Technology Offer

Ref.-No. M1615

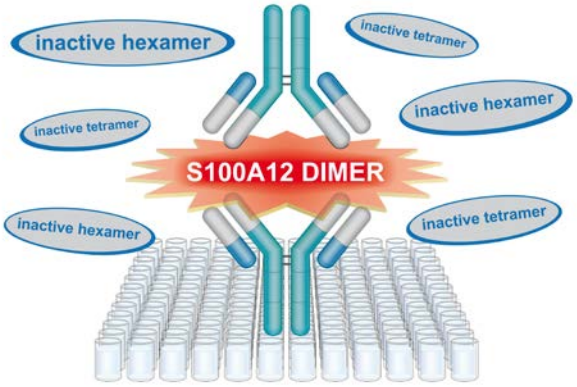
Complex-specific standardisation of immunological methods for the quantification of S100A12

Introduction

The calcium-binding protein S100A12 has been proposed as suitable and reliable biomarker to indicate the severity of certain inflammatory disease. In particular, in rheumatoid arthritis and inflammatory bowel disease in which biologics are often applied for therapy, these biomarkers are clearly superior to conventional laboratory parameters and clinical scores.
However, when using e.g. conventional S100A12-ELISAs for quantification of these proteins in biological samples, based on diverse antibody combinations, it currently cannot be differentiated whether the measured values represent the dimeric, tetrameric, or hexameric form of S100A12.
Accordingly, there is a need in the art for new means and methods which allow for a differentiation between S100A12 dimers and S100A12 tetramers or hexamers and an accurate detection of S100A12 dimers in a sample.

Invention

The present invention discloses for the first time that S100A12 dimers having at least one mutation in the high- or low-affinity calcium binding region or the zinc binding region of S100A12 are well suited standards for use in a method of detecting S100A12 dimers in a sample. This is so, because these S100A12 dimers are no longer able to tetramerize or hexamerize and thus particularly useful for the reliable evaluation of the amount of S100A12 dimers in biological samples (e.g. those obtained from the respective patients).
The present invention further relates to a method for the diagnosis and for evaluating the progression of an inflammatory disease in a patient suffering from an acute or chronic inflammatory disease.
Also a method for evaluating whether a subject may be of a risk to develop an inflammatory disease is comprised by the present invention.



Advantages of the invention

The method of the present invention provides a precise diagnostic tool for the detection of a disease associated with a clearly defined S100A12 dimeric standard. Moreover, this method would allow for the recognition of the structural state of S100A12 proteins in order to reflect reliably the progression of an acute and chronic inflammatory disease.
In particular, this method would allow for the exact quantification of the biologic active form of S100A12 complex.
Moreover, even the detection of subclinical residual activities of inflammation at an early inflammatory state would be possible

New aspects of the invention

The present invention provides a precise diagnostic tool for the detection of a disease associated with S100A12 dimers.

Patent situation

Patent applications have been filed in Europe and the USA.

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