

**Figure S3: Number of SER-containing alignment sites in relation to the number of taxa that encode SER at those sites.** Both non-co-SER sites (encoding exclusively S or Z) and co-SER sites (encoding S and Z) have the number of taxa that encode S and/or Z, respectively, ranging from 2 to 80. The existence of non-co-SER sites with many taxa indicates that S and Z are not entirely freely interchangeable, i.e., that the different codon groups *Ser1* and *Ser2* are not truly synonymous. There is a total of 1,642 non-co- and 1,531 co-SER sites in the alignment, with about half of those non-co-SER sites (819) comprising only a single taxon that encodes S or Z (not shown in plot because of scaling).

