Electronic Supplementary Material (ESI) for Lab on a Chip
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Live Human Nasal Epithelial Cells (hNECs) On Chip for In Vitro Testing of Gaseous Formaldehyde Toxicity via Airway Delivery

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Electronic Supplementary Information (ESI)

I. Donors' medical background

Table S1 - Donors' medical background

Code	Age	Gender	Diagnosis	Sample
No. 62IT	22	Male	Septal deviation	Inferior turbinate
SG04IT	45	Male	Septal deviation	Inferior turbinate
SG12IT	38	Male	Septal deviation	Inferior turbinate

II. PrestoBlue™ cell viability assay to check the severe toxicity induced by 3.0 mg/m^3 FA exposure

Cell viability assay using PrestoBlue™ reagent (Invitrogen) was performed following the manufacturer's protocol. The 10X PrestoBlue™ dye was diluted with B-ALI™ differentiation medium into 1X working solution, and then 100 µl of working solution was added into each transwell immediately after the gaseous FA exposure. After incubation with the FA-treated cells for 30 min in a 37 ºC incubator, the reaction mixtures were transferred to a 96-well plate and the fluorescence intensity was measured by Synergy™ H1 microplate reader (BioTek®, Winooski, Vermont) at excitation and emission wavelengths of 560 nm and 590 nm, respectively. A "no cell" control (1X working solution without incubation with cells) was used as baseline fluorescence value. The fluorescence reading from 0 mg/m^3 FA exposed cells was used as a negative control for normalization. The result as shown in Figure S1 indicated a dose-dependent toxic effect of the FA-treated hNECs. Significant reduced viability or severe toxicity was seen in 3.0 mg/m^3 group (0.59 compared to 1.0).

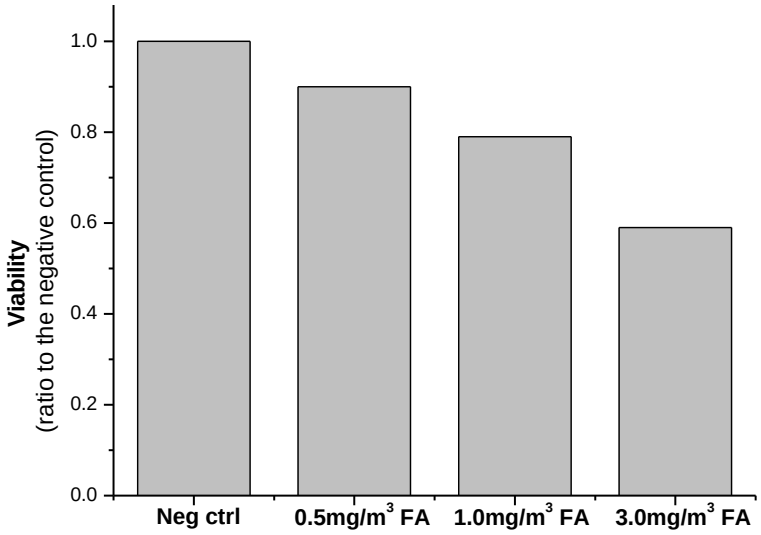

Figure S1. Viability test of FA-exposed hNECs on microfluidic device.