

AIT Austrian Institute of Technology, the Austrian research institute with a European format which focuses on the key infrastructure issues of the future, is looking to strengthen its team with the immediate appointment of a

Diploma Thesis “Protein-chip-technology for improving Colon and Prostate Cancer diagnostic testing”

Aim of this project is to identify tumor autoantibody signatures and to develop a test which enables early identification of colon and prostate cancer patients. In cancer-patients tumor-autoantibodies (TAA), - autoantibodies against the cancerous tissue-, are present in serum. TAA profiles are highly potential markers for early diagnosis of cancer. However until today technical prerequisites performing an efficient marker screen were lacking.

Within recent work we have developed protein-microarray technology for defining tumor-markers. We will produce protein-chips using 16000 human cDNA expression clones and perform a candidate marker screen for identifying TAA profiles suitable for unequivocal distinction of healthy, malign and benign colon and prostate tumors. Tumor-marker screening will be performed with serum samples from a test set of 50 individuals per group and tumor entity (n=300). Then the reactive cDNA-clones of candidate tumor-markers will be used for production of targeted protein arrays. Validation of markers will be done using 100 serum samples per patient-group and tumor entity (n=600). Finally this project will generate a prototype-test suitable for clinical validation.

Work description :

- Protein-microarray-technology, bioinformatics, E.coli protein expression and isolation, standard molecular-biological techniques, tumor-marker screening

Requirements:

- Biotechnology, molecular biology (and related) students
- Experience in laboratory working

We are pleased to invite interested persons who wish to contribute their knowledge and their ideas to the field of applied research. Please attach meaningful application documents, including certificates and photos.

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