**Summary**

Many important pathogens circulate within multi-host communities. Equally, many hosts can be infected with multiple pathogens at any given time. In amphibian populations, the two pathogens of most global conservation concern, Ranavirus and *Batrachochytrium dendrobatidis* (*Bd*), have recently been indicated to occur as co-infections, yet our understanding of these complex host-pathogen interactions remains limited.

We empirically tested how susceptibility, infectiousness and burden of disease changed with infection scenario (single vs coinfection) across a panel of host *species (Bufo bufo, Rana temporaria and Alytes muletensis)* that range in their reported susceptibility. We measured the contributions of each host, at an individual level, to the environmental pool of infectious particles, by quantifying Bd zoospores and ranavirus virion outputs at five time points post exposure, using a water filtration system.

We demonstrated that disease prevalence and infection burden, is context dependent, with ranaviral infection significantly higher in co-infection scenarios (*stat*) though the direction of these effects differed with the sequence of co-infection (*stat2*) and host species (*stat3*). We detected a significant effect of exposure sequence on host infectiousness, with the infection scenario influencing pathogen shedding rate and viability of one or both pathogens (*stat4*).

Our study provides previously lacking emperical evidence of within-host and between-host dynamics under different infection scenarios (single vs co-infection) and highlights the importance of understanding host contributions to enviromental reservoirs of disease. Building an understanding of the transmission process between an infectious host and a susceptible individual, across different host species, allows us to predict how host species community composition influences the establishment and persistence of both pathogens, singularly and as coinfections, at the community level.

**Key-words:** *Batrachochytrium dendrobatidis*, Ranavirus, coinfection, multi-host, within-host interactions, between-host interactions, host-pathogen interaction, amphibian, chytridmycosis ﻿