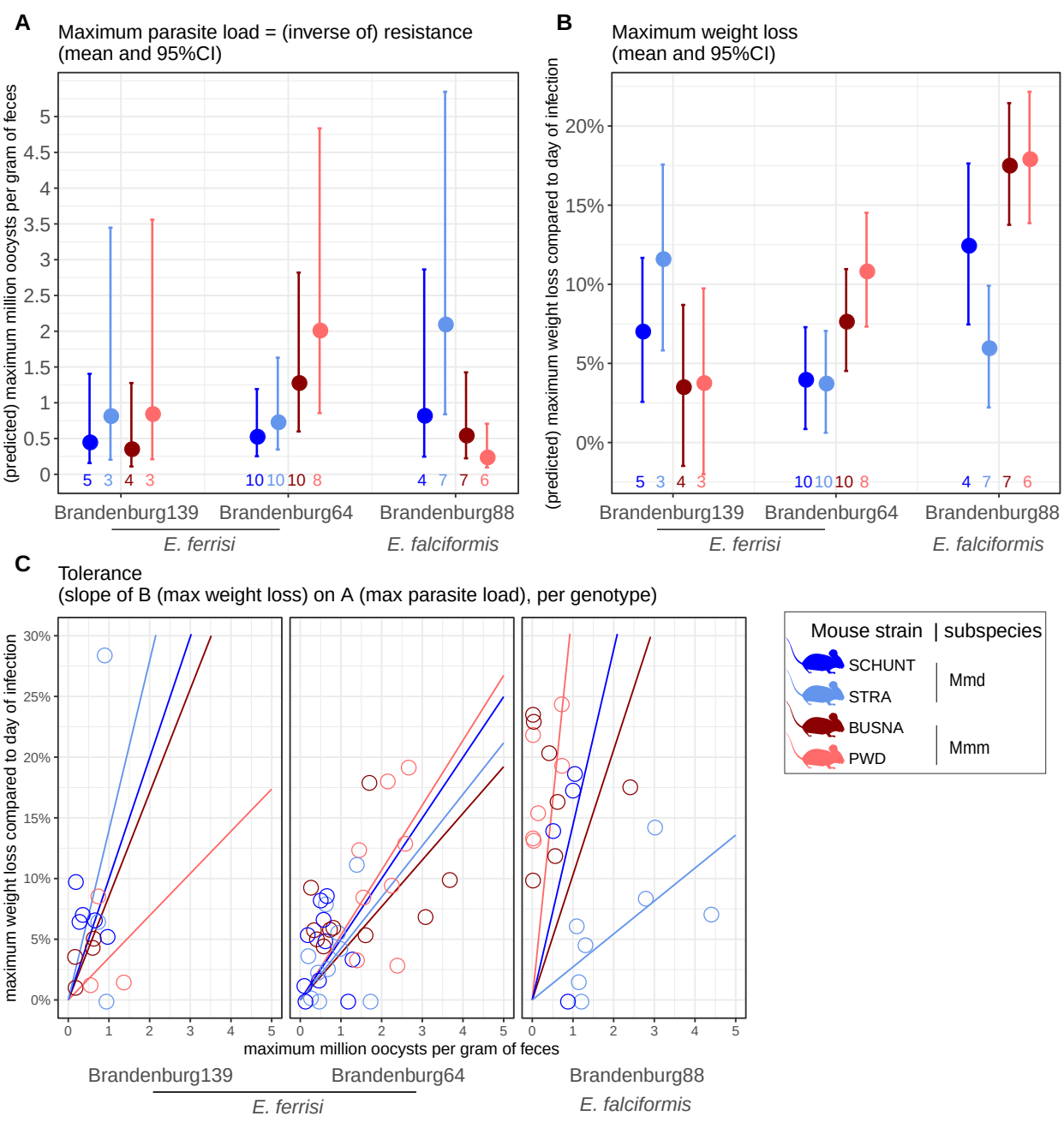
Supplementary material S2. Results on conservative dataset (N=77)

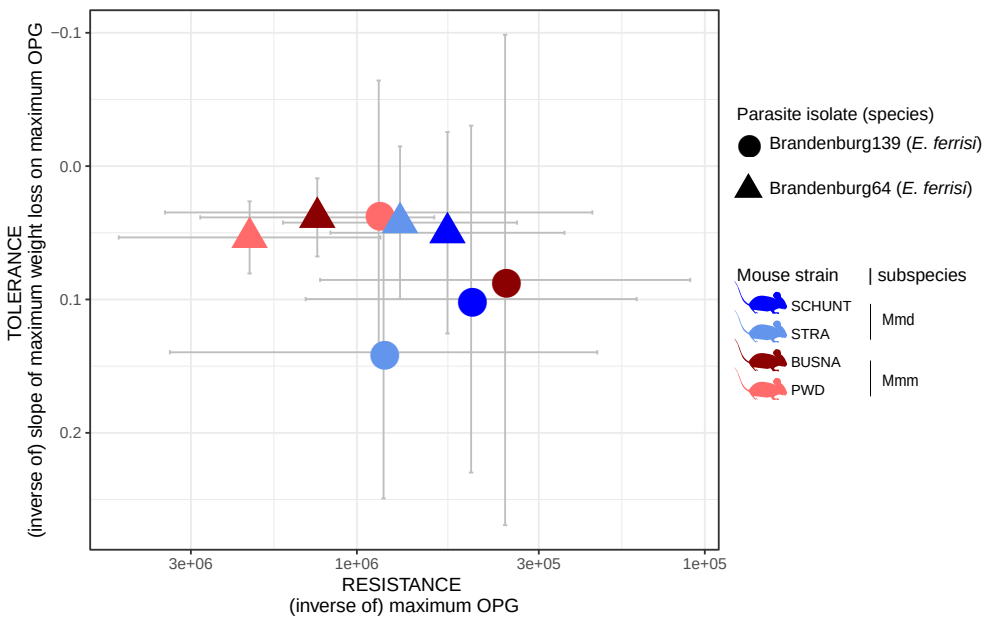
		Factors tested by Likelihood ratio test		
Proxy of	**Measured variable**	**Mouse strain**	**Parasite isolate**	**Interaction**
Resistance	maximum oocysts per gram of feces (high value = low resistance)	G=13.7 df=9 P=0.08	G=13.7 df=8 P=0.09	G=11.9 df=6 P=0.06
Impact on weight	maximum weight loss during patent period relative to starting weight	G=36.7 df=9 P<0.001	G=45 df=8 P<0.001	G=23.4 df=6 P<0.001
Tolerance	slope of the two previous for each mouse strain (high value = low tolerance)	G=24.4 df=9 P=0.004	G=21.7 df=8 P=0.005	G=18 df=6 P=0.006

S2.1. Likelihood ratio tests of factors significance.

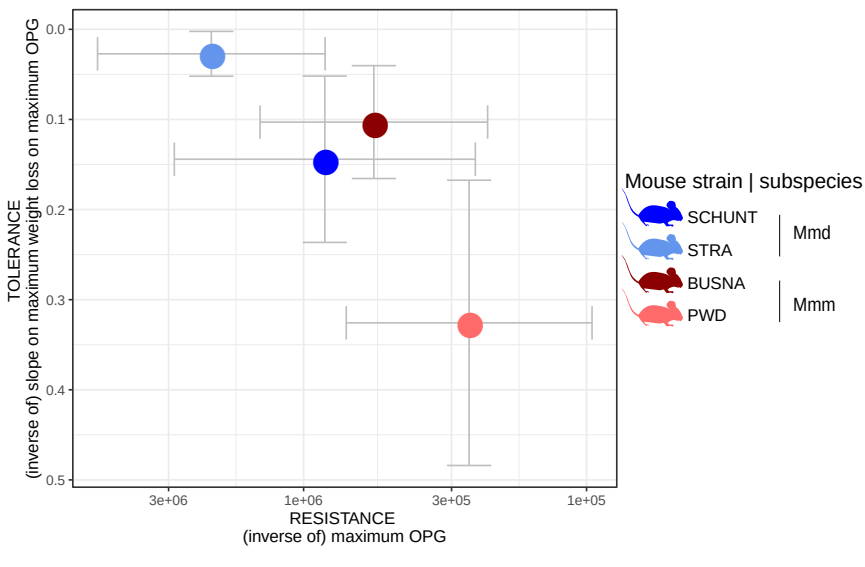


S2.2. Comparison of resistance, impact on weight and tolerance between mouse strain for each *Eimeria* isolates. (A) Maximum oocysts per gram of feces used as a proxy for (inverse of) resistance; (B) Impact on host health measured as the maximum weight loss during patent period relative to starting weight (%); (C) Tolerance estimated by the slope of the linear regression with null intercept modelling maximum relative weight loss as a response of maximum oocysts per gram of feces. A steep slope corresponds to a low tolerance. Differences of maximum parasite load and of maximum weight loss could be detected between mouse strains infected by *E. ferrisi* Brandenburg64 and *E. falciformis* Brandenburg88, but not *E. ferrisi* Brandenburg139. Tolerance differed between mouse strains only upon infection with *E. falciformis* Brandenburg88.

Likelihood ratio tests:
Maximum OPG (A):
Brandenburg139: G=5.9, df=3, p=0.11;Brandenburg64:G=16.4, df=3, p<0.001; Brandenburg88: G=14.1, df=6, p=0.03;
Maximum weight loss (B):
Brandenburg139: G=3.6, df=3, p=0.3;Brandenburg64: G=15.1, df=3, p=0.0018;Brandenburg88: G=16.7, df=3, p<0.001;
Tolerance (C):
Brandenburg139: G=3, df=3, p=0.4;Brandenburg64: G=1.8, df=3, p=0.62;Brandenburg88: G=9.6, df=3, p=0.022



S2.3. No indication of resistance-tolerance coupling for both each *E. ferrisi* isolates. X-axis represents resistance (maximum oocysts per gram of feces used as a proxy, a high value corresponding to a low resistance); Y-axis represent tolerance (slope of the linear regression with null intercept modelling relative weight loss as a response of maximum oocysts per gram of feces, a high value corresponding to a low tolerance).
E. ferrisi isolate Brandenburg64: Spearman's rho = 0.2; *E. ferrisi* isolate Brandenburg139: Spearman's rho = -0.2. Grey error bars represent 95% confidence intervals.



S2.4. Negative correlation between resistance and tolerance for *E. falciformis* isolate Brandenburg88. X-axis represents resistance (maximum oocysts per gram of feces used as a proxy, a high value corresponding to a low resistance); Y-axis represent tolerance (slope of the linear regression with null intercept modelling relative weight loss as a response of maximum oocysts per gram of feces, a high value corresponding to a low tolerance). Spearman's rho = -0.8. Grey error bars represent 95% confidence intervals.