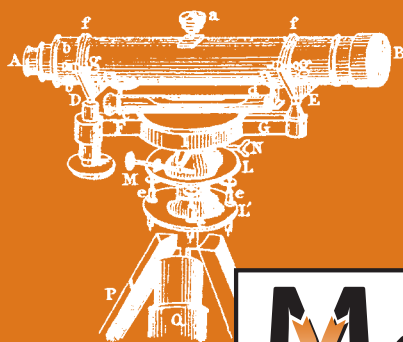
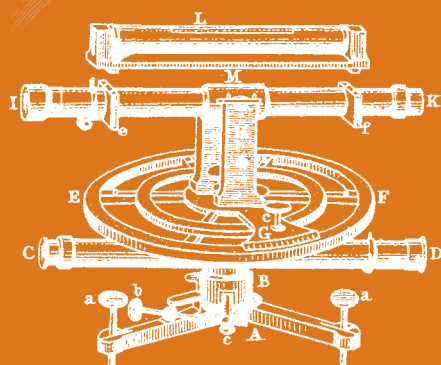




Peptidyl Arginine Deiminase (PAD) enzyme products

Introduction

PAD enzymes are transcriptional co-regulators that catalyze the calcium dependent conversion of specific arginine residues, present in for example histones and other proteins, to citrulline. In diseases such as Multiple Sclerosis and Rheumatoid Arthritis (RA) PAD enzymes seem to be deregulated. For instance in RA, these enzymes become active when they exit the cell in regions of joint inflammation where they subsequently deiminate arginine residues present in proteins such as vimentin and fibrinogen. The level of PAD activity has been correlated with RA severity.



ModiQuest
RESEARCH

Monoclonal Antibody Technology

Recombinant human and mouse PAD enzymes & antibodies

ModiQuest Research provides purified recombinant human and mouse Peptidyl Arginine Deiminase (PAD) enzymes for research applications. Antibodies recognizing deiminated peptides and proteins are also available.

PAD enzymes can be used for the deimination of cell lysates and proteins which will facilitate the proteomic analysis and identification of compounds that may be involved in the ontogeny of various autoimmune diseases like Rheumatoid Arthritis and Multiple Sclerosis. The different recombinant PAD enzymes available can be incorporated in the PAD enzyme activity assay described below (Fig. 1).

Specifications:

Recombinant human PAD enzymes available:

huPAD4 (cat # MQ-18.102)

huPAD3 (cat # MQ-18.103)

Recombinant mouse PAD enzymes available:

msPAD2 (cat # MQ-18.201)

msPAD4 (cat # MQ-18.202)

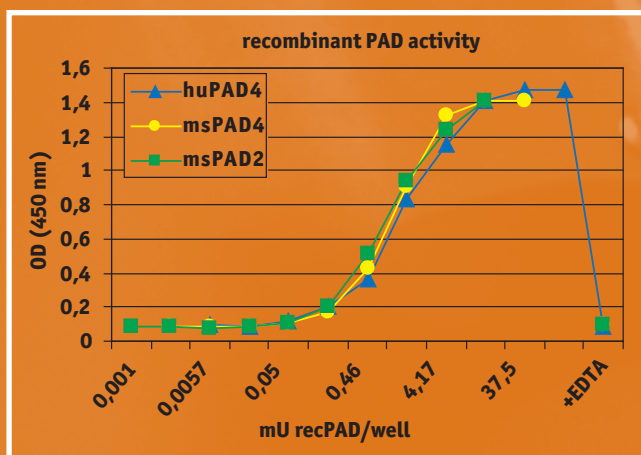


FIGURE 1

Increasing amounts of recombinant human or mouse PAD have been added to ABAP-plates coated with arginine containing peptides, resulting in the detection of increasing amounts of citrulline-peptides. Addition of EDTA abrogates PAD activity through the capture of calcium ions. (mU = milli Units)

Antibody Based Assay for Peptidyl Arginine Deiminase (PAD) activity determination (ABAP)

ModiQuest Research has developed a highly sensitive Antibody Based Assay to test for Peptidyl Arginine Deiminase (PAD) activity (ABAP). The ABAP is an Enzyme Linked-Immuno-Sorbent Assay (ELISA) for the determination of PAD enzyme activity in cell and tissue lysates (Fig. 2).

The ABAP test is also very suitable for determining PAD activity of purified recombinant PAD enzymes (Fig. 1) used in various bioassays.

The ModiQuest Research ABAP test is a powerful method to rapidly screen for PAD activity. Compared to currently used assays for PAD activity determination, such as the DAMO BAEE conversion test, the ModiQuest Research ABAP assay is more robust, and **at least 500 times more sensitive**.

Specifications:

The ABAP kit consists of:

- 1) 96-well plate coated with arginine containing peptides.
- 2) A ModiQuest Research mouse PAD enzyme for activity calibration.
- 3) a proprietary ModiQuest Research HRP-labelled monoclonal antibody specifically binding deiminated arginine containing peptides.

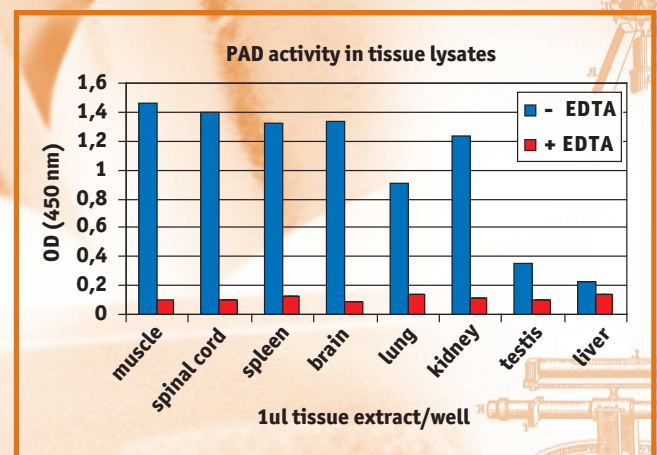


FIGURE 2

Detection of PAD activity in different mouse tissue samples. One microliter of tissue lysate was used in either a calcium-containing (- EDTA) or an EDTA-control (+ EDTA) reaction. PAD activities were monitored by standard ABAP procedures.