

Quinoxaline Compounds with Antiparasitic Activity

■ Profile information

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■ Research Ideas and Technology Seeds

■ Originality and Strengths

A library of 210,000 compounds was screened to identify compounds with amoebicidal activity against *Entamoeba histolytica* trophozoites. Quinoxaline derivatives were identified that exhibited amoebicidal activity comparable to that of currently used drugs, while showing no toxicity toward human-derived cultured cells.

■ Appropriate animal model

The quinoxaline compounds showed therapeutic efficacy comparable to that of currently available drugs by subcutaneous and oral routes.

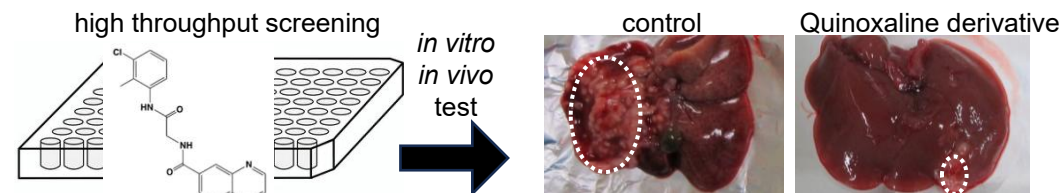
■ Results

Development of therapeutic and preventive agents for amebiasis that target pathway distinct from existing drug.

■ Backgrounds and Issues to be Resolved

Amebic dysentery is caused by infection with the anaerobic protozoan *Entamoeba histolytica* and is responsible for approximately 100,000 deaths worldwide each year. Although the disease is most prevalent in developing countries with inadequate water and sanitation infrastructure, an increasing number of cases has also been reported in Japan in recent years. Metronidazole is currently used as the first-line treatment for amebic dysentery; however, the development of new therapeutic agents is needed because of concerns regarding side effects and the emergence of drug resistance.

■ Graphical Abstract



■ Future plans

- The pharmacokinetic and toxicity studies using animals have already been completed.
- Patent: Number 2025-284654, application date Dec. 26th 2025
“Anti-amoebic Therapeutic and Prophylactic Agent”
Application: The university of Tokyo, JIHS
Inventor: Tomoyoshi Nozaki, Yumiko Saito-Nakano