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Objective: The main objective of the work is to overcome the solubility and bioavailability problems associated with Artesunate and adjuvant (Quercetin) combination therapy by formulating as lipid-based nanoemulsion, in an attempt to effectively treat the resistant forms of *falciparum* species of malaria.
Method: ART-QRT nanoemulsion was prepared using spontaneous nanoemulsification method and optimized by Box Behnken design. The optimized SNEEDS were evaluated for particle size, PDI, percentage transmittance, refractive index, drug content, viscosity and release rate. Further, these nanoemulsion are evaluated for pharmacokinetic and *in vivo* antimalarial efficacy in combination with QRT in animal model.
Results & discussion: Compatibility studies revealed that the selected drug ART and QRT are compatible with each other without any unwanted interactions. The LC-MS/MS method was successfully developed for the simultaneous analysis of ART, DHA and QRT in rat plasma for the pharmacokinetics studies. The optimized SNEDDS composed of Capryol 90, cremophore EL and PEG-400 The ART-QRT which could withstand the extensive dilution and did not show any phase separation or drug precipitation. The SNEDDS exhibited mean globule size <80 nm, with a percentage transmittance of 98. Release rate of the drug from the optimized batch was found to be quite significant ($P < 0.001$) as compared to the plain drug. The in vitro cytotoxicity studies confirmed that the nanoformulation is safe and nontoxic. *In vivo* oral bioavailability of the nanoemulsion formulation in wistar rats of either sex was found to be higher observed from pharmacokinetic studies. The antimalarial activity against *Plasmodium bergheii* infection in swiss albino mice showed improved parasite clearance and survival rate in combination with QRT. Hence, SNEEDS of ART in combination with QRT have yielded promising results, which might help to establish better therapeutic strategies for malaria treatment. Nevertheless, extensive investigation is essentially required in the near future for the same.
Keywords: Malaria, Self-nanoemulsifying drug delivery system, Artesunate, Quercetin, *Plasmodium bergheii.*

Presenter: **Mr Umar Anjum**, *PhD Student, De Montfort University*

Poster 4 : **Studying the presence of *Cyclospora* and *Cystoisospora* in urban parks from Leicester, UK**

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Cyclospora cayetanensis and *Cystoisospora belli* (formerly known as Isospora belli) are emerging coccidian parasites that can spread by ingesting contaminated food or water. Despite their presence is more common in tropical and subtropical regions, different studies have described domestic outbreaks due to these pathogens around the world. Zoonotic transmission of these pathogens is under discussion as they have been found in various animals and birds. We have performed a preliminary study to investigate their potential presence in an English urban environment. 132 animal faecal samples were collected between Summer 2017 and Spring 2018 from 7 different urban parks across Leicester (UK). A veterinarian confirmed animal species as: 78 avian (25 pigeon, 14 waterfowl, 12 songbird, 27 uncertain due to diarrhoea), 37 deer, 13 dogs and 4 cats. Smears were microscopically analysed by Kinyoun's acid-fast staining technique. Cyclospora spp. were observed in three faecal samples (2.3%), two from deer and one from avian (diarrheic sample); however, further analysis are required to determine if the oocysts observed are from *Cyclospora cayetanensis*. Contrarily, *Cystoisospora* spp. were not found in any of the screened stool samples. Despite our results should be considered as preliminary, the presence of *Cyclospora* spp. oocysts in 2.3% of the animal faecal samples collected across Leicester might represent a potential human risk that, although minor, should be throughly studied to protect the local community. Moreover, *Cyclospora* spp. have been found in different animal species, which may require different interventions to target those specific animals to protect the public health.

Presenter: **Dr Samuel Duncan**, *University of Dundee*

Poster 3 : **Identifying highly divergent glycosyltransferases in the African trypanosome**

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Trypansoma brucei is a protozoan parasite that infects humans and cattle via a tsetse fly vector. Key to parasite survival during progression through this complex life cycle is the expression of cell surface and endocytic pathway glycoproteins, modified with glycosylphosphatidylinositol (GPI) membrane anchors and/or N-linked oligosaccharides. We estimate that protein glycosylation in this parasite requires at least 38 distinct glycosyltransferases (GTs), only a few of which can be predicted by bioinformatics. Interestingly, a family of 21