Schistosoma japonicum, Chinese Strain, Exposed Swiss Webster Mouse

Catalog No. NR-21969

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Contributor and Manufacturer:
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Product Description:
Flatworm Classification: Schistosomatidae, Schistosoma  
Species: Schistosoma japonicum  
Strain: Chinese  
Host: Mus musculus (mouse)  
Original Source: The Chinese strain of Schistosoma japonicum (S. japonicum) was isolated in 1928 from An-huei Province in China.  
Comment: The laboratory stock of the original Chinese strain of S. japonicum was later mixed with a second isolate from An-huei Province in 1977 to produce the current Chinese strain.¹

S. japonicum is a species of trematode worm which causes the chronic parasitic disease schistosomiasis in China and the Far East, in areas with poor sanitation that lack access to safe drinking water.²

Infection occurs through contact with larval-stage schistosomes (cercariae) that are released by freshwater snails. Upon exposure to infested water, these larvae penetrate human skin and travel through blood vessels to the liver where they mature. Mature S. japonicum parasites deposit eggs in the intestine. Some of these eggs are then passed through human feces into water to re-infect the snail host and continue the parasite’s life cycle. Schistosome eggs that remain in the human body cause an immune response and damage to internal organs. S. japonicum is the most infectious and pathogenic of the three species of schistosomes known to cause schistosomiasis, due to the large number of eggs that it produces.³

Collection of Schistosoma miracidia:
1. Euthanize mouse by intraperitoneal injection of 0.3 mL sodium pentobarbital (65 mg/mL) with heparin (10000 units/mL).  
2. Remove liver and small and large intestines. Rinse tissues in 1.2% NaCl. If using intestines, remove and wash with 1.2% NaCl repeatedly.  
3. Blend liver/intestines in filtered tap water that has been aerated for 2 to 3 days (conditioned water) for 20 seconds in a Waring blender. Centrifuge homogenate for 5 minutes (300 x g) at room temperature.  
4. Pour off supernatant. Add 5 mL conditioned water and shake tube vigorously for several seconds. Dilute suspension at least 100-fold in conditioned water. For optimal hatching, use conditioned water between 26°C and 28°C.  
5. Place suspension in darkened side-arm flask. Make sure that water fills the unpainted sidearm.  
6. Direct a light source at exposed unpainted part of side arm. Miracidia will swim to this area after hatching and collect within the unpainted side arm within 10 to 20 minutes.  
7. Remove miracidia from the side arm using a fine-tipped Pasteur pipette and place in a Petri dish that contains conditioned water.

Citation:
Acknowledgment for publications should read “The following reagent was obtained through BEI Resources, NIAID, NIH: Schistosoma japonicum, Chinese Strain, Exposed Swiss Webster Mice, NR-21969”.

Biosafety Level: 1

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References:
1. F. A. Lewis, Personal Communication.

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