

Assignment(PHA 315)

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COURSE: SYSTEMIC PHARMACOLOGY

QUESTIONS

Classify the antimalarial agent and state the mode of action of each drug listed.

ANSWERS

Antimalarial agent

Classes = drugs

- **4 - aminoquinolines** = chloroquine, amodiaquine
- Quinoline methanol = mefloquine
- Biguanide = proguanil
- Diaminopyrimidine = pyrimethamine
- Cinchona alkaloid = quinine
- 8 - aminoquinolines = tafenoquine, primaquine
- Sulfoamide and sulfone = sulfadoxine, sulfamethopyrazine, dapson.
- Antibiotics = tetracycline
- Amino alcohol = halofantrine, lumefantrine
- Sesquiterpene = Artesunate, Artemether, Arteether.
- Naphthyridine = pyronaridine

Chloroquine mode of action

- The parasite host cells is digested to obtain hemoglobin as amino acids.
- The process releases large amount of heme, which is toxic to the parasite.
- Chloroquine prevents the polymerization to hemozoin.

Mefloquine mode of action

- Like CQ, it accumulates in the RBCs, which bind to heme.
- The site of action is the parasite cytosol.

Quinine mode of action

- Same as CQ, it inhibits polymerization to hemozoin.
- It releases heme to kill the parasite membrane.

Primaquine mode of action

- Intermediate acting oxidants that are responsible for the schizontocidal action.

Artemether mode of action

- It act against erythrocytic of p falciparum and inhibite nuclei acid.

Lumefantrine mode of action

- It inhibits nuclei and formation of beta hematin to form heme

Artesunate mode of action

- It form a covalent bond inhibiting the heme
- It inhibit the production of hemozoin.