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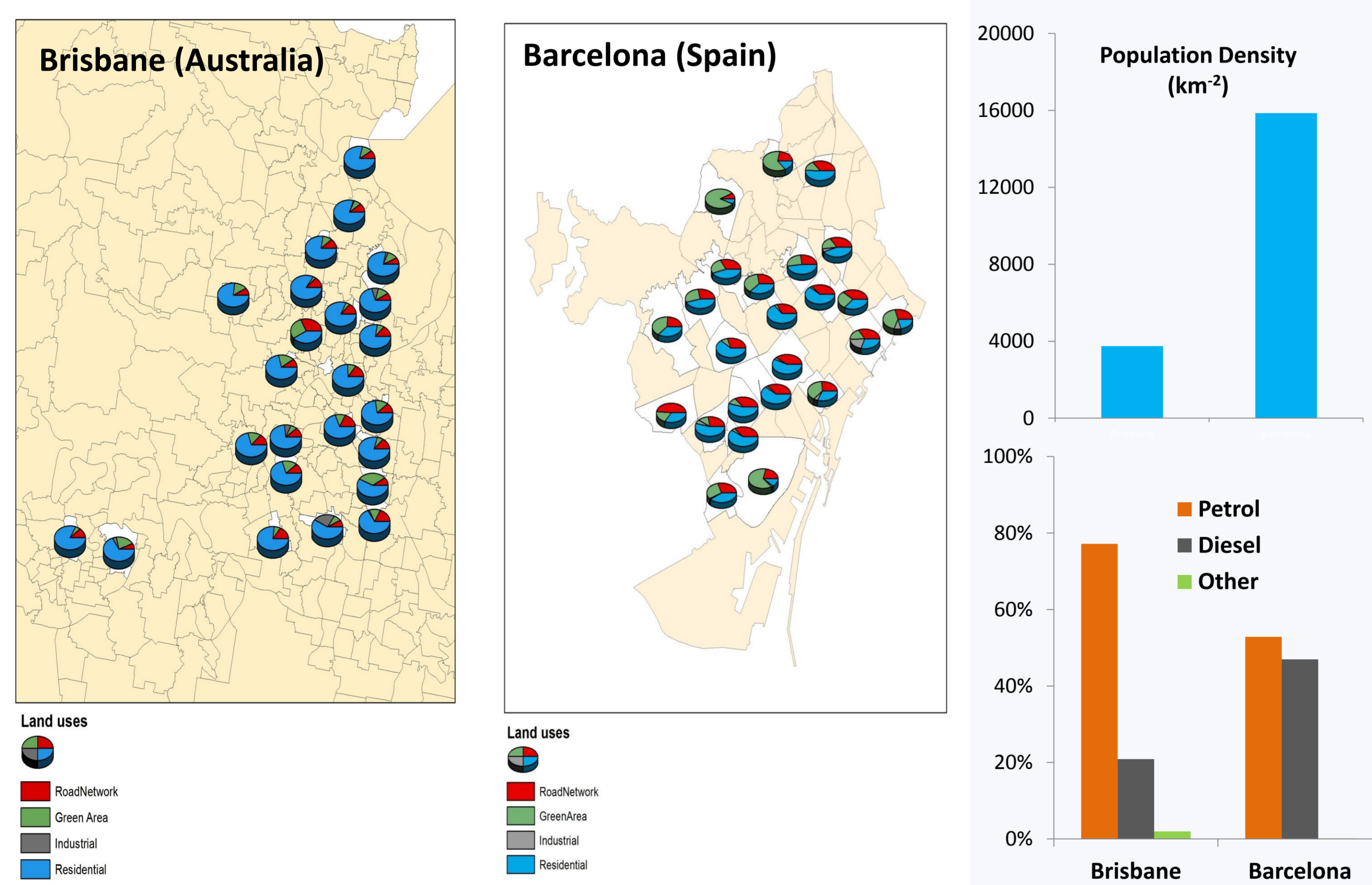
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## Aims

The aim of this work was to assess environmental factors driving ambient ultrafine particle number concentrations (PNC) at urban schools. The study areas were Brisbane in Australia and Barcelona in Spain (high insulation regions but with different urban characteristics). This poster presents the overall results in PNC modalities in the two cities.



**Figure.** General urban characteristics.

## Methods

This work used the available datasets within the frameworks of the *Ultrafine Particles from Traffic Emissions and Children's Health: UPTECH project in Brisbane (BNE), Australia* and *BRain dEvelopment and Air polluTion ultrafine particles in sCHool ChildrEn: BREATHE project in Barcelona (BCN), Spain*.

Analysis was based on classifying the schools as high and low traffic using the mean school-hour PNC during weekdays, and corresponding NO<sub>x</sub> (UPTECH) and NO<sub>2</sub> (BREATHE) concentrations (Wang et al. 2013).

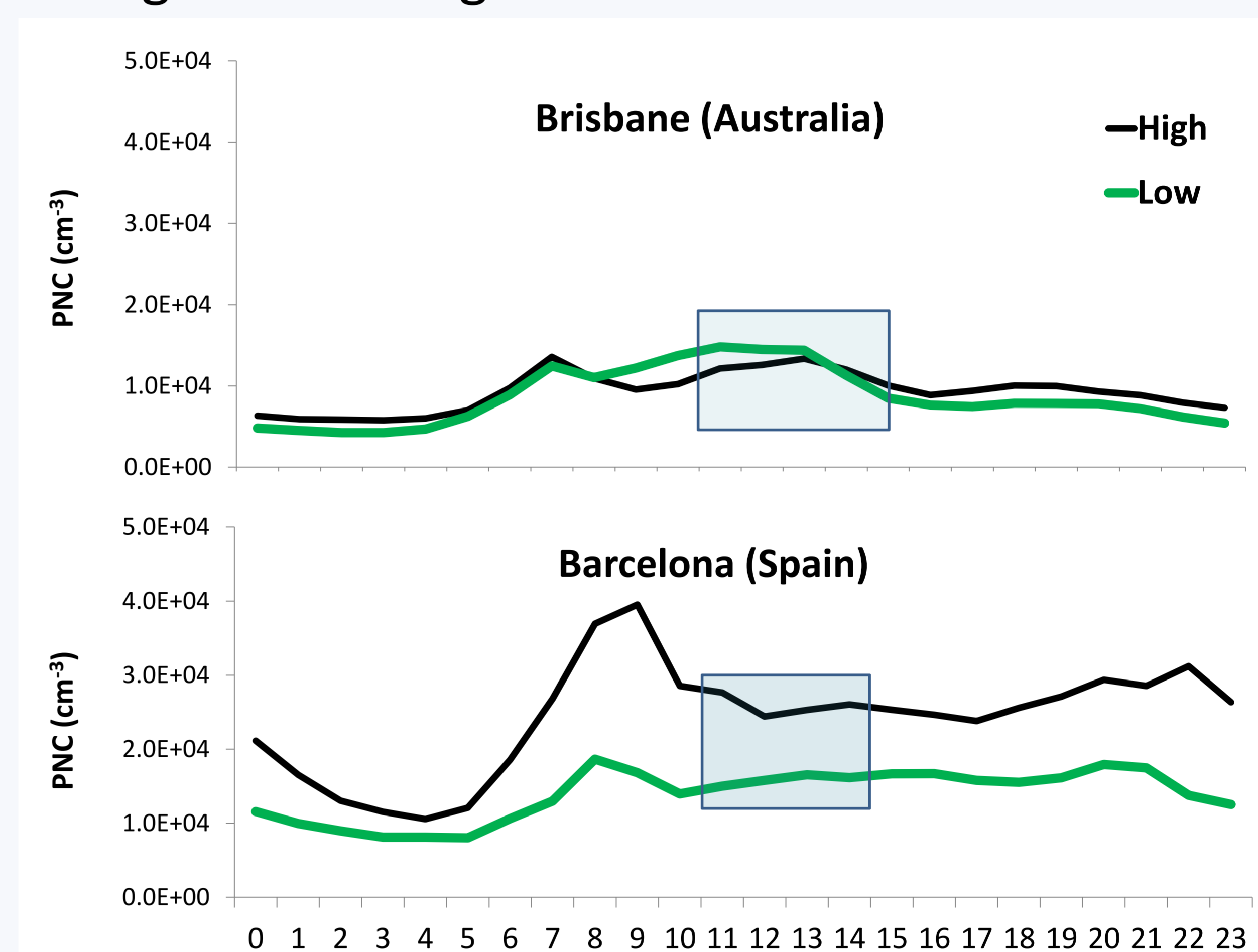
## Acknowledgement

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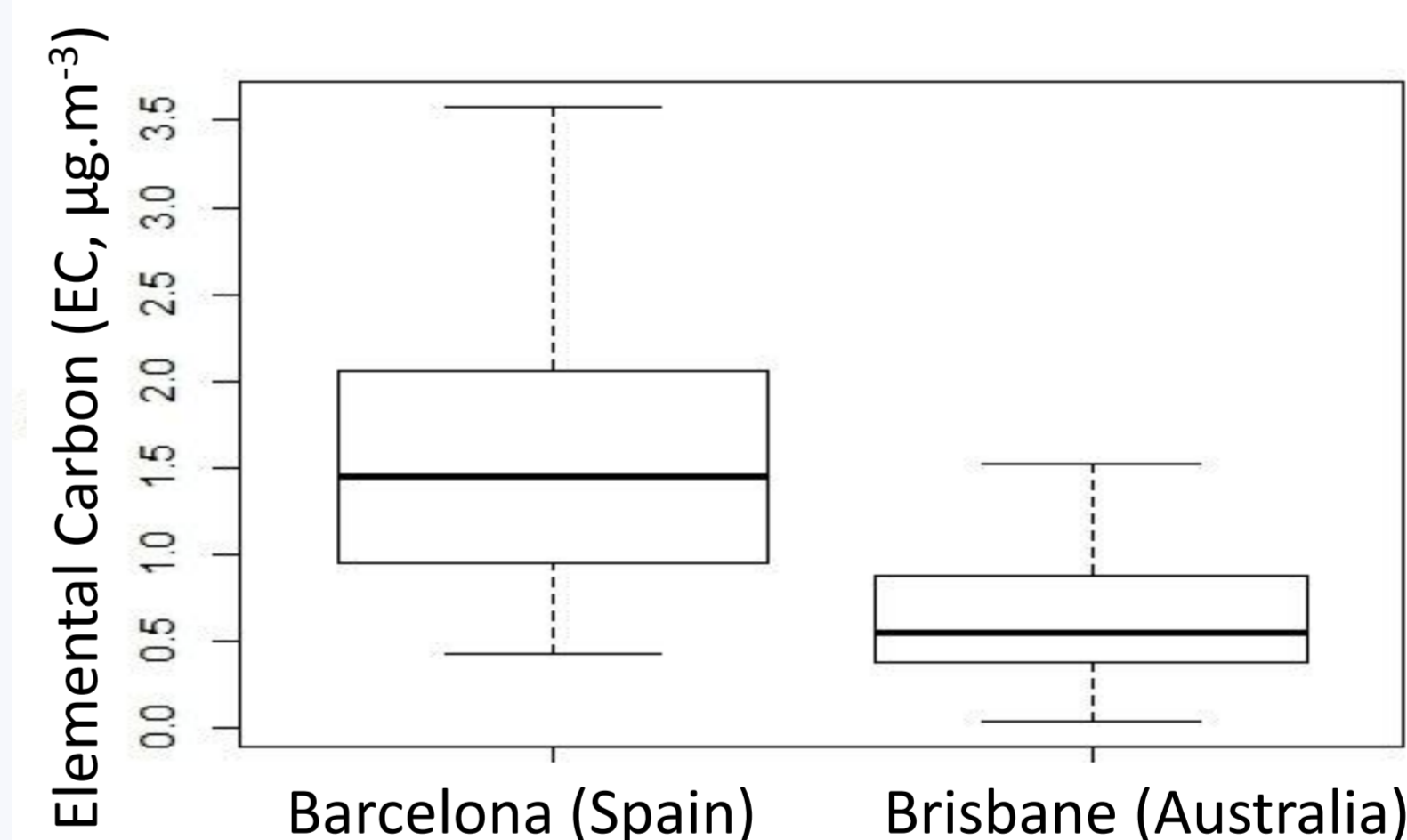
Wang et al. (2013) *Environ Sci Technol* 47(9): 4357-4364.  
Brines et al. (2015) *Atmos Chem Phys* 15(10): 5929-5945.

## Results

More than half of the UPTECH and BREATHE schools were classified as high traffic. Three modes were observed in the ambient PNC time-series, one during mid-day and the other two corresponding to the morning and evening traffic rush hours.



**Figure.** Mean daily cycles of ambient PNC for the high and low traffic schools.



**Figure.** Mean ambient EC concentrations over all the high traffic schools.

The dominant PNC modes for BCN corresponded with traffic rush hours, while mid-day peak was dominant for BNE. Mean school hours EC for high traffic schools were over 80% higher in BCN than BNE. Higher population and traffic density along with higher rate of diesel fuelled fleet in BCN might have resulted in condensation sink, subduing mid-day new particle formation (Brines et al. 2015).