Combination Therapy of Immunomodulatory Peptides and a Chloroquine Derivative to Treat Rheumatoid Arthritis and Other Autoimmune Disorders

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BACKGROUND

Innate and adaptive immunity contributes to the pathogenesis of rheumatoid arthritis (RA) and other human autoimmune disorders by generating and maintaining inflammation, which leads to tissue damage. Recent therapies target innate immunity with a non-specific suppression of the immune system. This approach, albeit with remarkable effects, is limited by cost and side effects, due to a generalized immunosuppression and subsequent increased occurrence of infectious diseases. The real challenge in this field has been to evolve a novel therapeutic approach focused on immune tolerance rather than immune suppression.

TECHNOLOGY DESCRIPTION

This novel combination therapy uses both the previously known immunomodulatory peptide dnaJP1 (see also SD1993-268 and SD2002-051) with a chloroquine derivative (hydroxyl) chloroquine (HCQ) for the treatment of rheumatoid arthritis (RA) and other autoimmune disorders.

The mechanism of action exhibits surprising synergism with a significant clinical amelioration of RA (according to the American College for Rheumatology criteria of remission) in patients treated with the combined therapy compared to either drug alone.

The 15mer peptide dnaJP1, derived from a heat shock protein, was proven safe and effective in Phase I and has completed pilot Phase II in RA. The (hydroxyl)chloroquine (HCQ) is an anti-inflammatory agent and has been used for over a century for treating malaria.

The combined administration of the two drugs provides synergistic results unapproachable by administration of either alone.

ADVANTAGES

- Proven clinical signal efficacy in the treatment of rheumatoid arthritis.
- Significant highest clinical effect of the combined therapy compared to either drug alone.
- Potential combined therapy also for other autoimmune disorders, including juvenile idiopathic arthritis, inflammatory bowel disease, Crohn’s disease, multiple sclerosis, psoriatic arthritis, and psoriasis.
- Features a synergistic mechanism of action of (hydroxyl) chloroquine HCQ and dnaJP1 immunomodulatory peptide.
- Can be administered orally together or separately.

APPLICATIONS

RA is one of the commonest autoimmune diseases, affecting 1 percent of the population or 2.1 million Americans and over 21 million people worldwide (statistics from The Arthritis Foundation). The world-wide market was worth almost $8 billion in 2005 and has been growing at approximately 30% in the last couple of years (statistics from IMS Health).

INTELLECTUAL PROPERTY INFO

This technology is offered exclusively or nonexclusively in the U.S. and/or worldwide territories. PCT: WO/2007/143174.

PATENT STATUS

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OTHER INFORMATION

KEYWORDS

inflammation, rheumatoid arthritis, RA, autoimmunity, autoimmune, disease, combined, immunotherapy, dnaJP1, chloroquine, derivative, hydroxylchloroquine, HCQ

CATEGORIZED AS

- **Medical**
  - Disease: Autoimmune and Inflammation

RELATED CASES

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Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,707,284	07/18/2017	2006-256

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