

عنوان مقاله:

A Comparative in vitro Study of the Effect of Eosin B on Asexual Blood Stages and Gametocyte of Plasmodium falciparum

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خلاصه مقاله:

Background and Objective: Malaria is one of the most life-threatening infectious diseases worldwide. Transmission of the parasite from human to vector mosquitoes is carried out by the gametocyte of the Plasmodium parasite, while these cells are not involved in the symptoms of the disease. The control of the human to mosquito transmission stage of the parasite life cycle by antigametocyte drugs is currently under increasing scrutiny in an effort to eradicate the disease globally. In this study the gametocytocidal activity of eosin B on asexual blood stages and gametocytes of Plasmodium falciparum has been probed. **Materials and Methods:** The parasite Plasmodium falciparum 3D7 was first cultured and then gametocytogenesis was induced to obtain gametocyte cells. After microscopically studying the developmental stages of the parasite during the culture of the parasite, eosin B was tested on blood and sexual parasites and the viability was assessed by lactate dehydrogenase assay and the results were compared for the two groups. **Results:** Mature gametocytes were produced during 12 days. The blood parasites in culture were increased until day 4 and then gradually diminished. The results of lactate dehydrogenase assay showed a stronger effect of eosin B on gametocytes (IC50 = 23 nM) than asexual blood stages (IC50 = 133 nM). **Conclusion:** Due to the rarity of anti-gametocyte drugs and importance of these intervention on malaria elimination, eosin B appears to be a suitable candidate for combination therapy against Plasmodium falciparum gametocytes.

کلمات کلیدی:

Malaria, Plasmodium falciparum, Gametocyte, Eosin B, Lactate dehydrogenase
مالاریا، پلاسمودیوم فالسیپاروم، گامتوسیت، ائوزین B، لاکتات دهیدروژناز

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