**Evaluation of the cytotoxic effect of lichens bioindicators of particulate matter, heavy metals and polycyclic aromatic hydrocarbons** **in Medellín**

Jaramillo-Ciro, Margarita María1,2\*; Molina-Pérez Francisco2\*

1 Universidad de San Buenaventura sede Medellín, 2 Universidad de Antioquia

The city of Medellín has serious air quality problems, which affects the environmental quality and public health of the region. The city quantifies the criteria air pollutants, however, the effect of pollutants on living beings or on people's health is not known. Therefore, it requires evaluations of the pollutant effect on living beings, especially highly toxic compounds such as heavy metals and polycyclic aromatic hydrocarbons.The aims of this research were to evaluate the concentration of heavy metals Cu, Pb, Ni, Hg, Cd, Cr, Zn in lichens, polycyclic aromatic hydrocarbons in particulate state, particulate matter less than 10 μm and their relationship with the toxic, cytotoxic and genotoxic effect on lichen species previously selected for their high level of tolerance. The selected species were *Hyperphyscia minor* and *Pyxine cocoes.* This evaluation was carried out through in situ tests in monitoring stations with different air quality and ex situ tests. The results show a toxic effect of the pollutants on the integrity of the membranes. Likewise, a decrease in total chlorophyll was evidenced in the monitoring stations with the greatest contamination and in which the concentration of heavy metals and polycyclic aromatic hydrocarbons was higher. We thank Miniciencias Colombia for funding this research