Bachelor assignment crystal inflammation assay

For tracks Imaging and diagnostics, Bioengineering Technologies

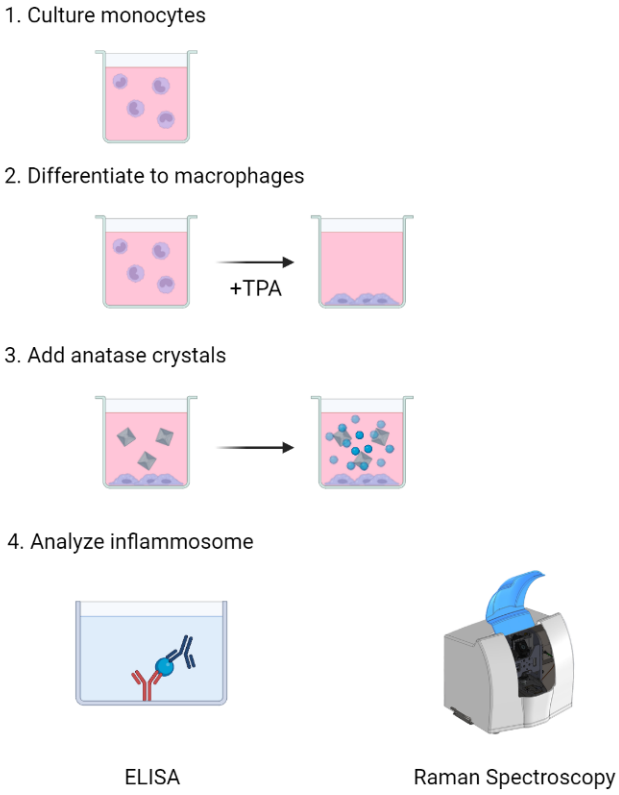
Introduction

Crystal-induced arthritis is a very painful rheumatic auto-inflammatory condition caused by the presence of crystals in the joints of patients. A classic example of these diseases is gout, which is caused by urate crystal deposits. In a collaboration project between the UT and clinical rheumatologists some new crystal types were discovered in joint fluid aspirates, including titanium dioxide nanoparticle anatase. Titanium dioxide is frequently used in prosthetic devices, and the possibility that these crystals might cause severe inflammation is concerning.

In this bachelors' assignment, you will investigate the inflammatory properties of anatase and other newly discovered joint fluid crystals. This can be used to assess the clinical importance of these crystals.

Methodology

In this project, cultured monocytes will be used as a model for joint fluid macrophages, who are the culprits of these inflammatory reactions. These cells will be subjected to crystals and the inflammatory reaction will be studied using ELISA and Raman spectroscopy.



Contact

If you want to know more about this project, please mail to t.niessink@utwente.nl or r.bansal@utwente.nl