Cite this as: Duriya FONGMOON, Surathat PONGNIKORN, Aphiruk CHAISENA, Sitthichai IAMSAARD , 2014. Particulate matters collected from ceramic factories in Lampang Province affecting rat lungs. *Journal of Zhejiang University-SCIENCE B (Biomedicine & Biotechnology),* **15**(1):75-83. [doi:10.1631/jzus.B1300058]

Particulate matters collected from ceramic factories in Lampang Province affecting rat lungs

泰国南邦省陶瓷厂细颗粒物对大鼠肺部的影响

Key words: Particulate matter (PM), Ceramic factory, Lampang Province, Rat lung

关键词：细颗粒物；陶瓷厂；泰国南邦省；大鼠肺部

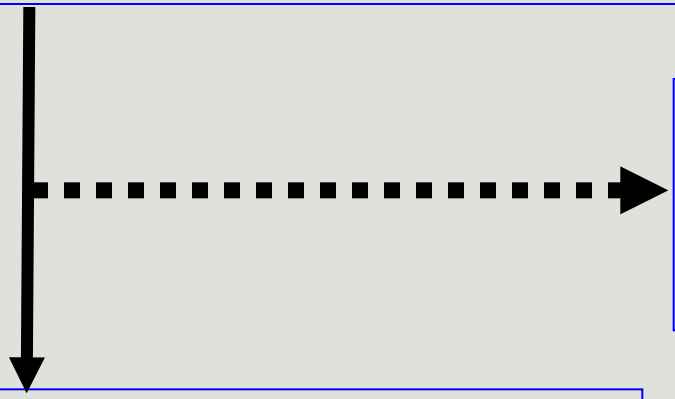
• Lampang is famous for its ceramic industry, where there are approximately 200 ceramic factories. The raw material utilized in the ceramic industry is kaolin, which can be easily distributed as forms of particulate matters (PMs) or dusts throughout the factories during the processing of ceramic wares.

• PMs can easily spread to all areas of the factories and the workers in the ceramic factories have a very high chance of being regularly exposed to PMs.

• It is possible that these particles can be accumulated throughout the respiratory system and thus cause increased hospital admissions for the workers, compared with other people who live near the factories, through chronic respiratory symptoms and lung diseases.

• In view of this situation, an attempt to examine the level of PMs in ceramic factories was made and its effects on gene mutation (bacterial model) and lung histology in rats were addressed.

Chemical elements of particulate matters are higher concentrations in manganese, magnesium, zinc, iron, potassium, calcium, and sodium



No mutagenicity in *Salmonella typhimurium*

Damaging the lung tissue of rats