咯萘啶对伯氏疟原虫红期内期超微结构的影响

关键词：咯萘啶；伯氏疟原虫；疟原虫超微结构；电子显微镜检查

咯萘啶（7361）是目前使用的一种新型的抗疟药。
结果

用于动物制备

取新鲜的动物组织，去除皮下脂肪和血液，将组织放入研钵中，加入适量的生理盐水，用组织捣碎机研磨组织，然后将组织液放入离心管中，12000转/分，离心10分钟，收集上清液。将上清液转移至试管中，加入等体积的乙醇，混匀后置于冰水浴中，待乙醇完全溶解后，于4℃下保存备用。

用于细胞培养

取新鲜的动物组织，去除皮下脂肪和血液，将组织放入培养瓶中，加入适量的培养基，用组织捣碎机研磨组织，然后将组织液放入培养瓶中，加入等体积的无血清培养基，混匀后置于CO₂培养箱中，37℃，5%CO₂下培养12小时，收集上清液。将上清液转移至试管中，加入等体积的乙醇，混匀后置于冰水浴中，待乙醇完全溶解后，于4℃下保存备用。

用于临床检测

取新鲜的动物组织，去除皮下脂肪和血液，将组织放入研钵中，加入适量的生理盐水，用组织捣碎机研磨组织，然后将组织液放入离心管中，12000转/分，离心10分钟，收集上清液。将上清液转移至试管中，加入等体积的乙醇，混匀后置于冰水浴中，待乙醇完全溶解后，于4℃下保存备用。

用于化学实验

取新鲜的动物组织，去除皮下脂肪和血液，将组织放入研钵中，加入适量的生理盐水，用组织捣碎机研磨组织，然后将组织液放入离心管中，12000转/分，离心10分钟，收集上清液。将上清液转移至试管中，加入等体积的乙醇，混匀后置于冰水浴中，待乙醇完全溶解后，于4℃下保存备用。
EFFECT OF PYRONARIDINE ON ULTRASTRUCTURAL FORMS OF PLASMODIUM BERGHEI IN MICE

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ABSTRACT About 4-4 h after a single dose (6 mg/kg, DMSO) of pyronaridine ig to the mice infected with Plasmodium berghei, swelling of pellicular complexes, formation of multilamelate whorls in the complexes, and fusiosh, enlargement and pigment aggregation of food vacuoles in the trophozoites of the parasites were observed, then followed by changes of mitochondria, endoplasmic reticulum and nuclear membrane, deformities of ribosomes and nuclear chromatin. Ultrastructural Distinctations were noted in a few trophozoites after 4 h, while most of those lesions occurred in 16 h. The ultrastructural changes in the schizonts were similar to those in the trophozoites after 1-2 h and no more schizonts...
were found after 16 h. The results suggested that pyronaridine exerted its potent and rapid lethal action on the erythrocytic forms of Plasmodium berghei by interfering in physiological function of the pellicular complexes and food vacuoles.

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KEY WORDS pyronaridine; Plasmodium berghei; Plasmodium trophozoites; electron microscopy

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Fig 1. Electron micrographs of *P. berghei*. A) Mouse RBC containing an untreated trophozoite, x18 200. B) A RBC with 3 trophozoites, 15-30 min after i.q. pyronaridine (6 mg/kg, ED₅₀), arrow showing multilamellate whorl and slight swelling of pellicular complexes, x17 000. C) A trophozoite after 15-30 min, arrow showing an enlarged multilamellate vacuole, x10 200. D) A trophozoite after 1-2 h, an autophagic vacuole (large arrow) and partially swollen mitochondrion (small arrow), x22 500. E) A mature schizont after 2 h, arrow showing a swollen mitochondrion within the meronts, x16 000. F) A trophozoite after 4 h, conspicuous swelling of pellicular complexes, electron-dense fibre-like materials within the matrix of swollen mitochondrion (small arrow) and an electron-dense nucleus (large arrow), x76 400. G) A trophozoite after 4 h, disintegration of pellicular complexes and increasing of electron density of cytoplasm, x35 000. H) A trophozoite after 4 h, disappearance of most of pellicular complexes and subsititution of numerous vacuoles for the cytoplasm, x22 400. I) A trophozoite after 5 h, more than ten layers of whorl of concentric membranes surrounding its cytoplasm, x18 200. J) After 5 h, a parasite appearing as a mass of multilamellate whorl of membranes with swelling and blurring, x24 900. K) After 24 h, only material pigment remains within a RBC, x15 000. L) A trophozoite 4 h after i.q. chloroquine (40 mg/kg, ED₅₀), arrow showing a large autophagic vacuole containing clusters of pigment granules, x26 400. (See p 281)