

A good start in life...

Improving immune development in formula
fed infants with Lacprodan® OPN-10

Using infant formulas is second to breastfeeding,
a fact supported by WHO. This information is for
professional use only.



A good start in life...

Human milk contains several immune modulating factors, which protect the infant and secure development of the immature immune system. One of these components, osteopontin (OPN), influences the regulation of the innate and adaptive immune system.

In the innate immune system, OPN binds in a specific manner to bacteria and marks them for phagocytosis by immune cells. This means that OPN has an opsonising effect.

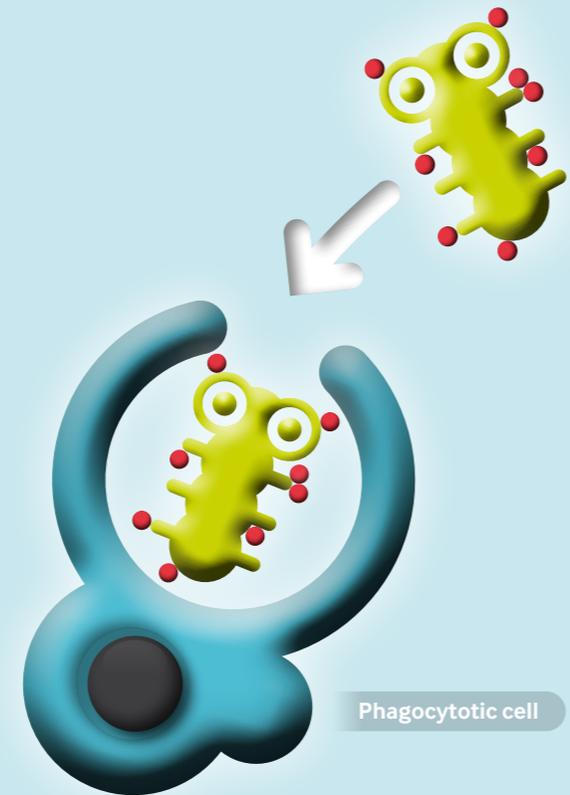
Infants are born with a Th2-skewed immune response, which differentiates towards a balanced Th1/Th2 profile as the immune system matures. Generation of a Th1 response is essential for the clearance of intracellular pathogens.

In the adaptive immune system, OPN supports immature dendritic cells in reaching maturity and migrating to lymph nodes. These dendritic cells process antigen material and present it to naive T-cells. Signals from dendritic cells activate the naive T-cells and determine the polarisation of T-cells to Th1 or Th2-type cytokines. The cytokine IL-12, expressed under the influence of OPN, causes T-cells to differentiate towards the Th1-type.

These mechanisms highlight the important role of OPN in infant immune system development.

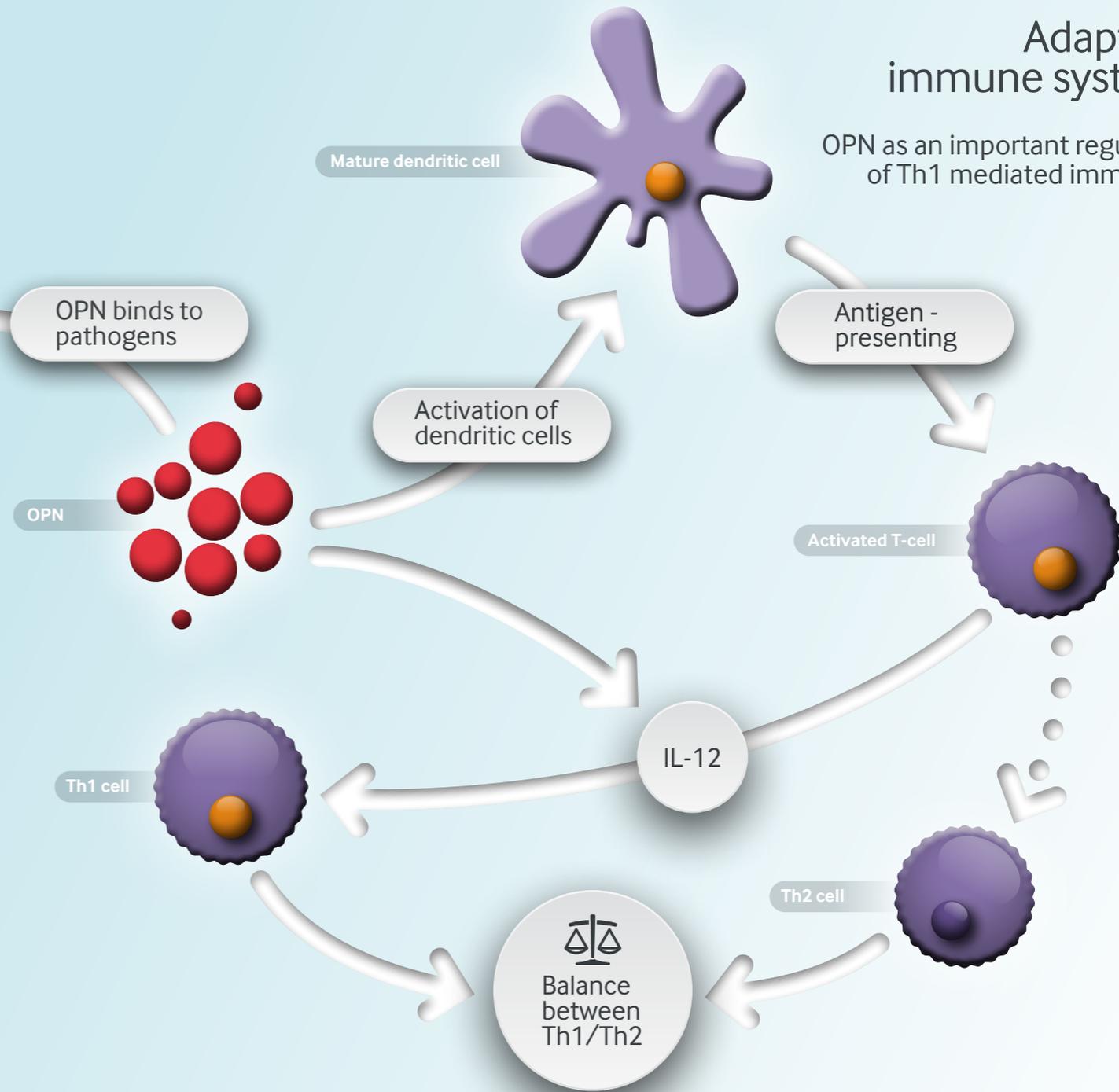
Innate immune system

OPN as an opsonin, marking the bacteria for removal by immune system cells



Adaptive immune system

OPN as an important regulator of Th1 mediated immunity





Quality starts here

Arla Foods Ingredients is a global leader in natural whey ingredients for nutritious food products. Our trademark is the quality we provide to our customers in every aspect of our offering.

Immune system

The immune system is an integrated network of cells, organs, tissues and proteins within an organism. It protects the organism against disease by identifying a variety of threats, including viruses, bacteria and parasites, and expelling them from the body's own tissue.

At birth, an infant's immune system is complete but immature. A newborn baby's immune system will be exposed to large numbers of microorganisms, viruses and foreign proteins which will develop and strengthen its powers of resistance. This process is supported by components in milk that help the infant via a number of advanced and complex biological mechanisms.

Arla Foods Ingredients Group P/S

Sønderhøj 10-12
8260 Viby J
Denmark
+45 89381000

www.arlafoodsingredients.com

