



Patent: The use of nanoparticles from noble metals as immunomodulators

Inventors: José Antonio Mejías Romero, Ana Paula Zaderenko Partida, Paula Margarita Castillo Hernández, David Pozo Pérez, Rafael Fernández-Montesinos, Pedro Pablo García-Luna and José Luís Pereira Cunill

Holders: Universidad Pablo de Olavide, Universidad de Sevilla and Fundación Progreso y Salud

Description

The present invention refers to the **use of immunomodulating effects by metallic nanoparticles functionalised with tiopronin**, as well as to an **immunomodulating composition for the treatment of pathologies mediated by Toll receptors**, constituting the main detection system of what is known as innate immunity, which is fundamental in recognising what is intrinsic and what is foreign in the human organism.



Need or problem solved

- The immunomodulating composition acts on the TLR2, TLR2/6, TLR3 and TLR9 receptors and is used for the **treatment of inflammatory pathologies** caused by:
 - Bacterial infections, particularly meningitis.
 - Overproduction of viral particles
- The immunomodulating composition can be used *ex vivo* in **immune-type cell therapies** where a cell transfer takes place.
- It can also be used as an **adjuvant in vaccination protocols**.

Innovative issues/Competitive advantages

The modulation of the responses induced by the activation of the Toll receptors, the main system for the detection of pathogens, is a **therapeutic target in infectious diseases, sepsis, inflammatory diseases and/or autoimmune diseases**, as well as in the **development of vaccines**.

Types of interested companies

- Companies in the chemical, biochemical and immunological sectors
- Pharmaceutical companies
- Companies performing clinical trials
- Research laboratories
- Biomedicine laboratories