Supporting Information

The interactions of single-wall carbon nanohorns with polar epithelium

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Figure S1. The energy dispersive spectrum of agSWCNHs and SWCNHox.



Figure S2. A, FTIR spectrum of agSWCNHs and SWCNHox. Black arrows indicate the additional absorption peaks besides the original ones; B, Particle size distribution of suspensions of agSWCNHs and SWCNHox in distilled water with 10 mg mL⁻¹ BSA as suspending agent by dynamic light scattering analysis; C, Zeta potentials of agSWCNHs and SWCNHox in distilled water with 10 mg mL⁻¹ BSA as suspending agent.



Figure S3. Fluorescence CLSM images of DMEM (control, A) and F-B-SWCNHox (B) suspensions in DMEM; (C) Fluorescence spectrum of F-B-SWCNHox in DMEM.



Figure S4. Cell viability was detected by CCK-8 assays after incubation with inhibitors and 100 µgml⁻¹ SWCNHox for 3h. Untreated cell was used as the control.

z00	z01	z02	z03	z04	z05	z06	z07	z08	z09
z10	z11	z12	z13	z14	z15	z16	z17	z18	z19
z20	z21	z22	z23	z24	z25	z26	227	z28	229
z30	231	232	733	z34	z35	z36	237	z38	z39
z40	z41	z42	z43	z44	z45	z46	z47	z48	z49
z50	z51	z52	z53	z54	z55	z56	z57	z58	z59

Figure S5. Confocal image series of MDCK cell monolayer along the Z-axis after incubation with 40 μ g ml⁻¹ F-B-SWCNHox suspensions for 12 h at 37°C. Green represents F-B-SWCNHox, blue represents nuclei, red represents the pseudo-color of transwell membrane.

у00	y01	y02	y03	y04	γ05	у06	y07	γ08	γ09	y10	y11
y12	y13	y14	y15	y16	y17	y18	y19	γ20	y21	y22	y23
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y24	y25	y26	y27	y28	y29	y30	y31	y32	y33	y34	y35
v36	v37	v38	v39	v40	v41	v42	v43	v44	v45	v46	v47
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y48	y49	y50	y51	y52	γ53	γ54	γ55	γ56	y57	y58	γ59
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у60	y61	уб2 •••• 24.07 • ••• •	y63	y64	y65	y66	y67	y68	y69	y70	y71
y72	v73	v74	y75	y76	y77	y78	y79	y80	y81	y82	v83
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y84	y85	y86	y87	y88	y89	y90	y91	y92	y93	y94	γ95
			5 20 10 10 10 10 10 10 10	Contraction of the second	e trovin de m		offertan and		attyrational served	1994, 109 Barris	

Figure S6. Confocal image series of MDCK cell monolayer along the Y-axis after incubation with 40 μ g ml⁻¹ F-B-SWCNHox suspensions for 12 h at 37°C. Green represents F-B-SWCNHox, blue represents nuclei, red represents the pseudo-color of transwell membrane.



Figure S7. The TEER value changes of MDCK cell monolayers incubated with (A) different types of SWCNHs for different time periods at the concentration of 20 μ gml⁻¹, (B) different concentrations of SWCNHox for different time periods, (C) different inhibitors used in endocytosis pathway study, and the influence of 100 μ g ml⁻¹ SWCNHox on TEER was determined simultaneously.

Element assay	C%	N%	Н%
agSWCNHs	95.3	4.23	Not detected
SWCNHox	91.5	0.564	0.728

Table S1 Results of elemental analysis

Table S2 Characteristic	of agSWCNHs and	SWCNHox in different media
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sample	Medium	Centrifugation (rpm)	Time of repose (h)	Particle Size(d.nm)	PDI
agSWCNHs	water		0	2155.3±348.0	0.881±0.131
agSWCNHs	water with BSA	12 thousand	0	220.5±10.9	0.230±0.019
agSWCNHs	water with BSA	12 thousand	48	210.1±12.1	0.308±0.037
agSWCNHs	PBS with BSA	12 thousand	0	191.4±8.55	0.295±0.019
agSWCNHs	PBS with BSA	12 thousand	48	224.2±14.1	0.331±0.004
SWCNHox	water		0	465.4±13.5	0.840±0.122
SWCNHox	water with BSA	12 thousand	0	139.6±2.87	0.214±0.01
SWCNHox	water with BSA	12 thousand	48	183.2±4.05	0.270±0.020
SWCNHox	PBS with BSA	12 thousand	0	161.3±9.77	0.265±0.027
SWCNHox	PBS with BSA	12 thousand	48	239.0±1.38	0.270±0.020