Auranofin is a gold based drug developed to treat reumatitis artoide. Interestingly, it has immunosuppressor effects but its use has decayed because of immunoactivation. Surprisingly, one of the side effects was a change in color of the urine of injected patients, what we attributed to the formation of very small and slightly aggregate Au Nanocrystals that could leave from the body. This NCs have to be small in order to be expelled through renal excretion. Next we studied the reduction of Au precursors by the metabolism of the healthy cell, and observed the formation of AuNCs inside the cell. Cytoplasmic conditions could lead to the formation of gold nanoparticles through the reduction of gold precursors due to their higher redox potential against cell environment. Both types of gold precursors (HAuCl₄ and ThioAu) were incubated in HeLa cells for 24h (detailed explanation in Experimental Section). Samples were chemically fixed (see Experimental Section) and subsequently characterized by Jeol 1010 TEM (Transmission Electron Microscope) and FEI Magellan 400L XHR SEM (Scanning Electron Microscope) used as STEM.

STEM characterization of HeLa cells incubated with HAuCl₄ precursor (250µM) for 24h. High-angular microscopy was used in order to obtain Z-contrast images in dark field (images in the right side).

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