

## Homeovitality “Restless Warrior”.



Use for:- Treating and protecting against infections of skin and tissue surfaces such as the urogenital tract and reproductive systems, providing protection against new-born bacterial infections because it is expressed in breast milk, Crohn's disease, leprosy, tuberculosis, cancer, AIDS.

All external, as well as internal body surfaces, which the immune system cannot reach, are continuously exposed to infectious agents such as harmful bacteria. DEFB1 is a very important bactericidal protein that forms the body's first line of defense against infectious agents. It is produced by cells in body surfaces such as skin. It has been shown to inhibit the infectivity of the AIDS virus and cause cancer cells to self-destruct.

May be used on a short term or long term basis depending on the condition being treated.

### What does DEFB1 do?

The “Restless Warrior” Homeovitality product is designed to target the DEFB1 gene. The defensin gene DEFB1 encodes a microbicidal peptide which is an important first line defence mechanism for all epithelial surfaces against bacteria and other infectious organisms, including those that cause tuberculosis and leprosy.

Epithelial tissue covers the whole surface of the body. It provides a protective covering or lining for all internal as well as external body surfaces. The skin is an important epithelial tissue.

DEFB1 is called the “Restless Warrior” because it is continuously expressed in skin cells, urinary and respiratory tract epithelial cells. Other expression sites include epithelial cells of the testis, gingival tissue, small intestine, cornea, mammary gland (1, 2) and particularly the female reproductive system (3). So, it plays a very important role in the protection of many parts of the body against entry of bacteria and other infectious agents. It works separately to the adaptive immune system.

It has recently been discovered that DEFB1 can also reduce the infectivity of the AIDS virus (see within Ref.1). Therefore, it is not surprising that DEFB1 deficiency leads to a wide range of infectious diseases.

DEFB1 has another important function; it is able to fight cancer. Scientists have shown that it can induce cancer cells to self-destruct (apoptosis). Many cancers are associated with diminished expression of DEFB1. Reduced expression of DEFB1 is one of the reasons why cancer cells may flourish.

Prof. Prado-Montes (1) has stated that DEFB1 has many applications in treatment of diseases caused or aggravated by defensin deficiency, such as a wide range of infectious diseases as well as Crohn's disease, lepromatous leprosy, tuberculosis and cancer.

1. Prado-Montes de Oca E. Molecules in focus. Human  $\alpha$ -defensin 1: A restless warrior against allergies, infections and cancer. *Int. J. Biochem. Cell Biol.* 2010; 42; 800.
2. Jia H P et al., Abundant human beta-defensin-1 expression in milk and mammary gland epithelium. *J. Pediat.* 2001;138; 109.
3. Valore E V et al., Human beta-defensin-1: an antimicrobial peptide of urogenital tissues. *J. Clin. Invest.* 1998;101; 1633.