Abstract

In the last decade, nanoparticles (NPs) and nanotechnology have caught the attention of the scientific community around the world and have emerged as a rapidly developing and fascinating field of research.

Our experimental study focuses on the evaluation of the impact of metallic nanoparticles (Fe_2O_3, SiO_2 and their mixture) on concentrations of iron, zinc and magnesium in the hepatopancreas of a bioaccumulator and bioindicator of pollution. The snail *Helix aspersa*, which is an excellent biological model for all toxicological studies.

This is done in the laboratory of animals exposed to increasing concentrations of iron oxide nanoparticles, silica dioxide and their mixture (500 µg/g, 1000 µg/g, 5000 µg/g, 10 000 µg/g and 15 000 µg/g) for 28 days in their diet.

Our results show that the presence of nanoparticles (Fe_2O_3, SiO_2 and their mixture) causes an increase in the internal concentrations of the three metallic elements : iron, zinc and magnesium in the hepatopancreas, this increase could be due to a part in the accumulation of iron after taking food contaminated by this element and secondly under the effect of oxidative stress induced by the application of these nanoscale molecules.

Key words : *Helix aspersa*, Nanoparticles, Nanoparticles of iron oxide, Nanoparticles of silica dioxide, Mixtures, Accumulation, Hepatopancreas.