Second-phase lead optimisation of Emetine Dihydrochloride for repositioning as an antimalarial drug

The emergence and spread of drug resistance in *Plasmodium falciparum* has prompted a renewed call to develop new antimalarials. One of the most useful strategies to discover new drugs is to reposition or repurpose existing drugs. The singular advantage of adopting this strategy which screens patent expired drug libraries is that the compounds screened are already known to be bioactive and safe for use in humans. This significantly reduces the time and cost involved in drug development.

The Malaria research group at the University of Salford has screened 700 current drugs, yielding ~ 50 potential leads exhibiting strong-moderate antimalarial potency. Preliminary screens have identified the anti-amoebic drug emetine dihydrochloride as a potent antimalarial option. This study focuses on second-phase optimisation of emetine dihydrochloride in a bid to characterise IC_{50}, echanism of action, synergy and cytotoxicity. The impact of the work and its potential contribution to a disease that continues to cause 1-2 million fatalities annually cannot be over emphasised