Pregnancy Hormone-Containing Combination Products for the Continuous Treatment of Autoimmune Diseases

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OTHER INFORMATION

KEYWORDS

Autoimmune disease, sex hormones, Multiple sclerosis, rheumatoid arthritis, uveitis, myasthenia gravis, sjorgren's syndrome, lupus, hormone therapy

CATEGORIZED AS

- **Medical**
  - Disease: Autoimmune and Inflammation
  - New Chemical Entities, Drug Leads
  - Other
  - Therapeutics

RELATED CASES

2007-561-0, 1998-531-0, 2006-154-0, 2015-058-0, 2015-059-0, 2015-074-0, 2015-212-0, 2015-605-0

SUMMARY

UCLA researchers in the Departments of Neurology have discovered that the combination of certain pregnancy hormones can treat autoimmune disorders like multiple sclerosis.

BACKGROUND

During the reproductive ages, females are more inclined to suffer from autoimmune disease such as multiple sclerosis (MS) and rheumatoid arthritis. MS is a chronic and debilitating disease that affects the central nervous system. More than 1 million people worldwide are affected.Research suggests that steroid hormones or sex-linked gene inheritance may be responsible for the enhanced susceptibility of women to autoimmune diseases like MS. This is supported by observations of alternations in disease symptomatology with alterations in sex hormone levels such as during pregnancy.

INNOVATION

Researchers at UCLA discovered that continuous combination dosing of an estrogen with a gestagen can lead to decreased severity of disease in patients with MS. MS Patients treated for 6 months exhibited a decrease in the total volume and number of enhancing lesions as measured by MRI scans. Patients also had a significant decrease in the levels of IFN-γ expressed by T cells in the blood following treatment.This invention shows promise for patients suffering from autoimmune diseases.

APPLICATIONS

Treatment for autoimmune diseases

- Multiple sclerosis
- Rheumatoid arthritis
- Uveitis
- Myasthenia gravis
- Sjorgren’s syndrome
- Lupus

ADVANTAGES

Fewer side effects than other MS treatments, which are associated with flu-like symptoms, chest tightness, and local skin reactions

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,865,122	01/09/2024	2015-074
United States Of America	Issued Patent	10,821,117	11/03/2020	2015-074
United States Of America	Issued Patent	10,799,512	10/13/2020	2015-058
United States Of America	Issued Patent	10610535	04/07/2020	2006-154
United States Of America	Issued Patent	10,406,169	09/10/2019	2015-605
United States Of America	Issued Patent	9,452,175	09/27/2016	2007-561
United States Of America	Issued Patent	8,895,539	11/25/2014	2007-561

RELATED MATERIALS

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- Voskuhl, R. R., Wang, H., Wu, T. J., Sicotte, N. L., Nakamura, K., Kurth, F., ... & Cross, A. H. (2016). Estriol combined with glatiramer acetate for women with relapsing-remitting multiple sclerosis: a randomised, placebo-controlled, phase 2 trial. The Lancet Neurology, 15(1), 35-46.

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ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

▶ A Novel ER Beta Ligand Prodrug to Treat MS and Other Neurodegenerative Diseases

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