

Breakthrough in the study of Autoimmune Disease

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Diseases of the immune system such as multiple sclerosis, rheumatoid arthritis and psoriasis could be treated by a gas produced naturally by the body, scientists at the University have found.

Autoimmune disease occurs when a person's immune system attacks his own body. It is a major global health problem and it is vital that better treatment is found. Often these diseases are made worse by environmental pollutants, like car exhaust fumes and factory emissions, which contain chemicals such as Dioxin.

Nitric Oxide (NO), a gas which is produced in the body, is vital to a range of body functions including maintaining healthy blood pressure, neurotransmission and fighting infection.

It is now been found that Nitric Oxide could also be used as a new treatment of autoimmune disease.

Studies carried out in the Institute of Infection, Immunity and Inflammation, show that Nitric Oxide can stop the development and function of a type of white blood cell, known as TH17 which can attack the body tissue through excessive inflammation.

The study has been published in the *PNAS* journal.

Dr. Wanda Niedbala, who led an international team of scientists from Glasgow, Brazil and Japan, explained: "Nitric Oxide inhibits a molecule

called AHR (Aryl Hydrocarbon Receptor) in TH17 cells and inactivates these cells.

“Since AHR is a receptor for a range of environmental pollutants including Dioxin, this finding demonstrates that Nitric Oxide is a natural suppressor of autoimmune disease caused or exacerbated by environmental pollutants.”

“This finding could also have important clinical implications. Nitric Oxide donors which are used widely in clinical practice may also be used potentially to treat some of the [autoimmune diseases](#) caused by environmental pollutants,” added Professor Eddy Liew, co-author and director of the study.

More information: doi: 10.1073/pnas.1100667108

Provided by University of Glasgow

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