

ImmunoTools IT-Box-139 Award 2012



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The Role of Obesity in Osteoarthritis

Osteoarthritis (OA) is the most common type of arthritis in the world and affects millions of people. In UK alone, every year more than 140,000 hip and knee replacement are performed in order to reduce pain and improve quality of life. Among multiple risk factors of OA there is one still enigmatic feature: obesity. Obesity has become a critical global problem which affects both adults and children and is associated with numerous co-morbidities. The role of obesity has not been fully understood in relation to OA. Obesity itself is known as a chronic inflammatory state. The purpose of this project is to compare differences in: disease onset and possible mechanism of OA between obese and lean patients with the help of molecular markers. The attention of the project is focused mostly on four types of tissue: cartilage, bone, synovium and local adipose tissue fat pad received after knee replacement surgery. Infrapatellar fat pad (IPFP) that lies beneath the knee cap could be a possible local source of inflammatory mediators during OA. Examining the differences in cell populations in arthritic tissues from lean and fat patients, especially the differences in the influx of inflammatory cells such as macrophages, could be of great importance. Additionally other immune cells may be found in the adipose tissue such as lymphocyte T and B, natural killers and mast cells. It is possible that these cells can have an immunological influence on different signal pathways of OA in obese and lean patients. With the "ImmunoTools" antibodies we will fully characterize the immune cells (especially macrophages). Using antibodies mentioned below would help with proper identification of cell populations, although full scan of immune cells in adipose and synovial tissue would be very interesting. At present the immune profile is not normally examined in osteoarthritic patients. We consider that our results may show that should become routine.

ImmunoTools IT-Box-139 for Natalia Harasymowicz includes 100 antibodies

FITC - conjugated anti-human CD1a, CD3, CD4, CD5, CD6, CD7, CD8, CD14, CD15, CD16, CD19, CD21, CD25, CD29, CD35, CD36, CD41a, CD42b, CD45, CD45RA, CD45RB, CD45RO, CD49d, CD53, CD57, CD61, CD63, CD80, CD86, HLA-DR, IL-6, Control-IgG1, Control-IgG2a, Control-IgG2b, Annexin V

PE - conjugated anti-human CD3, CD4, CD8, CD11b, CD15, CD14, CD18, CD19, CD20, CD21, CD22, CD31, CD33, CD38, CD40, CD45, CD45RB, CD50, CD52, CD56, CD58, CD62p, CD72, CD95, CD105, CD147, CD177, CD235a, HLA-ABC, IL-6, Control-IgG1, Control-IgG2a, Control-IgG2b, Annexin V

PE/Dy647 -tandem conjugated anti-human CD3, CD4, CD8, CD14, CD19, CD20, CD25, CD54

APC -conjugated anti-human CD2, CD3, CD4, CD8, CD10, CD11a, CD11c, CD14, CD16, CD27, CD37, CD42b, CD44, CD45, CD59, CD62L, CD69, CD71, IL-6, Control-IgG1, Control-IgG2a, Control-IgG2b, Annexin V

[DETAILS](#)