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# Immunomodulation. Therapy of the Future in the Porcine Health

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**Introduction** The raising presence of infectious immunosuppressing agents, which cause primary and secondary processes, interferes with the capacity of response of the animals, favouring the appearance of secondary pathologies hard to solve. The current porcine production, management and housing systems drive to frequent situations of stress, with a known immunosuppressing effect. All this leads to situations that require to be analyzed with an approach that guarantees as much as possible the immune response of the pig. Thus it can be stated that a vaccine or an antiinfectious disables the pathogen's functionality or integrity inside the individual, and an immunomodulator restores the physiological capacity of recuperation of that individual.

**Preceding** Some Research centers started their studies with immunomodulators: inactivated cells of the genus *Propionibacterium* and Lipopolysaccharides coming from the wall of a non-pathogen strain of *Escherichia coli* and some inactivated virus (1,2,3,4,11).

**LPS:** Lipopolysaccharide of the cellular wall of the G-. One of the main factors of antigenicity. Consists of a nucleus, common to all the LPS, and a radical (lateral chains). These lateral chains differentiate among the LPS. LPS of the INMODULEN\* (IMD) has a short chain and comes from an apathogen strain of *E. Coli*. In the blood it is linked to a LBP (Lipopolisaccharide binding protein).

**Effects LPS. 1<sup>st</sup> way of action:** Similar to the whole LPS. Due to the universality of the molecule, superior organisms have developed response mechanisms against LPS in the whole cells of the immune system. These cells contain a specific receiver for the LPS: CD14. When activated, sets off the immune response. It is the substance with the highest capacity to

activate macrophages. **2<sup>nd</sup> way of action:** Lymphocytes B. It is a T-independent antigen.

## Propionibacterium spp

**Way of action:** Macrophages: captivated, degraded and presented in the membrane to lymphocytes T. IMD, with no cynetic pharmacology, does not present time of effect since it sets off a non-specific immune response's process that lasts so much depending on the individual.

## INMODULEN® CLINICAL EXPERIENCE.

We have appraised benefits with the application of the product in such varied fields as: Replacement sows – Adaptation to the new environment, Reproductive disorders, Ig-A increases in milk, Resistance to illness, Increase of the capacity of response against PRDC, Compatible, in vivo and in vitro, with Aujeszky and PRRS vaccination programs and enhance the immune homogeneity of the farm: Subpopulations. (5, 6, 7, 8, 9, 10).

\* Parenteral suspension containing LPS from non pathogenic *E coli* and inactivated cells from *Propionibacterium spp*.

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