The systemic effects of bioactive peptides which are produced by the fermentation of milk via the microorganisms found in kefir have been the subject of interest in recent years. Bioactive peptides activate innate immunity by stimulating macrophages, increasing phagocytosis, augmenting NO and cytokine production and boosting the lumen levels of IgG and IgA+ B-lymphocytes. The aim of the present study was to determine the serum cytokine profiles of healthy volunteers after kefir consumption to evaluate helper T (TH) cell polarization and to bring out the effects on native and allergic immune responses. The study was designed as a prospective and self-controlled study. A total of 18 healthy volunteers (age range: 20-40 yrs, mean age: 35.5 ± 7.38 yrs) from a university hospital staff were recruited to the study, with the approval of ethical board and informed consent. The body mass indices of all participants were between normal range (20.10-25.70 kg/m2). After two weeks of a diet free from fermented products, the participants consumed 200 mL kefir daily, for six weeks. Kefir product was prepared by using kefir starter culture (Danisco Biolacta Sp - 05223B 10001, Poland) which contains Lactobacillus spp., Leuconostoc spp., Lactococcus lactis ssp. lactis and Streptococcus termophilus, an overnight incubation at 26°C, and consumed freshly. Fasting blood samples of subjects were collected just before kefir use (0th week), at the end of the 3rd and 6th weeks of kefir consumption, and three weeks after cessation of kefir usage (9th week). Serum TNF-α, IL-1, IL-5, IL-8 and TGF-β levels were measured by using commercial ELISA kits (BioSource, Belgium and Invitrogen, USA). Hemoglobin, serum creatinine and ALT levels of all subjects were also determined for follow-up. All volunteers completed the study period without any problem and declared no complaint. Hemoglobin, creatinine and ALT levels did not change with kefir consumption. Serum IL-8 levels were decreased at 3rd and 6th weeks (p< 0.001) and were at low levels at 9th week (p= 0.005) when compared with baseline levels (0th week). Serum IL-5 levels were increased at 3rd week (0th-3rd weeks; p= 0.01) and decreased by a rebound effect at 9th week (6th-9th week p= 0.003). TNF-α levels were increased with kefir consumption (p= 0.046) but the increase was insignificant in paired comparisons and the level was borderline between 0th and 6th weeks (p= 0.013). IL-5 and TNF-α levels returned to their original levels (0th week) at 9th week. Levels of the other cytokines (IL-1 and TGF-β) did not change significantly with kefir usage. These results indicated that kefir use increased polarization of the immune response towards TH1 type and decreased TH2 type response and accordingly allergic response. The decrease in IL-8 level due to kefir use, might control the inflammatory response by suppressing neutrophil chemotaxis and activation. On the other hand it was also concluded that increased IL-5 might stimulate secretory IgA at gastrointestinal mucosa leading to a more efficient immune response in the intestinal lumen.