a all mutations (n=192)
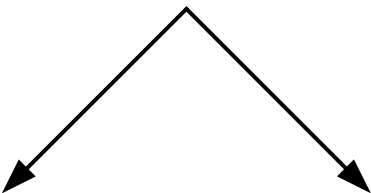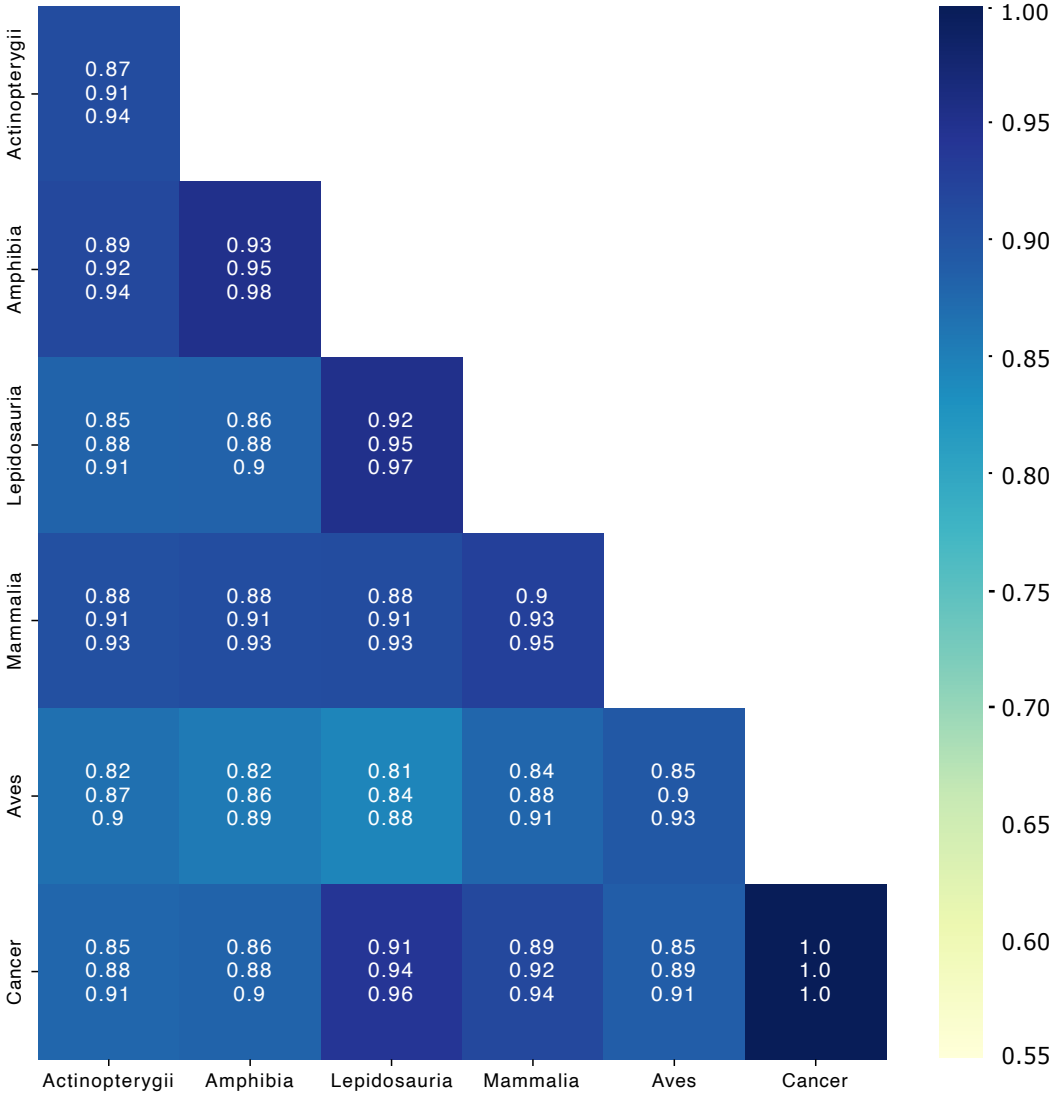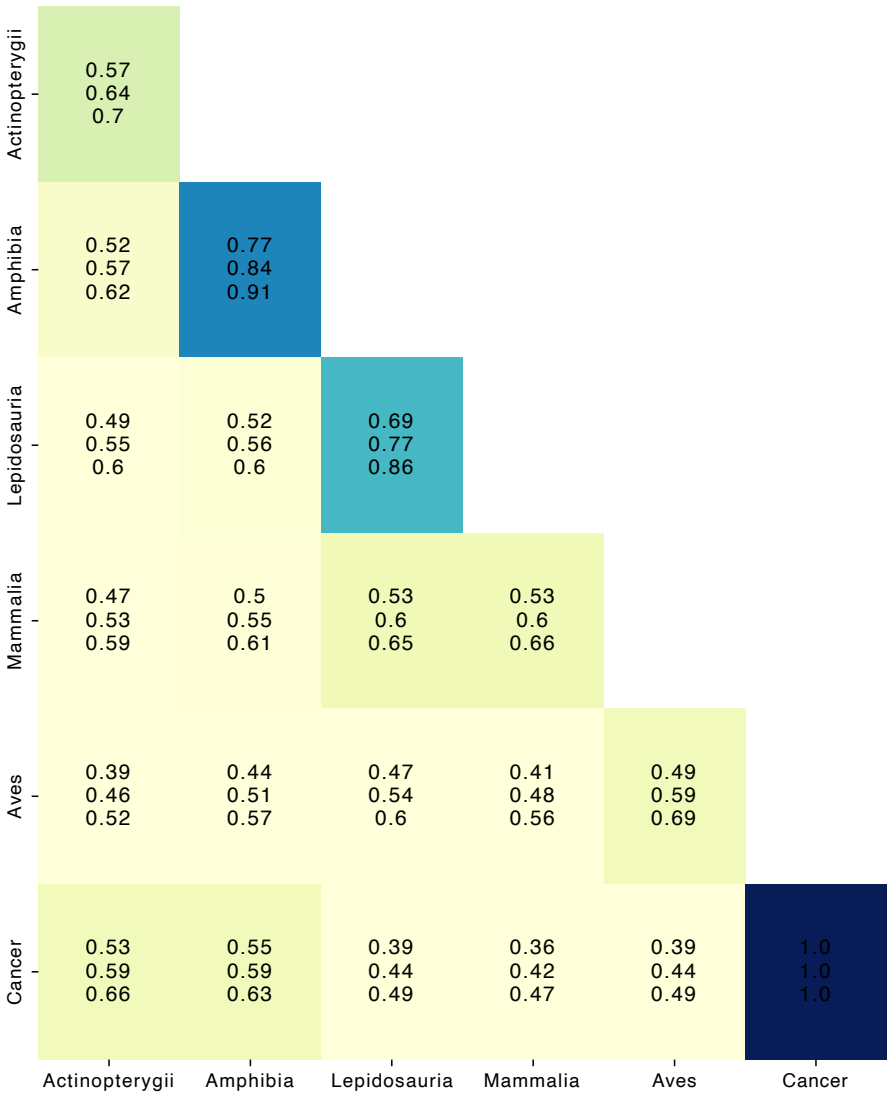
b transitions (n=4 x 16)

c transversions (n=8 x 16)