Supplementary Information

Nickel Nanoparticles Induce the Synthesis of a Tumor-Related Polypeptide in Human Epidermal Keratinocytes

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**Table S1.** Concentration range of nickel used for each nickel compound during the cytotoxicity assays.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Nickel compound | Total Ni concentration / mg L−1 | | | | | | |
| NiNPs | 10 | 50 | 100 | 200 | 500 | 800 | 1000 | |
| NiSO4 | 10 | 50 | 100 | 200 | 500 | 800 | 1000 | |
| NiCl2 | 1 | 10 | 50 | 100 | 200 | 500 | 800 | |
| NiO | 1 | 10 | 50 | 100 | 200 | 400 |  | |
| Ni3S2 | 1 | 10 | 50 | 100 | 200 | 400 | 500 | |

**Table S2.** Operational conditions of SEC-ICPMS analysis.

|  |  |
| --- | --- |
| SEC Column | **Superdex 75 10/300 GL**  **Superdex 200 10/300 GL** |
| Carrier | Ammonium acetate 100 mM pH 7.4 |
| Flow | 0.7 mL min−1 |
| Injection volume | 100 µL |
| Reaction cell flow rate (H2) | 3.5 mL min−1 |
| Isotopes monitored | 58Ni 60Ni |

**Table S3.** Operational conditions of HILIC-ICPMS analysis.

|  |  |
| --- | --- |
| HILIC Column | **SeQuant® ZIC®-cHILIC** |
| Carrier | Ammonium formate 10 mM pH 5.5 (A)  ACN (B) |
| Flow | 0.2 mL min−1 |
| Injection volume | 6 µL |
| Gradient program | 0–5 min 90% B  5–45 min down to 50% B  45–50 min 50% B  50–52 min down to 35% B  52–55 min 35% B  55–60 min up to 90% B  60–70 min 90% B |
| Reaction cell flow rate (H2) | 5 mL min−1 |
| Auxiliary gas (O2) | 5% |
| Isotopes monitored | 58Ni 60Ni |

**Table S4.** Total amount of nickel found in the medium and in cytosols treated with NiO Ni3S2 at 24h with a nickel dose corresponding to medium mortality.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Compound | Ni Mass Added, µg | Ni Mass in Medium, µg | Ni Mass in Cytosol, µg | Ni Mass in Cytosol, % |
| NiO | 500 | 517 ± 2 | 1.69 ± 0.01 | 0.34 ± 0.01 |
| Ni3S2 | 2000 | 2075 ± 9 | 3.20 ± 0.07 | 0.17 ± 0.01 |



**Figure S1.** Nanoparticle size distribution obtained by single particle-ICP-MS for the stock suspension of NiNPs.



**Figure S2.** Time scan obtained by single particle-ICPMS for cell cytosols treated with NiNPs.