**Supplementary Materials**

**Probabilistic cancer risk assessment for dietary intake of seven nitrosamine chemicals in Korea**

Jae-Woong Jung1, Un-Jung Kim2,3, Wook-Joon Yu2, June-Woo Park1,4,5, Eun Ju Jeong2,\*

*1 Environmental Biology Research Group, Korea Institute of Toxicology, Jinju, 52834, Gyeongnam, Republic of Korea*

*2 Developmental and Reproductive Toxicology Research Group, Korea Institute of Toxicology, Daejeon, 34114, Republic of Korea*

*3 Present address: Department of Earth and Environmental Sciences, University of Texas at Arlington, Arlington, TX, USA*

*4Human and Environmental Toxicology Program, Korea University of Science and Technology (UST), 217, Gajeong-ro, Daejeon, 34113, Republic of Korea*

*5Joint Research Center for Alternative & Predictive Toxicology, Korea Institute of Toxicology, Jinju, 52834, Gyeongnam, Republic of Korea*

Corresponding author: Eun Ju Jeong ([ejjeong@kitox.re.kr](mailto:ejjeong@kitox.re.kr))

Address: 141 Gajeong-ro, Yuseong-gu, Daejeon 34114, Republic of Korea

Tel: +82-41-610-8030

Number of Figures: 3

**Figure S1.** Empirical distribution functions of age-dependent intake rate (ng/kg-day) of seven nitrosamine chemicals (NDMA, NDEA, NMOR, NPYR, NDBA, NPIP and NMEA) via food consumption pathway.

(a) NDMA

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

(b) NDEA

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

(c) NMOR

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

(d) NPYR

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

(e) NDBA

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

(f) NPIP

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

(g) NMEA

|  |  |
| --- | --- |
| 1~2 years of age | 3~5 years of age |
| 6~11 years of age | 12~18 years of age |
| 19~64 years of age | ≥65 years of age |

**Figure S2.** Cancer risk distribution of seven nitrosamine chemicals (NDMA, NDEA, NMOR, NPYR, NDBA, NPIP and NMEA) via food consumption pathway derived by a Monte-Carlo simulation technique (10,000 iterations).

(a) NDMA



(b) NDEA



(c) NMOR



(d) NPYR



(e) NDBA



(f) NPIP



(g) NMEA



Figure S3. The derived cancer risks of seven nitrosamine chemicals (NDMA, NDEA, NMOR, NPYR, NDBA, NPIP and NMEA) via food consumption pathway using TD50 approach

