c. The western blot analysis was performed with FLAG Ab. (b) Various tested amines which were organized by amine moiety and carbon-atomic differences.

Analysis of purified ApoA-I expressed in *E. coli*

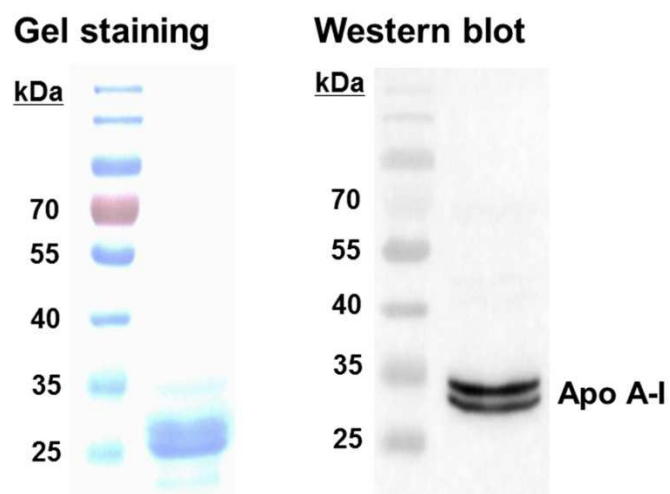


Figure S3. Gel staining and western blot analysis of purified ApoA-I. The ApoA-I was highly purified. And the western blot analysis was performed with His-Probe Ab.

SEC analysis of T13NDs

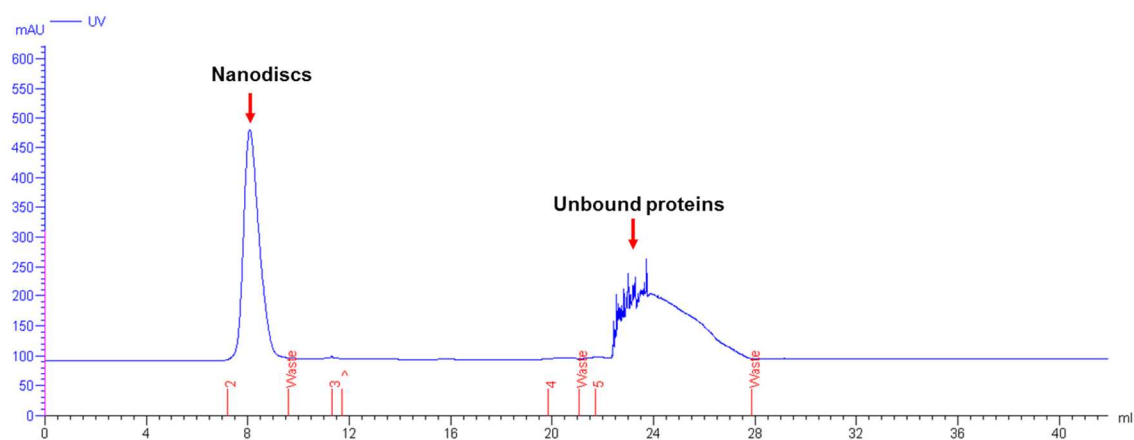


Figure S4. Separation of T13NDs from ND-mixture solutions using size exclusion chromatography. The TAAR13c-embedded nanodiscs were successfully purified with the SEC column.

Optimization of conditions for the formation of T13NDs

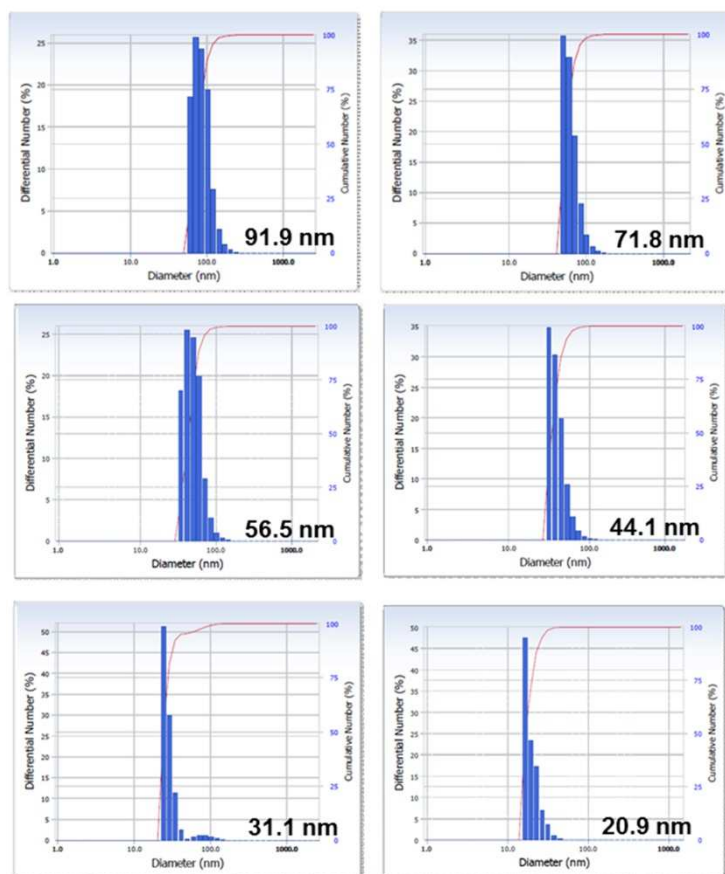


Figure S5. DLS results of T13NDs purified in various conditions. The size of NDs was minimized (~20 nm) with optimization such as lipid sonication time (10-60 min) and protein concentrations (0.5-2 μ M). The optimized condition was 30 min (lipid sonication time) and 1 μ M (protein concentration).

Real-time response of T5NDs-conjugated CNT-FET with floating electrode

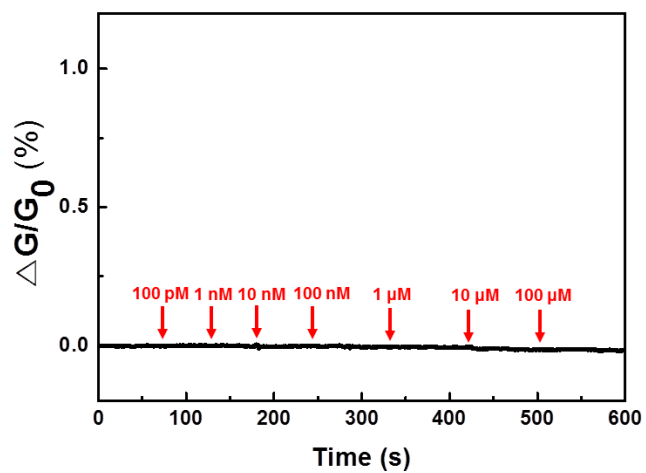


Figure S6. Real-time response of T5NDs-immobilized CNT-FET with floating electrode to the various concentrations of CV. The CV was added up to 100 μ M; however, there is no meaningful response.