

## **BIOLOGI INFEKSI *Schistosoma japonicum* PADA TIKUS WISTAR DI LABORATORIUM**

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### **INTISARI**

**Latar Belakang:** Schistosomiasis disebabkan oleh cacing *Schistosoma japonicum* yang bersifat zoonosis di Indonesia ditemukan di Sulawesi Tengah di tiga daerah yaitu dataran tinggi Napu, Lindu dan Bada. Para peneliti melakukan beberapa penelitian untuk mencari strategi pengendalian scistosomiasis, dimulai dengan pengendalian lingkungan, perkembangan perilaku pada manusia dan hewan serta pembuatan vaksin atau pemberian obat alternatif lain selain Praziquantel. Para peneliti menggunakan hewan model sebagai penelitian, salah satu hewan model yang sering digunakan dalam penelitian yaitu tikus.

**Tujuan:** Untuk mengetahui metode alternatif infeksi *S. japonicum* pada tikus Wistar yang terbaik di laboratotium, dengan indikator periode prepaten, jumlah cacing pada VPH dan VMS serta jumlah telur dalam feses.

**Metode:** Jenis penelitian ini adalah *Experimental* menggunakan rancangan *one-shot case study*. Penelitian ini terdiri dari 2 kelompok. Kelompok 1 mendapatkan perlakuan infeksi intraperitoneal dan kelompok ke-2 perkutan (lewat ekor). Observasi jumlah cacing pada VPH dan VMS serta telur dalam feses dilakukan pada minggu ke 2, 4, 6, 8, dan 10.

**Hasil:** Cacing dewasa *S. japonicum* ditemukan dalam VMS pada minggu ke-8 dan 10 pada tikus Wistar yang diinfeksi intraperitoneal, sedangkan pada perkutan (lewat ekor) belum ditemukan cacing dewasa *S. japonicum*. Telur *S. japonicum* ditemukan pada minggu ke-10 sebanyak 288 telur/gram feses pada tikus Wistar yang diinfeksi intraperitoneal, sedangkan perkutan (lewat ekor) belum ditemukan.

**Kesimpulan:** Periode prepaten *S. japonicum* pada tikus Wistar yang diinfeksi intraperitoneal 10 minggu, sedangkan pada perkutan (lewat ekor) belum diketahui. Jadi metode infeksi intraperitoneal pada tikus Wistar di laboratorium lebih baik dari pada perkutan (lewat ekor).

**Kata Kunci:** Perkutan (lewat ekor), Intraperitoneal, *Schistosoma japonicum*, VPH, VMS, dan Jumlah telur.

## BIOLOGICAL INFECTION OF *Schistosoma japonicum* IN WISTAR RATS IN LABORATORY

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### ABSTRACT

**Background:** Schistosomiasis caused by zoonotic *Schistosoma japonicum* worms in Indonesia is found in Central Sulawesi in three highland regions, called Napu, Lindu, and Bada. The researchers conducted several studies to look for strategies to control schistosomiasis, starting from environmental control, pattern development in humans and animals, to the making of vaccines or providing alternative drugs other than praziquantel. The researchers used animal models, in which one of the animal models which are often used in research are rats.

**Objectives:** To find out the best alternative method to infect Wistar rats with *S. japonicum* in the laboratory using prenatal period, number of worms in VPH and VMS, and number of eggs in feces as indicators.

**Methods:** The type of this research is *Experimental* using a *one-shot case study* design. This study consisted of 2 groups. Group 1 received intraperitoneal infection and group two received percutaneous infection (by tail). Observation of the numbers of worms in VPH and VMS as well as observation of the numbers of eggs in feces were carried out on 2nd, 4th, 6th, 8th, and 10th week..

**Results:** *Schistosoma japonicum* adult worms were found in VMS on 8th and 10th weeks in Wistar rats in intraperitoneal injection method-group, whereas *S. japonicum* adult worm was not found in percutaneous method-group (by tail). The eggs of *S. japonicum* were found on 10th week as many as 288 eggs/gram faeces in Wistar rats which were intraperitoneally infected, whereas in percutaneous method-group (by tail) no eggs were found.

**Conclusion:** Prepatent period of *S. japonicum* in Wistar rats which was intraperitoneally infected was 10 weeks, whereas in percutaneous method-group (via tail), the prepatent period was not known. It is concluded that the method of intraperitoneal infection in Wistar rats in the laboratory is better than percutaneous infection (by tail).

**Keywords:** Percutaneous (by tail), Intraperitoneal, *Schistosoma japonicum*, VPH, VMS, and number of eggs.