

Prevotella copri and Enhanced Susceptibility to Arthritis

Published date: Aug. 3, 2017

Technology description

The inventors have described methods for the diagnosis and prognosis of Rheumatoid Arthritis (RA).

Technology Overview

RA is a chronic inflammatory disease that primarily affects the synovial joints. Roughly 1% of the Caucasian population is afflicted with the disease, which is more common in women than men. Most patients are diagnosed between 30-55 years of age, and the incidence of RA increases with age. Although the exact cause of the disease is unknown, certain genetic and infectious factors have been implicated. Soluble cytokines and chemokines, such as IL-1 β and TNF α , are also associated with RA. RA may manifest itself as a mild, self-limiting arthritis to rapidly progressing multi-system inflammation. RA is treated with non-steroidal anti-inflammatory drugs, disease-modifying anti-rheumatic drugs, steroids and analgesics.

The RA test measures rheumatoid factor – the IgM autoantibody reactive with the Fc region epitopes of the IgG molecule. However, these antibodies can be detected in normal healthy individuals, and hence have low disease specificity. New methods for the accurate diagnosis of RA are therefore urgently required.

Animal models have suggested a role for intestinal bacteria in supporting the systemic immune response required for joint inflammation. The inventors performed high throughput 16S and shotgun sequencing of samples from RA patients and controls and identified *Prevotella copri* (*P. copri*) as strongly correlated with disease in new onset RA (NORA) patients. The inventors also identified 17 unique *P. copri* open reading frames that correlated with disease. Colonization of mice showed that *P. copri* can dominate the intestinal microbiota resulting in an increased sensitivity to colitis and inflammatory arthritis.

Institution

[Cornell University](#)

Inventors

[Nicola Segata](#)

[Curtis Huttenhower](#)

[Steven Abramson](#)

[Andrew Sczesnak](#)

[Carles Ubeda](#)

[Eric Palmer](#)

[Randy Longman](#)

[Hannah Fehlner-Peach](#)

[Dan Littman](#)

[Jose Scher](#)

联系我们



叶先生

电 话 : 021-65679356

手 机 : 13414935137

邮 箱 : yeyingsheng@zf-ym.com