As pristine [60]fullerene (C60) has been proved to be safe from the biological viewpoint by several independent teams from different countries,1 – 7 the promising biomedical applications of this unique molecule should now be thoroughly explored.

In a previous work we showed that pristine C60 can protect the liver in a dose dependent manner against free-radical damage on acute carbon tetrachloride intoxication in rats.1

We then hypothesized that the mechanism of this protection could be attributed to one of the following reasons:
1- the ability of C60 to scavenge large numbers of radicals;
2- its possible role as a decomposition catalyst for the O2-/H2O2 system;
3- the possible inhibition of cytochrome P450;
4- the possible inactivation of Kupffer cells by this fullerene.

After some new experiments performed in our laboratory showing that C60 can exert such protective effects at very low concentration (< 50 nM/g of rat liver), without Cyt P450 inhibition or Kupffer cell inactivation, the possible mechanisms of this protection will be discussed.

References