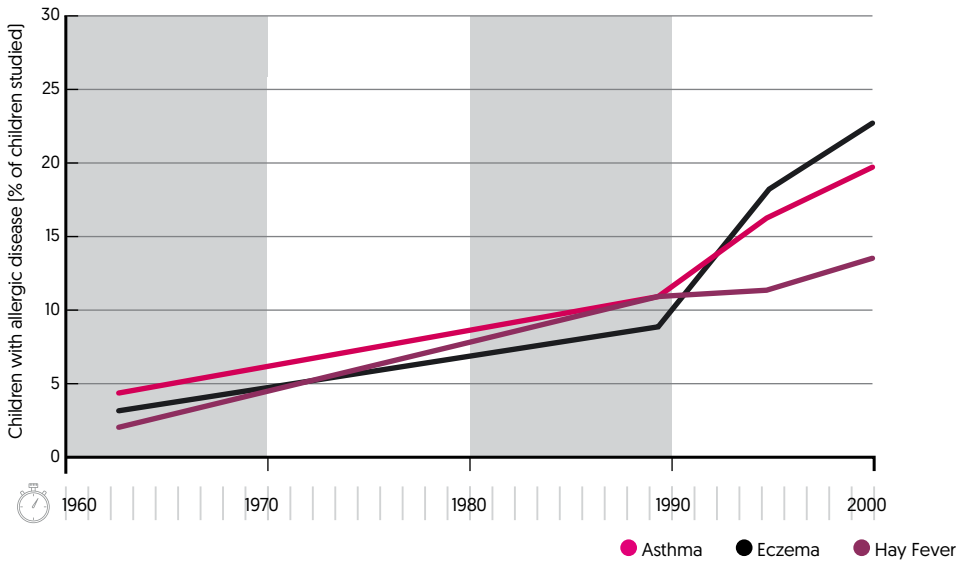
Ecologic® PANDA inside

Prevention of early-onset eczema

In Western societies, the prevalence of allergies is rising and is expected to grow even further (see figure 1). The World Allergy Organisation (WAO) reports that nowadays allergy affects more than 20% of the populations of most developed countries[1].

Figure 1: The past decades have shown an enormous increase in the prevalence of allergic diseases in Western societies.



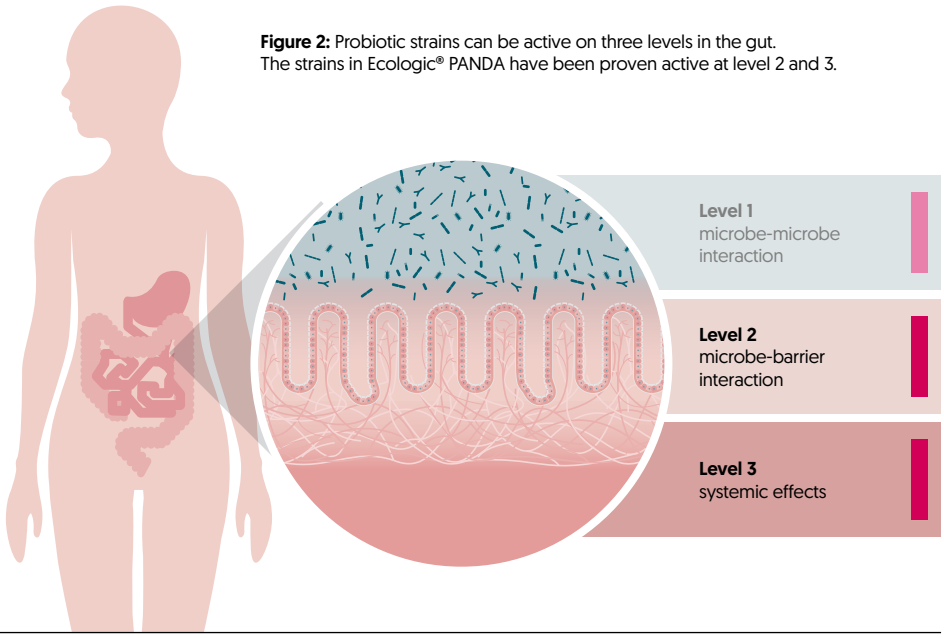
The major allergic diseases; eczema, asthma, hay fever and food allergy, affect not only quality of life, but also have an impact on the socio-economic welfare of society. This requires a preventive strategy to overcome these effects. An important role for the increase of allergies over de past decades is, according to the hygiene hypothesis, a decreased exposure to microbes early in life[2]. This hypothesis suggests that establishing a healthy intestinal microbiota early in life contributes to proper intestinal development and maturation of the immune system[3]. This relatively low or inappropriate microbial exposure could be a problem for the child's developing immune system and as such be responsible for the increasing prevalence of allergic diseases. Research has shown that the intestines of babies suffering from eczema shows a less diverse microbiota composition compared to the intestines of healthy babies[4]. Specifically selected probiotic strains could be a potential and safe approach to modulate immune responses and thereby preventing development of allergy/eczema[5]. The WAO also recommends probiotics to pregnant women and children at high risk for allergies[6].

Strain selection

Ecologic® PANDA is a multispecies probiotic formulation consisting of 4 specially selected probiotic strains. Probiotic strains can exert health effects at different levels in the gut (see figure 2). The bacterial strains of Ecologic® PANDA have been selected for their capacity to strengthen the intestinal barrier function (level 2), and influence the immune system (level 3). The strains have been screened for their capacity to:

- improve barrier function
- modulate production of immunosuppressive cytokines.

Figure 2: Probiotic strains can be active on three levels in the gut.
The strains in Ecologic® PANDA have been proven active at level 2 and 3.



Clinical evidence

Ecologic® PANDA has been tested in a randomized, double-blinded, placebo-controlled trial including 102 pregnant women who were at high risk of getting an allergic baby due to a positive family history (the PandA study). Subjects received either Ecologic® PANDA or a placebo, which was administered prenatally (in the diet during pregnancy 6-8 weeks prior to delivery) and postnatally (during the first 12 months of life to the child). **The results showed a significant reduction of eczema after 3 months in the babies receiving Ecologic® PANDA, and a sustainment of this effect until two years after birth[9]** (figure 3). Results substantiated previous research outcomes by showing that babies who did not develop eczema had a higher microbial diversity. All phases of the research that led to this formulation have been published in a PhD thesis[10].

The children in the PandA trial were followed till the age of 5 years. No long-term effects were found[11], which is in line with similar other studies. The researchers did find higher quantities of Ecologic® PANDA strains in microbiota samples during the intervention period, indicating good GI-survival of the bacterial strains[12]. Also, a possible mechanism for the explanation of the positive outcomes of the PandA trial was found. Higher concentrations of SCFAs were found in faecal samples of the children who received Ecologic® PANDA compared to the placebo group[13] (figure 4). The findings are in line with other studies that have shown the potential role of SCFAs in eczema[14,15].

Figure 3: Ecologic® PANDA shows a significant reduction of eczema development.
* Significant effect, $p<0.05$.

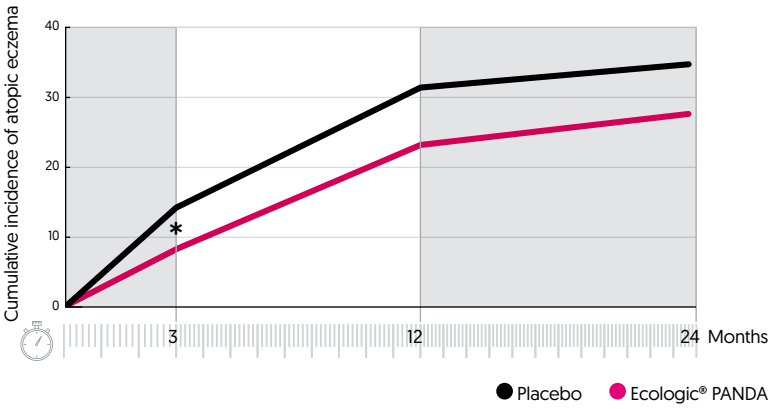
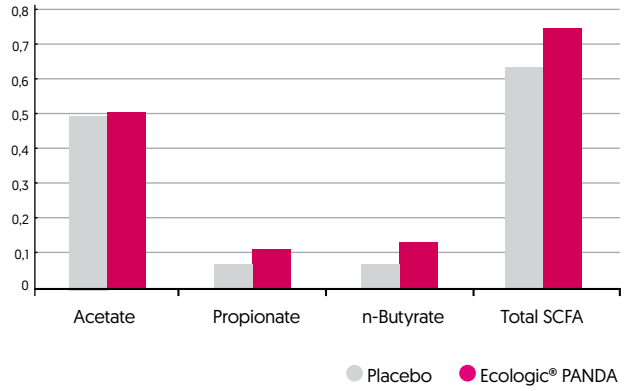


Figure 4: Faecal concentrations SCFAs by 3 months of age.



Formulation details

Indication	Prevention of eczema development.
Colony forming units (CFU)	1 x 10^9 CFU/gram.
Bacterial strains	*B. bifidum* W23 *B. lactis* W51 *B. lactis* W52 *Lc. lactis* W58
PROBIOACT® Technology	Protective and nutritional ingredients that improve the stability of the formulation, and GI survival and metabolic activity of the bacteria.
Recommended daily dosage	3 grams.
Treatment period	Pregnant women: start 6-8 weeks before delivery, new-born babies: first years of life.
Storage and stability	2 years stable at room temperature, no refrigeration needed.
Available dosage forms	Dry powder which can be supplied as bulk, sachets, capsules or fully packed (with your design).
Safety and Quality	All probiotic strains have the Qualified Presumption of Safety (QPS) status[16]. Winclove is a NSF International Certified GMP Facility for manufacturing dietary supplements and is ISO 22000:2005 certified for the development and production of pre- and probiotics.
Marketing	Medically endorsed under private label on a co-branding basis. Co-branding enables our business partners to use the scientific data in their marketing communication.

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