

New compound for the treatment of immune diseases

The CSIC, University of Seville and Academia Sinica have developed a new compound based on multiantennary glycolipid mimetics that can be used in the treatment or prevention of immune diseases caused by Th1/Th2 imbalance.

Industrial partners are being sought to collaborate through a patent license agreement or co-development.

An offer for Patent Licensing

Synthetic glycolipid as regulator of Th1/Th2 imbalance

Carbohydrates play crucial roles in the immune system function and the regulation of the immune response. A variety of natural carbohydrate-based immunomodulators have been clinically evaluated for applications ranging from cancer immunotherapy or vaccine adjuvants to the treatment of autoimmune diseases or infections.

However, carbohydrates obtained from natural sources are usually difficult to obtain in sufficient quantity, purity and homogeneity. Synthetic organic chemistry offers a more attractive approach to molecularly improved versions of these compounds. Among synthetic carbohydrate immunomodulators, glycolipids with agonist or antagonist activity for human invariant natural killer T cells (iNKT cells) define a family of candidates with high promise for clinical development. The prototypic synthetic iNKT cell antigen, α GalCer, bears limitations that hinder its therapeutic effectiveness.

Inventors of CSIC have synthesized a novel multiantennary glycolipid that is metabolically stable and can be selectively modified to optimize the immunomodulatory profile. This can set a new treatment for immune diseases caused by Th1/Th2 imbalance.



Vaccine

Main innovations and advantages

- The therapeutic composition of the invention acts as an immune response adjuvant and is capable of augmenting the immune response, or conversely as an immunosuppressor.
- The present invention provides a medicament such as a vaccine formulation or an anti-inflammatory agent containing the novel glycolipid mimetic, depending on the type of immune response (Th1 or Th2) elicited.
- Formulations according to this invention can be used in vaccines against infections agents (virus, bacteria, parasites) or in the treatment and/or prevention of inflammation-associated conditions such as autoimmune diseases, depending on the type of immune response (Th1 or Th2) elicited.

Patent Status

European patent application filed suitable for international extension

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