MUTAGENIC/GENOTOXIC EFFECT OF PM$_{0.5}$ COLLECTED IN FIVE ITALIAN TOWNS IN TWO SEASONS: RESULTS OF THE MAPEC STUDY

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- to evaluate the associations between air pollution and biomarkers of early biological effects in oral mucosa cells of 6-8 year old children recruited from first grade schools
- to propose a model for estimating the global risk of early biological effects due to air pollutants and other factors in school children
Aim: to evaluate children’s exposure to urban air pollution, investigating the mutagenic and genotoxic effect of PM$_{0.5}$ samples

PM$_{0.5}$ SCHOOLS

- PM in the school area, on the same days of biological samplings
- HiVol multistage cascade impactor (72 h) and glass fiber filters
- 2 season (winter 2014 and spring-summer 2015)
- Different fractions: 10.0-7.2, 7.2-3.0, 3.0-1.5, 1.5-0.95, 0.95-0.49, and <0.5 µm

Gravimetric analysis

Sample extraction (PM$_{0.5}$)

CHEMICAL ANALYSES

(Well, Nitro-PAHs...)

BIOLOGICAL ANALYSES

- COMET ASSAY (+/- Fpg)
- MICRONUCLEUS TEST
- CITOTOXICITY TEST
- Human cells
  - A549

AMES TEST

S. typhimurium

- Strain TA 98
- Strain TA 100
- Strain TA 98NR (+/- S9)
- Strain YG1021

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