

Vitamin D found to fight placental infection

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In a paper available at the online site of the journal *Biology of Reproduction*, a team of UCLA researchers reports for the first time that vitamin D induces immune responses in placental tissues by stimulating production of the antimicrobial protein cathelicidin.

The study involved exposing cultured human trophoblast cells to the active form of vitamin D, leading to production of cathelicidin and an increased antibacterial response in the trophoblast cells.

The team, headed by Dr. Martin Hewison, suspects that the ability of the placenta to synthesize cathelicidin varies widely among women. Their discovery suggests that placental innate immunity can be enhanced if pregnant women supplement their diets with vitamin D.

Induction of cathelicidin production by vitamin D may help the placenta stave off infection by a variety of pathogenic organisms, including staphylococcus, streptococcus, and E. coli bacteria. Vitamin D may also enhance and sustain this bacterial killing by protecting placental trophoblast cells from infection-associated cell death.

The significance of vitamin D in human reproduction has been recognized for the past 20 years, although its exact role has not been completely understood. This study presents a new mechanism for activation of innate immune responses in the placenta to protect it from infectious bacteria and sheds new light on the possible role of vitamin D in pregnancy and pregnancy-associated infection.

Source: Society for the Study of Reproduction

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