**Table S1.** Primer sequences of genes evaluated in this paper

| Neurotoxicity | Forward (5′-3′) | Reverse (5′-3′) |
|---|---|---|
| *rpl13a* | TCTGGAGGACTGTAAGAGGTATGC | AGACGCACAATCTTGAGAGCAG |
| *β-synuclein* | ATGGATGTTTTTATGAAGGGGC | ACGCTGTCTTTGGTCTTGCT |
| *parkin* | GCGAGTGTGTCTGAGCTGAA | ATCACAGCCCTGAAGTGTGG |
| *pink1* | GGCAATGAAGATGATGTGGAAC | ATCACGTTGGGATGAGCACT |
| *uch-l1* | CTTCCCTTTAACGCAACAGC | CCCACAGTTCCACAGGAGTT |
| *park7* | TGTTACTGTCGCAGGTCTGG | CAGGCAGAAGAACAACGTCA |
| *atg5* | AGGGGATAACAGCACAAACG | CTTCTTATGCAGCGTGTCCA |
| *ambra1a* | TAACCAGGAAACTGGCCAAC | AATATGCTGCAGGGGACAAC |
| *gfap* | GGATGCAGCCAATCGTAAT | TTCCAGGTCACAGGTCAG |
| *gap43* | CAGCCGACGTGCCTGAA | GGATTCCTCAGCAGCGTCTG |
| **Inflammation and oxidative stress** | | |
| *Il8* | GTCGCTGCATTGAAACAGAA | CTTAACCCATGGAGCAGAGG |
| *cxcl-cic* | CATCCGGCCAGCTCTGCTTGAAT | CCACTCTTGACCTCCTGTGCTCTCT |
| *ccl34a.4* | CTTTGACGCATGGAGGATTT | TGCAGCTCAACCAGAAGATG |
| *nfkb2* | TGGCTGGAGCACTAAGGATG | CCTCTCTGCTTTGGCTCCTC |
| *nfkbiaa* | ACAACCGAAGAGAGAACATGGA | CGAAATCTCCCGCGTCTCAT |
| *tnfα* | CGCTGGTGATGGTGTCTAGG | CCCTGGGTCTTATGGAGCGT |
| *il1β* | CGTACTCAAGGAGATCAGCGG | GCGGTGCTGATAAACCAACC |
| *il6* | GGCATTTGAAGGGGTCAGGA | GCGTTAGACATCTTTCCGTGC |
| *hmox1a* | CCACGTCAGAGCTGAAAACA | AGCGCTCGGTAGATCTCGTA |
| *nrf2a* | GAGCGGGAGAAATCACACAGAATG | CAGGAGCTGCATGCACTCATCG |
| *nrf2b* | GGCAGAGGGAGGAGGAGACCAT | AAACAGCAGGGCAGACAACAAGG |
| **Housekeeping** | | |
| *ism12b* | AGTTGTCCCAAGCCTATGCAATCAG | CCACTCAGGAGGATAAAGACGAGTC |

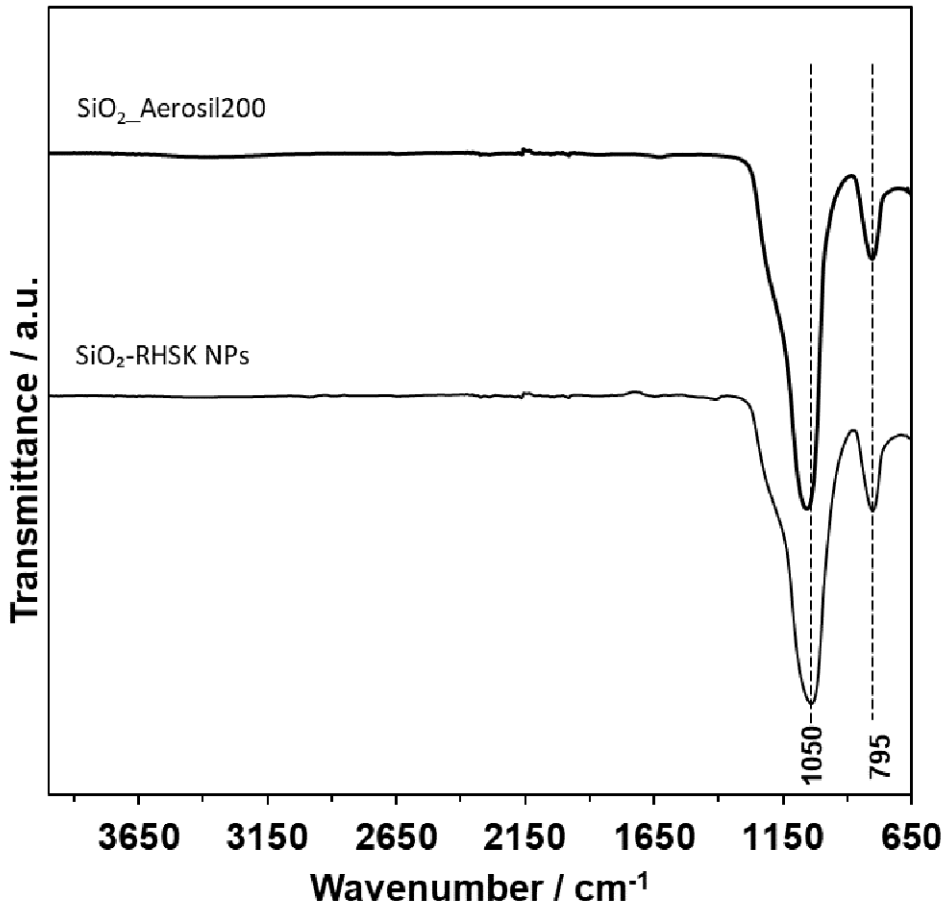


**Figure S1. FTIR-ATR spectrometry.** The FTIR spectra for both samples exhibited bands at ca. 800 and 1050 $cm^{-1}$, which can be assigned to the symmetric and asymmetric stretching vibration of Si-O-Si bonds, respectively. As expected, similar spectra were obtained for $SiO_2$-RHSK NPs and $SiO_2$-Aerosil200.

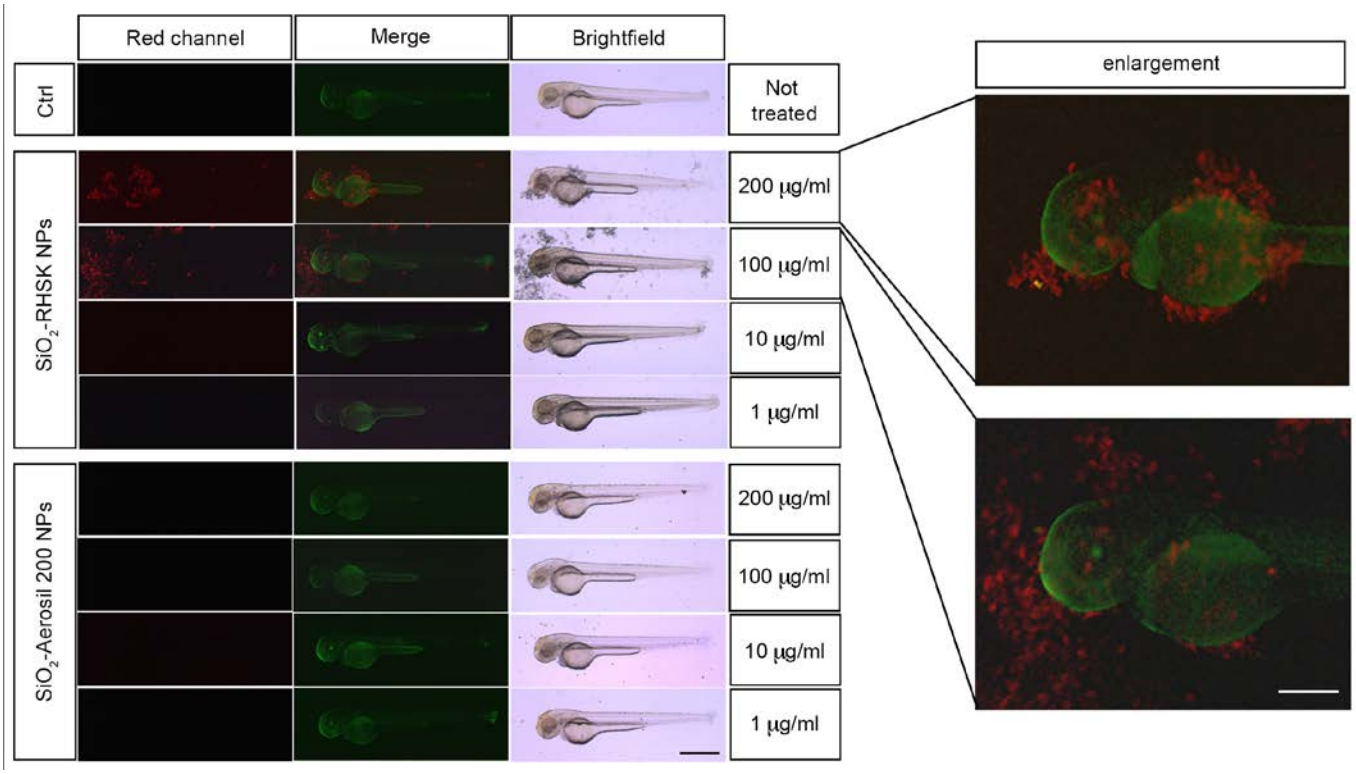


**Figure S2. Representative images of embryos at 72 hpf exposed to $SiO_2$-RHSK and $SiO_2$-Aerosil200 NPs at different concentrations for 48 h, showing visible $SiO_2$-RHSK NPs agglomerates under a fluorescent stereomicroscope.**
To evaluate the NPs behavior after suspension in the FET solution, embryos exposed to $SiO_2$-Aerosil200 and $SiO_2$-RHSK NPs at different concentrations were observed under a fluorescent stereomicroscope. The magnifications showed that agglomerated of $SiO_2$-RHSK NPs are visible around the embryos at 72 hpf developmental stage, especially at higher concentrations (100 and 200 μg/ml). Scale bar: 100 μm.