



Technology Offer

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QUINOLINE-3-CARBOXAMIDE COMPOUNDS AND THEIR USE IN DIAGNOSIS

Introduction

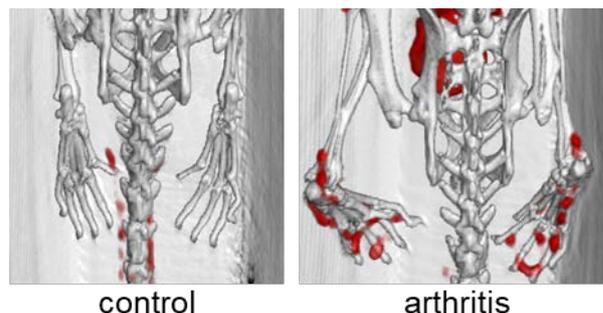
Uncontrolled inflammatory activation of the innate immune system plays an important role in infections, sepsis, septic shock, allergies, autoimmunity, as well as in cardiovascular diseases. Recently, so called danger-associated molecular pattern proteins (DAMPs) or alarmins as S100A8/S100A9 attracted attention. They represent endogenous danger signals inducing inflammatory responses after being released from activated or necrotic cells. They are expressed and released at local sites of inflammation in all disorders mentioned above.

Invention

The present invention provides quinoline-3-carboxamide compounds covalently linked to a label for use in the diagnosis of an inflammatory disease at local site. The above mentioned compounds can be used to detect or image accumulation of S100A9 in the body of a subject at sites of inflammation, using *in vivo* non-invasive molecular imaging techniques for the detection of said compounds. Accordingly, labeled quinoline-3-carboxamide compounds can be applied to evaluate the risk of a subject of developing an inflammatory disease and to follow the progress of the disease.

Patent situation

Patent application filed in Europe. Patent granted in USA.



Local expression of S100A9 in inflamed joints during experimental arthritis shown by *in vivo* single-photo-emission-computed tomography (SPECT) using ^{99m}Tc coupled S100A9 specific small ligand (^{99m}Tc-FEB054, 40-80 min post i.v. injection of 60 MBq).

Advantages of the invention

Method for evaluating whether a subject may be at risk of developing an inflammatory disease associated with phagocyte and/or epithelial cell activation and S100A9 accumulation. Method of monitoring or evaluating the progression of an inflammatory reaction in a patient.

New aspects of the invention

It was surprisingly found that quinoline-3-carboxamide compounds covalently linked to a label specifically bind to S100A9 and can thus be used for diagnosing inflammatory diseases with high molecular sensitivity.

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