



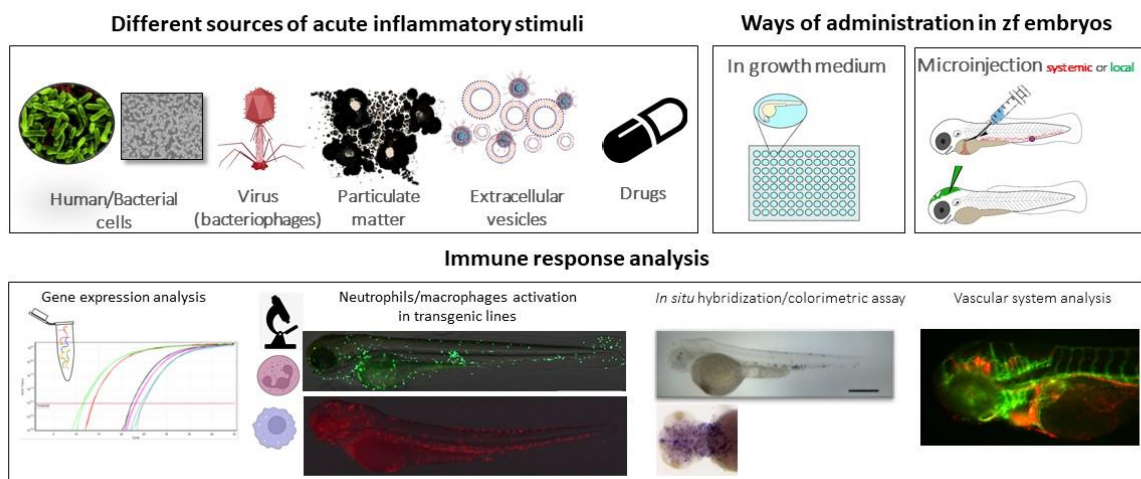
UNIVERSITÀ DEGLI STUDI DI MILANO



Doctorate program
Milan
EXPERIMENTAL
MEDICINE

Zebrafish as a tool to study the role of the innate immune system in the pathogenesis of human diseases and identify possible pharmacological treatments

In this project, using powerful zebrafish models of innate immunity, we propose the analyses of the acute inflammatory effects of compounds derived from different sources (i.e. human-derived extracellular vesicles (EVs), plant-derived EVs, bacterial EVs), drugs targeting a specific pathway such as chemotherapeutic or HDAC inhibitors, bacteria or virus, agents that can influence the environment. The compounds can be easily delivered in zebrafish embryos through direct administration in growth medium, systemic microinjection into the circulation or local microinjection in close location such as intramuscularly or in the hindbrain ventricle. The analyses will be done in wild-type embryos or in those mimicking a pathological condition (i.e. cystic fibrosis, Duchenne muscular dystrophy, altered innate immune response, adenosine deaminase deficiency, cancer). The read-out techniques will be live imaging of immune-cell reporter lines (i.e. macrophages, neutrophils, TNF α), *in situ* and immunofluorescence, RT-qPCR and western blot analyses.



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