

## Recent publications

Following you find a brief abstract of a scientific publication concerning LEUKOCARE's technologies. Please find the full text article at the given reference.

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### **Diagnostic accuracy of neutrophil-derived circulating free DNA (cf-DNA/NETs) for septic arthritis**

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The release of "neutrophil extracellular traps" (NETs) has been identified as a novel immune response in innate immunity. NETs are composed of neutrophil-derived circulating free DNA (cf-DNA) and neutrophil cytoplasm-derived proteins such as proteases. In this study, we analyzed the putative diagnostic value of synovial cf-DNA/NETs for identification of septic arthritis. Forty-two patients with a joint effusion who had undergone arthrocentesis were included. From synovial fluid, cf-DNA/NETs (j-cf-DNA) levels were directly quantified. Diagnostic value of j-cf-DNA was compared with white blood cells (WBC), synovial white blood cells (j-WBC), C-reactive protein (CRP), j-IL-6, j-TNF alpha, j-IL-1 beta, and myeloperoxidase (j-MPO). Sensitivity, specificity, positive and negative predictive value, as well as ROC-curves for each parameter were calculated. Synovial fluid cf-DNA/NETs values from patients with septic arthritis (3,286±386 ng/ml, n=9) were significantly increased compared to patients with noninfectious joint inflammation (1,040±208 ng/ml, n=17) or osteoarthritis (278±34 ng/ml, n=16, p<0.01). In conjunction with j-cf-DNA, j-IL-6 and j-IL-1 beta were significantly elevated (p<0.01), but WBC, CRP, and j-WBC were not. At a cut-off of 300 ng/ml, j-cf-DNA had a sensitivity of 0.89, a specificity of 1.0, a positive predictive value of 1.0, and a negative predictive value of 0.97. Receiver operation curves revealed largest areas under the curve for cf-DNA/NETs (0.933) and j-IL-6 (0.951). cf-DNA/NETs seem to be a valuable additional marker for the diagnosis of septic arthritis or periprosthetic infections. However, this result should be confirmed in a large clinical trial.