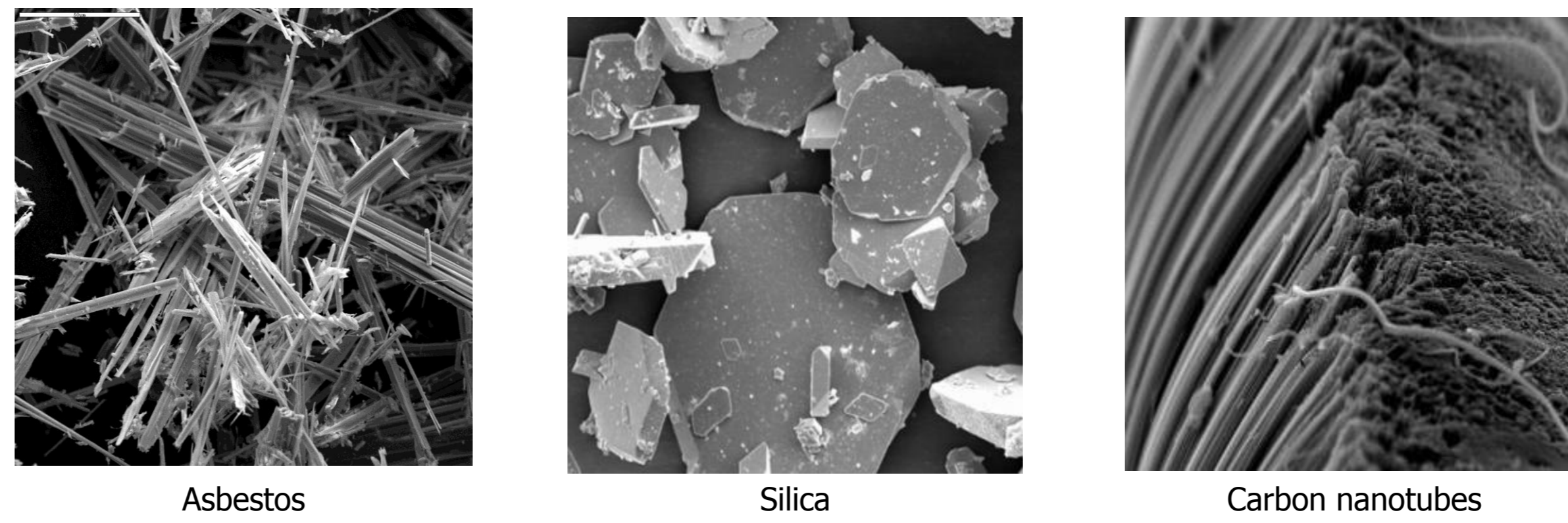


Experimental models of particle-induced lung inflammation, fibrosis and cancer :

« health benefits from basic discoveries »

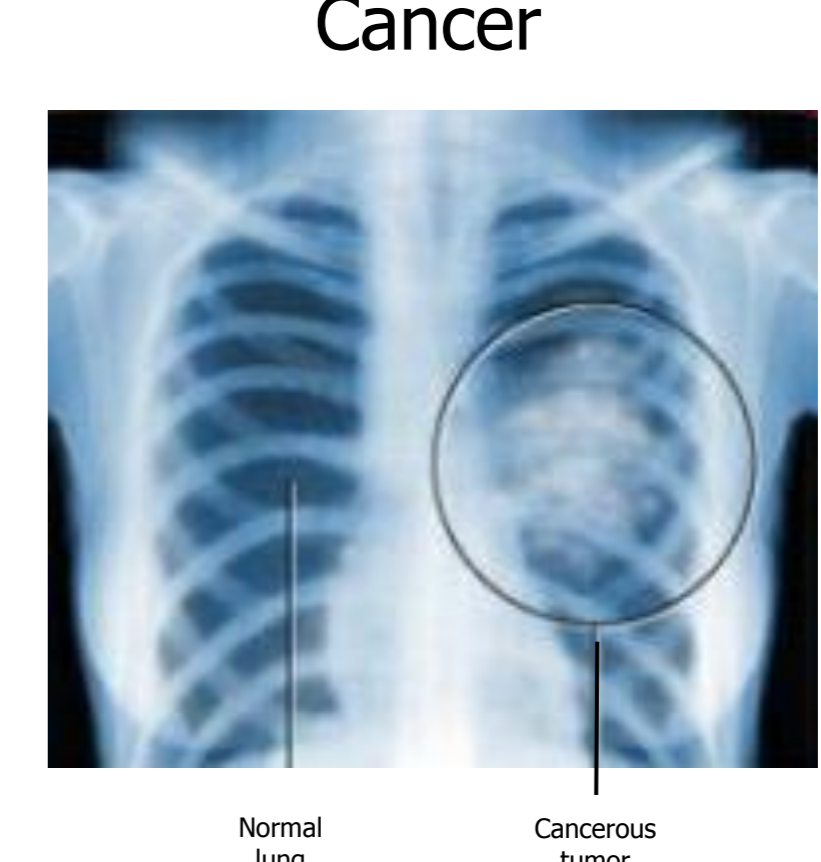
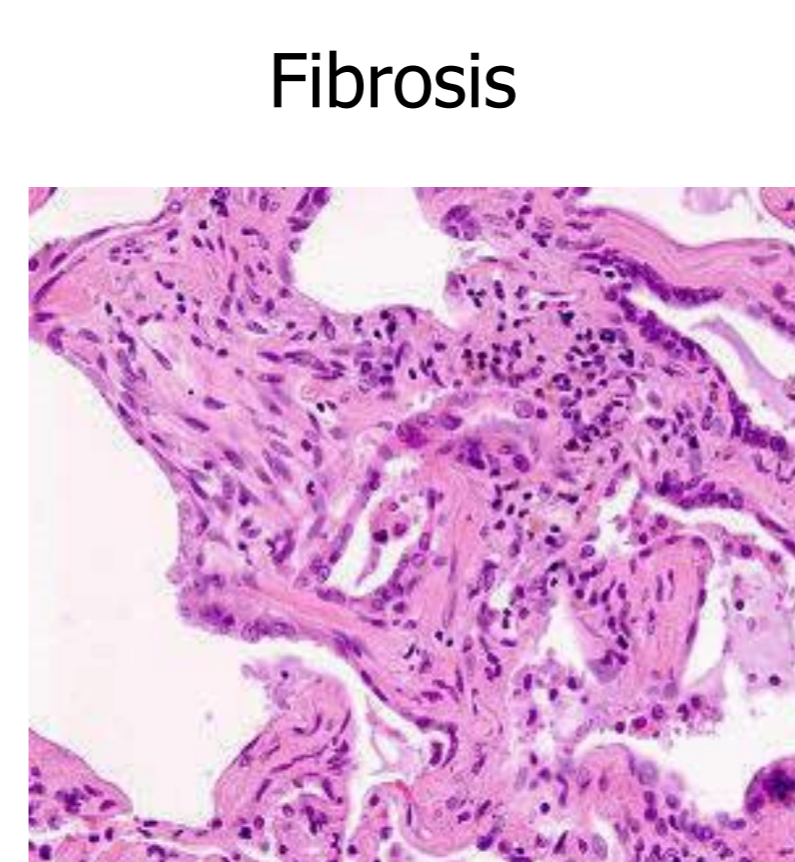
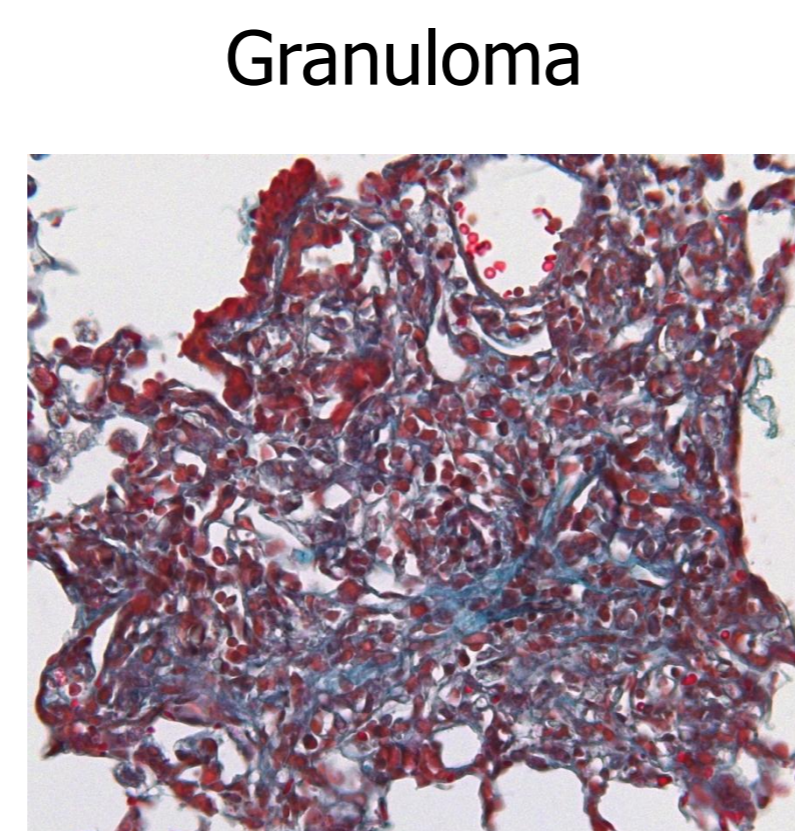
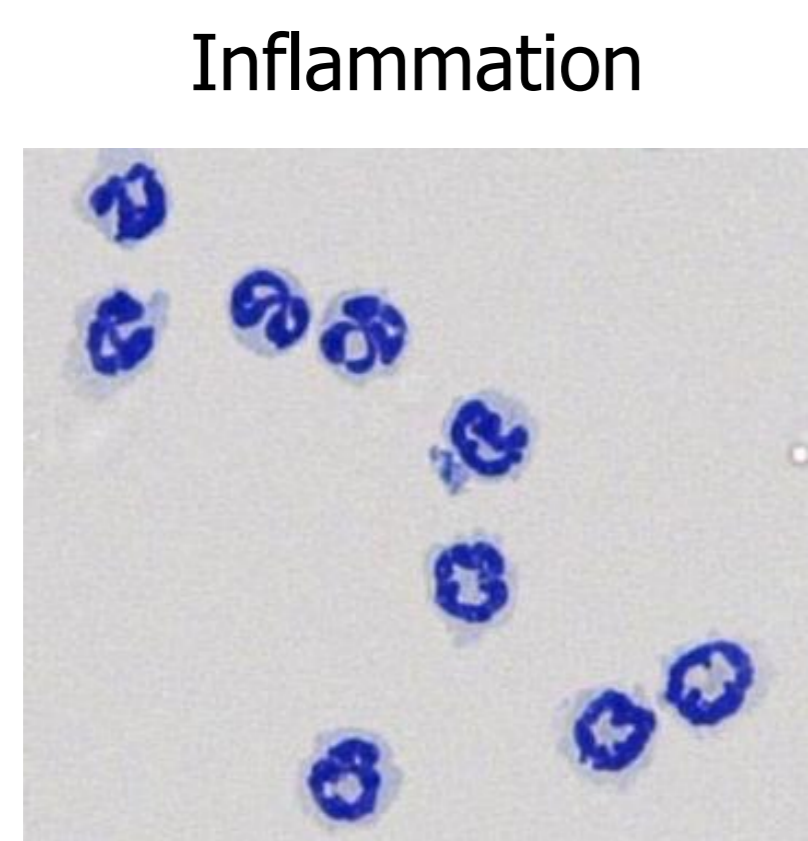
Context :

Chronic exposure to certain inhaled particles is associated with unbalanced immune responses which appear to play a crucial role in pathologies such as chronic inflammation, granuloma formation, lung fibrosis and cancer.



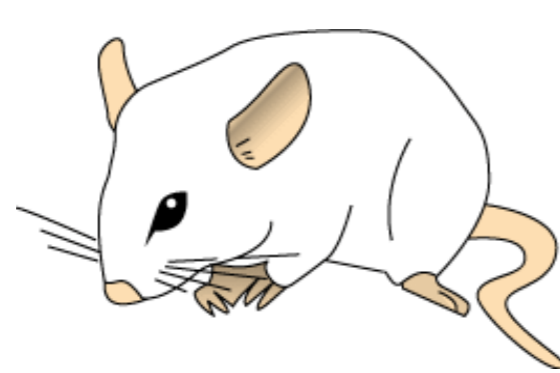
Objectives :

Studies on the basic mechanisms of particle-induced lung diseases contribute to: (a) the identification of biomarkers for monitoring exposure or lung disease activity, (b) the development of therapeutic interventions for lung disease and finally (c) the development and validation of *in vitro* and *in vivo* approaches for assessing the toxicity of new materials.

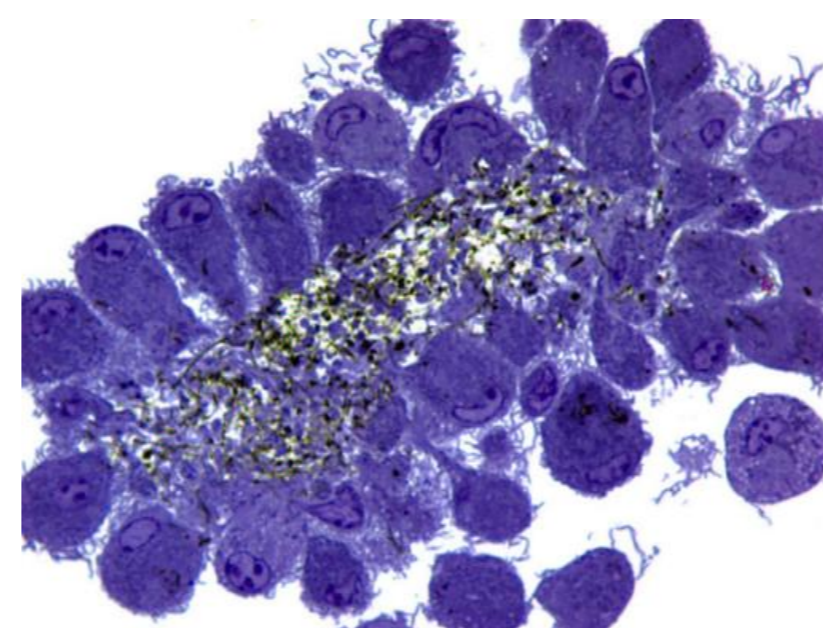


Model used :

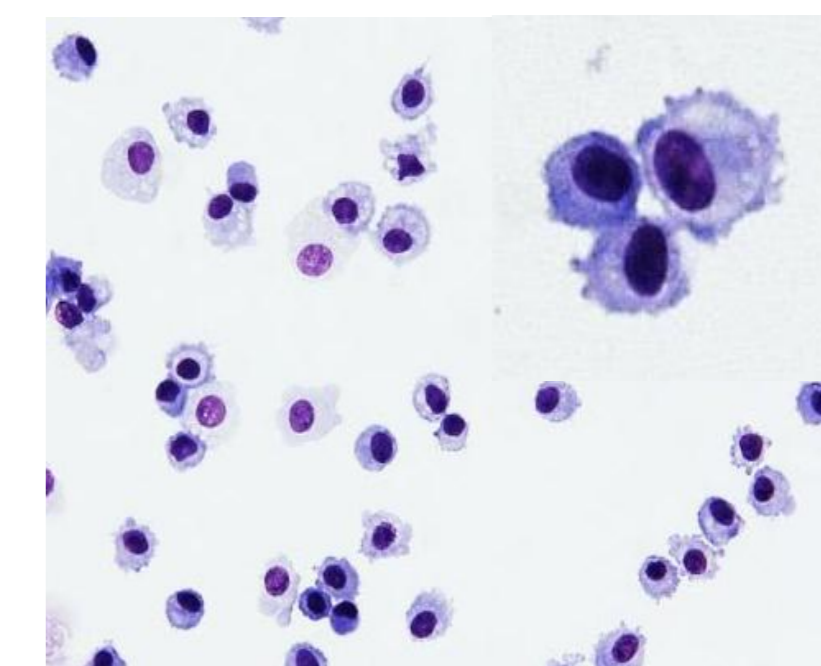
in vivo models



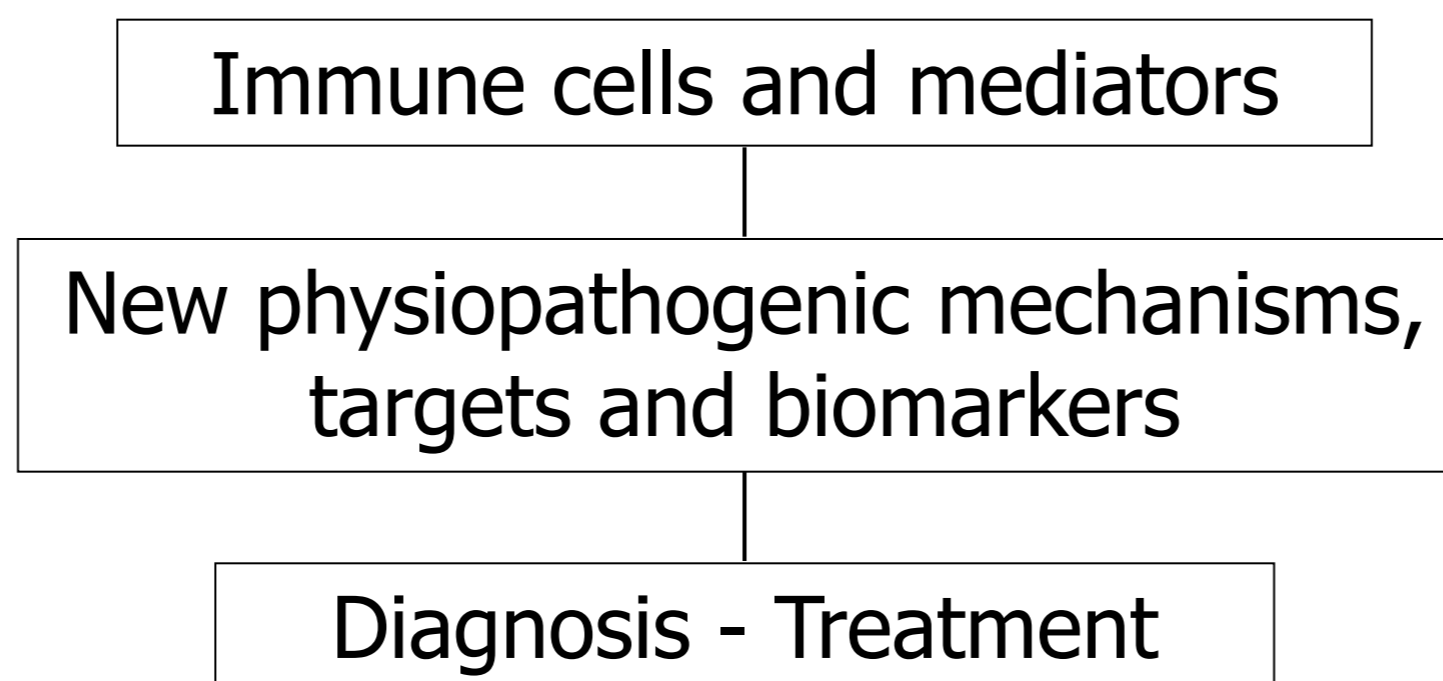
in vitro models : granulomas



in vitro models : cells



Experimental strategy :



Tools :



- Cellular purifications and cultures
- MACS & FACS methods
- *in vitro* & *in vivo* models
- Immunotoxicology

Mesothelioma (Implication of immunosuppressive responses in the pathogenesis of mesothelioma caused by asbestos and CNT) funded by the *Fondation contre le Cancer*.

PAP and Indium compounds (Toxicity of ITO particles and Indium compounds on macrophages. Why ITO induced Pulmonary Alveolar Proteinosis ?) funded by *UMICORE*.

Particle toxicity and immunosuppression (Implication of Myeloid Derived Suppressor Cells in the development of silica-induced experimental lung fibrosis) funded by the *FNRS*.

CD4 T lymphocytes in chronic inflammatory diseases (Study of T lymphocyte activation mechanisms by particles) funded by *Fédération Wallonie Bruxelles*.

RESOLVE (Impact of ageing processes on tissue fibrosis) funded by *FP7 European project*.



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