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The Acute Toxicity of Mineral Fibres: A Systematic In Vitro Study Using Different THP-1 Macrophage Phenotypes

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Supplementary materials and methods:

The following mineral fibres have been selected for the study:

1) UICC standard crocidolite (South African, NB #4173-111-3) with chemical formula $(Na_{1.96}Ca_{0.03}K_{0.01})_2(Fe^{2+}_{2.34}Fe^{3+}_{2.05}Mg_{0.52})_{4.91}(Si_{7.84}Al_{0.02})_{7.86}O_{21.4}(OH)_{2.64}$ [48]. Sample contain minor (<1 wt%) impurities of hematite, magnetite, and quartz. This mineral fibre has been widely used as a positive control in numerous in vitro and in vivo studies [49, 80-82]. Full characterisation of the sample is available in the following works: Gualtieri et al. [48] and Pacella et al. [36].

2) Chrysotile from Balangero (Torino, Italy) with chemical formula $(Mg_{5.81}Fe^{2+}_{0.15}Al_{0.27}Fe^{3+}_{0.09}Cr_{0.01})_{6.33}Si_{3.97}O_{10}(OH)_{7.11}$ [32]. Sample contain minor impurities of antigorite, balangeroite, calcite, clinochlore, diopside, dolomite, magnetite, microcline, plagioclase, talc. Complete characterisation of the sample is available in Pollastri et al. [32] and Gualtieri et al. [48]. The cyto-genotoxicity of chrysotile from Balangero has recently been studied in the work of Gualtieri et al. [14].

3) Fibrous erionite-Na from Jersey (Nevada USA) $[(Na_{5.35}K_{2.19}Ca_{0.15}Mg_{0.11}Ti_{0.05})_{7.85}(Si_{28.01}Al_{7.90})_{35.91}O_{72\cdot28}\cdot13H_2O]$ with traces of clinoptilolite [28]. Complete characterisation of the sample is available in Pollastri et al. [32] and Gualtieri et al. [28].

Supplementary Figures

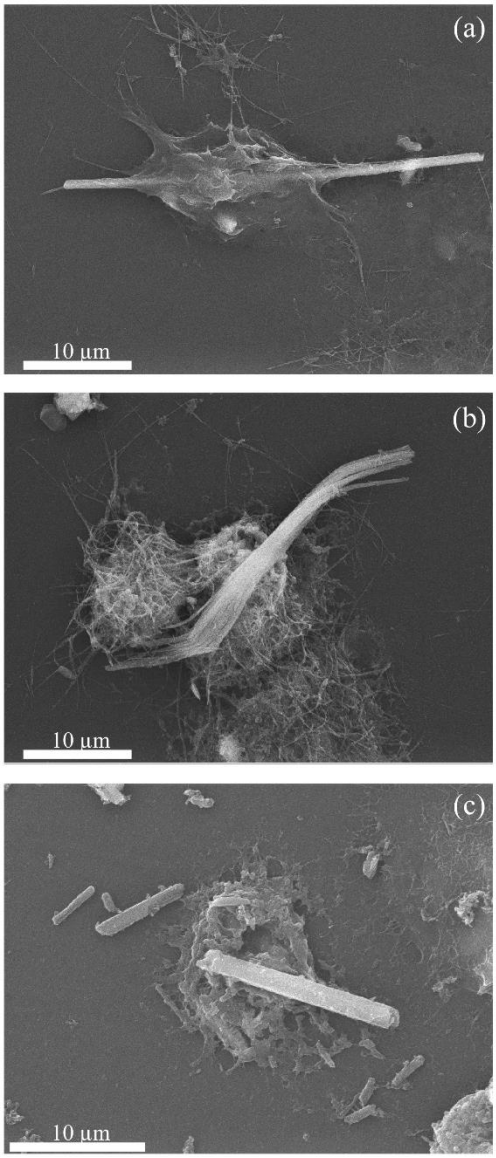

Figure S1. High-resolution FEG-SEM microphotographs of (**a**) M0-THP-1 cell interacting with a crocidolite fibre, (**b**) M0-THP-1 cell interacting with a chrysotile fibre, (**c**) M0-THP-1 cell interacting with an erionite fibre.