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PEOPLE'S REPUBLIC OF CHINA**

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**Detection of intestinal helminths - The Kato-Katz method
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

1 Scope

This standard specifies the operating procedure for the detection of intestinal worms by the modified Kato thick smear method.

This standard is applicable to the detection of worm eggs in human feces by disease prevention and control institutions and medical institutions at all levels.

2 Terms and definitions

The following terms and definitions apply to this standard.

Modified Kato Thick Smear Method A kind of fecal worm that is transparent to the fecal sample through filtration, quantitative plate sampling, and hydrophilic transparent cellophane soaked in glycerin Qualitative and quantitative detection methods of eggs.

Number of eggs per gram of feces the number of eggs of a certain parasite in 1g of feces is an indicator of the intensity of infection.

Intestinal worms

Multicellular invertebrates that parasitize in the human intestines with the help of muscle contraction and creep movement

3 Equipment

Biological microscope and micrometer.

4.1 Reagents

Composition and preparation of clear liquid. 100ml of pure glycerin, 1ml of 3% malachite green (or methylene blue) aqueous solution and 100ml of distilled water Prepared.

4.2.1 Plastic quantitative plate

The specification is 30mmx40mmx1mm, the central hole is truncated cone shape, the upper bottom radius is 3mm, the lower bottom radius is 4mm, the height is 1mm, and the volume is 38.75mm³.

4.2.2 Scraper

60mm x 6mm x 2mm, one end is flat, the other end is a beveled surface, the beveled surface is 8.23mm long.

4.2.3 Nylon silk

80 mesh, that is, the number of sieve holes per inch (25.4mm) length is 80, cut into 8cmx8cm size.

4.2.4 Hydrophilic transparent cellophane

40μm thick, cut into 25mmx40mm size, soak in clear liquid for more than 24h before use.

4.2.5 Slides

76.2mm x 25.4mm x 1mm.

5.1 Sample collection

The test sample is fresh stool. Collect about 30g of the subject's feces and store them in a wide-mouthed, leak-proof, closed container.

Mark the subject's basic information (name, number, date of delivery) on the outside of the container. The collected samples should be sent for inspection within 24h, If it is not detected in time, it should be stored at 4°C.

5.2 Improved Kato Thick Sheet Production

5.2.1

Take a clean glass slide and mark one end with the sample number. Place the plastic quantitative plate on the middle of the glass slide with the small hole facing up.

5.2.2

Lay the nylon silk flat on the feces and spread it out. Use a scraper to lightly press the nylon silk to make the nylon silk and the feces closely fit, and then use the scraper Scrape the feces over the nylon silk.

5.2.3

Fill the fecal sample scraped by nylon silk into the central hole of the quantitative plate until it is filled and smoothed.

5.2.4

Remove the quantitative plate vertically upwards to leave the fecal sample on the slide.

5.2.5

Take a piece of hydrophilic transparent cellophane that has been soaked, shake off the excess soaking liquid, and cover it on the feces. Take another piece the clean glass slides are crossed vertically and lightly to press the fecal sample evenly, so that the feces under the hydrophilic transparent cellophane are evenly spread without overflowing the glass slide A round fecal membrane of uniform thickness is formed, with a diameter of about 2 cm.

5.2.6

Fix the hydrophilic transparent cellophane with the thumb, and gently move the slide used to press the fecal sample to remove the modified Kato the thick smear is placed at room temperature to make it transparent, and the transparent time is not easy to exceed 2h.

5.3 Microscopic examination

Place the transparent modified Kato thick smear under a biological microscope for microscopic examination, and follow a certain rule under a 10x objective lens, such as from top to bottom, Check the whole film from left to right, and observe under a 40x objective lens for further identification.

5.4 Results judgment

5.4.1

According to the comprehensive characteristics of the egg size, shape, color, egg shell, content, egg cover, and small spines in the modified Kato thick smear Co-determined insect species (see Appendix A).

5.4.2

Count the number of eggs in the modified Kato thick smear, calculate the EPG, and determine the intensity of the infection (see Appendix B).

5.5 Notes

5.5.1

After the fecal membrane is transparent, microscopic examination should be timely. If the transparency is too high, the thin-shelled eggs will be deformed and difficult to identify, which will easily lead to missed inspections or misjudgments.

Generally, the modified Kato thick sheet should not be placed for more than 2 hours at room temperature of 25°C and 75% humidity. If the air humidity is high and the temperature is low, the storage time can be extended appropriately. The air is dry, the temperature is high, and the storage time is appropriately shortened. When transparent, do not try to shorten the transparent time. Put the modified Kato thick slices in the oven or expose them to the sun.

5.5.2

In special studies on prevention and treatment such as drug efficacy assessment, the calculation of EPG must be multiplied by the stool coefficient (formed stool 1, semi-formed stool 1.5, soft stool 2, porridge-like stool 3, watery stool 4), get the number of eggs per gram of feces. Since the total amount of stool in children is less than that in adults, this child contains more eggs per unit volume of feces than adults, so adults should be used as the standard and proportionally reduced, that is, children's feces the number of eggs is multiplied by 25% for 1 to 2 years old, 50% for 3 to 4 years old, 75% for 5 to 10 years old, and no reduction for those over 11 years old.

Appendix A

(Informative appendix) Identification of worm eggs in human feces A.1 Egg types the parasite eggs that can be detected by the improved Kato thick smear method are. vermiform roundworm eggs, trichocarpus eggs, vermicelli Intestinal nematode eggs, hookworm eggs (Ancylostoma duodenum eggs, Ancylostoma americana eggs and Ancylostoma eggs), Taenia mansoni Eggs, Schizocephalus eggs, Taenia eggs (Taenia solium eggs, Taenia saginata eggs, Taenia asiatica eggs), Hymenocystis miniature eggs, Shrink Hymenoptera eggs, Siberian tapeworm eggs, Clonorchis sinensis eggs, Fasciola brucei eggs, Paragonimus wessonii eggs, Japanese blood Fluke eggs, Schistosoma mansoni eggs, Fasciola eggs (fasciola hepatica eggs, Fasciola macrofasciatus eggs), Fasciola hepatica eggs, Echinochosome Fluke eggs, etc. The above-mentioned eggs can be identified under a microscope by their shape, size, color, content, egg cover structure, etc. (see

Table A.1).