Emergent biomarkers in molecular biomedicine

Biomarker discovery is a basic part of diagnostics and therapeutics, constituting the basis for personalized/individualized medicine. Omics technologies have provided a deep insight into the differential expression of biomolecules acting as biomarkers for several important diseases. Recently, in addition to regular omics studies relying on protein/metabolite expression, novel biomarker sources have emerged as an important player in the future of theranostics, a combination of diagnostics and therapy. Posttranslational modifications of proteins, clustering of signaling molecules (cytokines) and circulating extracellular vesicles have shown a great potential to improve sensitivity, specificity and reliability of existing diagnostic tools for dysfunctions such as metabolic diseases and cancer. Overall, my presentation will show some examples of emergent biomarker sources for tick-borne infectious diseases.