## Abstract

We showed previously that exposure of human lung **cells** (BEAS-2B) to TiO2 nanoparticles (nano-TiO2 ) produced micronuclei (MN) only when the final concentration of protein in the cell-culture medium was at least 1%. Nanoparticles localize in the liver; thus, we exposed human liver **cells** (HepG2) to nano-TiO2 and found the same requirement for MN induction. Nano-TiO2 also formed small agglomerates in medium containing as little as 1% protein and caused **cellular interaction** as measured by side scatter by flow cytometry and DNA damage (comet assay) in HepG2 **cells**. Nano-TiO2 also increased the activity of the inflammatory factor NFkB but not of AP1 in a reporter-gene HepG2 cell line. Suspension of nano-TiO2 in medium containing 0.1% protein was sufficient for induction of MN by the nanoparticles in either BEAS-2B or HepG2 **cells** as long the final concentration of protein in the cell-culture medium was at least 1%.