**Table S1:** Treatment conditions for microarray gene expression profiling samples. Target cells were exposed for 24 hours to different TPPs or solvent only as controls. For TPM and WS-CM, EC-30 doses were applied; for ST/CAS, the dose with the same amount of NIC as that in TPM at EC-30 was applied. Also, treatment with a high dose of NIC was done. For each condition, the dilution factors and NIC equivalents delivered are listed.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **101A** | **101B** | **HGEC** |
| **TPM (EC-30)** vs **DMSO** | 80 µg/ml  9.6 µg/ml NIC | 150 µg/ml  18 µg/ml NIC | 20 µg/ml  2.4 µg/ml NIC |
| **Low-STE (**containing same amount of NIC as those in EC-30 of TPM) vs **CAS** | 148-fold dilution  0.07% (w/v)  9.6 µg/ml NIC | 79-fold dilution  0.13% (w/v)  18 µg/ml NIC | 592-fold dilution  0.02% (w/v)  2.4 µg/ml NIC |
| **WS-CM (EC-30)** vs **Media** | 14-fold dilution  1.43% (v/v/)  1.5 µg/ml NIC | 12.5-fold dilution  1.60% (v/v)  1.7µg/ml NIC | 6-fold dilution  3.33% (v/v)  9.3 µg/ml NIC |
| **High-STE** vs **CAS** | 3-fold dilution  0.33% (w/v)  474 µg/ml NIC | 3-fold dilution  0.33% (w/v)  474 µg/ml NIC | 3-fold dilution  0.33% (w/v)  474 µg/ml NIC |
| **low-NIC** vs **DMSO** | 14 µg/ml NIC | N.D. \* | 14 µg/ml NIC |
| **high-NIC** vs **DMSO** | 474 µg/ml NIC | N.D. \* | 474 µg/ml NIC |

**\*** Since NIC vs DMSO was done mainly as control exposure, the second tumor cell line 101B was not included for microarray expression profiling under this condition.

**Table S2:** Summary of chemical analyses for nicotine and TSNAs in representative batches of the TPPs reagent stocks used.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Nicotine** | **NNN\*** | **NAT†** | **NAB§** | **NNK♯** | **pH** |
|  | [µg/mL] | [ng/mL] | [ng/mL] | [ng/mL] | [ng/mL] |  |
| **TPM** | 2402 | 287 | 308 | 29.7 | 285 | 6.15 |
| **STE** | 1422 | 166 | 91.1 | >3.10 but ≤10.3 | 35.7 | 6.91 |
| **WS-CM DME** | 42.5 | nq | nq | nq | nq | 8.07 |
| **WS-CM EpiLife** | 52.8 | nq | nq | nq | nq | 7.65 |

\*NNN: N'-nitrosonornicotine; **†**NAT: N'-nitrosoanatabine; **§**NAB: N'-nitrosoanabasine; **♯**NNK: 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone; nq, below quantitation limit. The TPPs were prepared as described in Materials and Methods.