

# Polycyclic Aromatic Hydrocarbon Levels and Mutagenic Activities of Organic Extracts from Airborne Particles in Santiago de Chile

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The levels of 16 polycyclic aromatic hydrocarbons (PAHs) in airborne particles were determined by high-pressure liquid chromatography (HPLC) in 97 samples collected in downtown Santiago de Chile. The mean annual concentration was 260 ng·m<sup>-3</sup> (range 71.80-1,345 ng·m<sup>-3</sup>). Six PAHs classified as carcinogenic by the WHO comprised 45% of the total PAHs. The annual mean concentration for benzo(a)pyrene was 18.25 ng·m<sup>-3</sup> (range 2.08-130.30 ng·m<sup>-3</sup>), much higher than reported levels for several European and American cities. Levels in the cold season were, on average, 2.87 times higher than in the hot season. Principal component analysis and Pearson correlation analysis were used to analyse the PAHs profiles. Organic extracts of particulate matter were examined by the Ames test using strain TA 98 ± S9 and all samples showed a very high mutagenic response both ± S9. The mutagenicity of the extracts was much higher than reported from studies in other countries. Earlier work with the strains TA 98 NR a