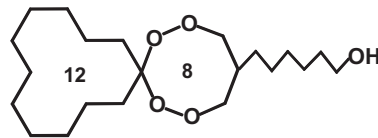


# Combat for Control the Drug-resistant Malaria –New Antimalarial Candidate from Japan–

Hye-Sook Kim, Yusuke Wataya (Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University)

## 〈New antimalarial candidate for drug-resistant malaria〉



**N-251**

Patent No. 4289911  
US 7, 407, 984 B2  
EU1496056

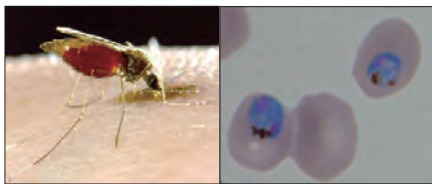
### 〈Merit〉

- Commercial base synthesis (> 2.7kg/batch)
- Strong effect against drug-resistant malaria (*in vitro*)
- Cure effect in mice and monkey (*in vivo*)
- Inhibit specific malaria parasite protein

### 〈Safety test〉

- Mutagenesis (*S.typhimurium*, *E. coli*) : (-)
- Chromosomal aberration (CHL/IU cell) : (-)
- Central nervous system and respiratory (rat) : (-)
- Minimal lethal dose: > 2 g/kg (ラット), > 1 g/kg (dog)

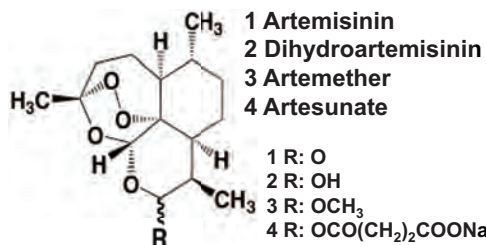
## 〈History for new drug development of malaria〉



*Anopheles* spp.      *P. falciparum*

Infected no./year: 0.3–0.5 billion  
Mortality/year: 1.5–2.7 million  
No. living in the world: 40% of population  
No. endemic country: more than 100  
Symptoms: anemia, splenomegaly, coma

Artemisinin-based Combination Therapy (ACT) : WHO recommend  
Combination of artemisinin related drugs and other drugs



### Issue for artemisinin

- Complicate synthesis
- Unstable supply
- Not cure in monotherapy
- Occur the recrudescence
- ACT-resistant *P. falciparum*

➡ Have to development of new antimalarials

## 〈Milestone for new antimalarial N-251 development〉

On going

- drug formula
- treatment condition
- suitable treat route
- PK/PD analysis

