

Studies on the metabolism of Echinococcus granulosus. I. General chemical composition and respiratory reactions

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1. 1. Hydatid cyst scolices contain large amounts of protein and smaller amounts of lipids. Less inorganic substances are present than in other immature tapeworms. Two polysaccharides are stored: glycogen and a polysaccharide containing galactose and glucosamine. 2. 2. Under an oxygen tension of atmospheric air the scolices consume oxygen at a rapid rate ($Q_{O_2} = 2$) with an over-all RQ of 0.88. 3. 3. The anaerobic CO_2 production is pronounced, but the sources of this CO_2 have not been established. 4. 4. The aerobic and anaerobic gaseous exchanges are highly sensitive to inhibitors of glycolysis, but dl-glyceraldehyde is completely ineffective. 5. 5. The aerobic respiration is markedly cyanide sensitive. 6. 6. The aerobic respiration is inhibited by fluoroacetate, but not by malonate. 7. 7. The Q_{10} of the oxygen consumption is 2.1 in the range 28 to 38 °C. Temperatures of 42 and 45 °C are beyond the optimum. 8. 8. The respiration remains about constant in the pH range 4.5 to 8.5. 9. 9. Th