Deteksi infeksi submikroskopis Ascaris lumbricoides dari feses anak (usia 5-18 tahun) pre dan post treatment albendazole 400 mg di Nangapanda, Ende menggunakan metode real time PCR = A real time pcr assay in detection submicroscopic infection of Ascaris lumbricoides from children faeces (5-18 years old) with pre and post treatment albendazole 400 mg in Nangapanda, Ende

Sendy Wulandhary, author

Abstrak

Ascaris lumbricoides termasuk kelompok nematoda usus yang dapat menimbulkan malnutrisi pada individu yang memiliki sistem imun lemah. Penelitian bertujuan untuk mendeteksi dan mengetahui persentase infeksi submikroskopis dari A. lumbricoides, dengan sampel feses anak usia 5-18 tahun di Nangapanda, menggunakan metode real-time PCR. Sampel feses dikoleksi selama dua kali, yaitu pre dan post treatment albendazole 400 mg. Total sampel yaitu 242, tetapi yang digunakan dengan uji real-time PCR hanya 45 sampel negatif secara mikroskopis. Sampel diisolasi kemudian dilakukan running realtime PCR. Primer yang digunakan berasal dari daerah target ITS-1. Daerah ITS-1 dipilih karena memiliki laju mutasi yang tinggi dan mampu menbedakan Ascaris dengan cacing lain. Real-time PCR mampu mendeteksi kuantitas DNA A. lumbricoides dalam jumlah yang sedikit. Deteksi sampel menggunakan realtime PCR menghasilkan kurva amplifikasi pada fluorophore VIC. Dua sampel (4,4%) pada pre treatment termasuk dalam low load of DNA (Ct > 35) dan lima sampel (11,4%) pada post treatment termasuk moderate load of DNA (30 < Ct < 35). Hasil penelitian menunjukkan bahwa real-time PCR dapat mendeteksi infeksi submikroskopis.

.....Ascaris lumbricoides is an intestinal nematode that can cause malnutrition, in the individual with weak immune system. The aim of this research is to detect and know the percentage of submicroscopic infection of A. lumbricoides, from human faecal samples (5-18 years) in Nangapanda by using real-time polymerase chain reaction (PCR) method. The faecal samples were collected in two times period, before and after treatment using 400 mg of Albendazole. Total samples were 242 but only 45 negative samples from microscopic detection were tested with realtime PCR. The samples were isolated and amplified with real-time PCR, by using primer from target area of internally transcribed spacer (ITS-1). ITS-1 region was chosen due to its high rate mutation and ability to differentiate Ascaris with the other helminth parasites. Real-time PCR can detect low load of A. lumbricoides DNA. Detection of samples with real-time PCR generated amplification curve in VIC fluorophore. Two samples (4.4%) in pre treatment were low load of DNA (Ct > 35) and five samples (11.4%) in post treatment were moderate load of DNA (30 < Ct < 35). The result showed that real-time PCR can detect submicroscopic infection of A. lumbricoides.</i>