

※ 考生請注意：本試題不可使用計算機。請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

一、請閱讀下文並回答問題：(40 points)

Chagas disease and human African trypanosomiasis are endemic conditions in Latin America and Africa, respectively, for which no effective and safe therapy is available. Efforts in drug discovery have focused on several enzymes from these protozoans, among which cysteine proteases have been validated as molecular targets for pharmacological intervention. These enzymes are expressed during the entire life cycle of trypanosomatid parasites and are essential to many biological processes, including infectivity to the human host. As a result of advances in the knowledge of the structural aspects of cysteine proteases and their role in disease pathophysiology, inhibition of these enzymes by small molecules has been demonstrated to be a worthwhile approach to trypanosomatid drug research. This review provides an update on drug discovery strategies targeting the cysteine peptidases cruzain from *Trypanosoma cruzi* and rhodesain and cathepsin B from *Trypanosoma brucei*. Given that current chemotherapy for Chagas disease and human African trypanosomiasis has several drawbacks, cysteine proteases will continue to be actively pursued as valuable molecular targets in trypanosomatid disease drug discovery efforts.

1.1 請分別敘述並比較 *Trypanosoma cruzi* 與 *Trypanosoma brucei* 在地理分佈、形態學與生活史上的異同。(30 points)

1.2 請說明上述文章的重要性。(10 points)

二、請閱讀下文並回答以下問題：(40 points)

Foodborne trematodiasis (FBT) is a significant global health problem, with the liver flukes *Opisthorchis viverrini*, *O. felinus*, and *Clonorchis sinensis* contributing to half of the global burden of FBT. North-eastern Thailand where *O. viverrini* is endemic and uncooked fish dishes remain an integral part of the food culture has the highest reported incidence of opisthorchiasis, including associated cholangiocarcinoma. Both food sharing and eating practices are potentially important factors in FBT, suggesting an important role for the social ecology of disease transmission in these rural communities.

2.1 請分別敘述並比較 *Opisthorchis viverrini*, *O. felinus* 與 *Clonorchis sinensis* 在地理分佈、形態學與生活史上的異同。(30 points)

2.2 請說明 foodborne trematodiasis (FBT) 在公共衛生上的重要性。(10 points)

三、請解釋下列名詞：(each 5 points, total 20 points)

3.1 haemozoin

3.2 bradyzoite

3.3 cysticercosis

3.4 gnathostoma