

Topic: Identification of genes involved in the activity of a novel inhibitor of calcification process *in vitro* and *ex vivo*.

Description:

Vascular calcification is a common symptom of cardiovascular diseases which lead to 18 million deaths per year worldwide. Calcification is also associated to diseases such as Diabetes Mellitus Type 2 and chronic kidney disease. The high impact of calcification-related secondary diseases motivated us to look for mediators which effect this highly regulated process. The Institute of Molecular Cardiovascular Research has recently identified a very potent peptide inhibitor that suppresses the calcification process and thus minimizes systemic consequential damage to end organs. The inhibitory effect of the peptide has already been characterized in detail *in vitro*, *ex vivo* and *in vivo*. Smaller parts of the peptide have been tested to find the active site.

Further, our aim is to identify the molecular mechanism by which one of the smaller peptide inhibits calcification as a part of a bachelor's or master's thesis. This would include, but not limited to: cell culture work both with cells and aorta from rats, RNA isolation, real time PCR, histology, staining and analysis of results.

About us:

In our interdisciplinary team experts from the fields of molecular medicine, medicinal chemistry, chemical synthesis, bioinformatics and clinics work closely together. We offer you training in the use of modern molecular biological techniques as well as a pleasant working atmosphere.

Requirements:

Biologists / biotechnologists in the bachelor's /master's program, committed and independent as well as interested in theoretical and practical work.

Contact:

Please send your written application to Ms. Shruti Bhargava (sbhargava@ukaachen.de)

Start of work:

July 2020

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