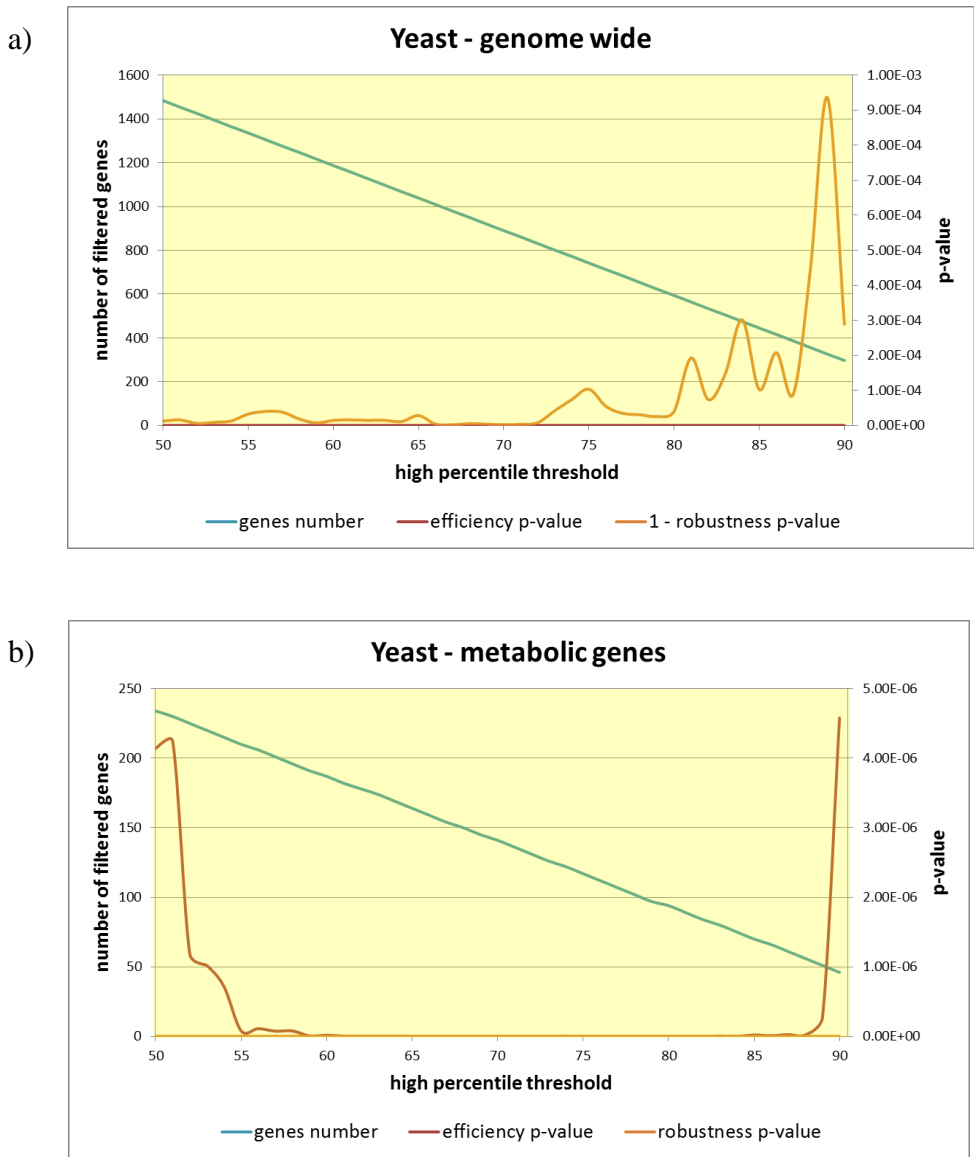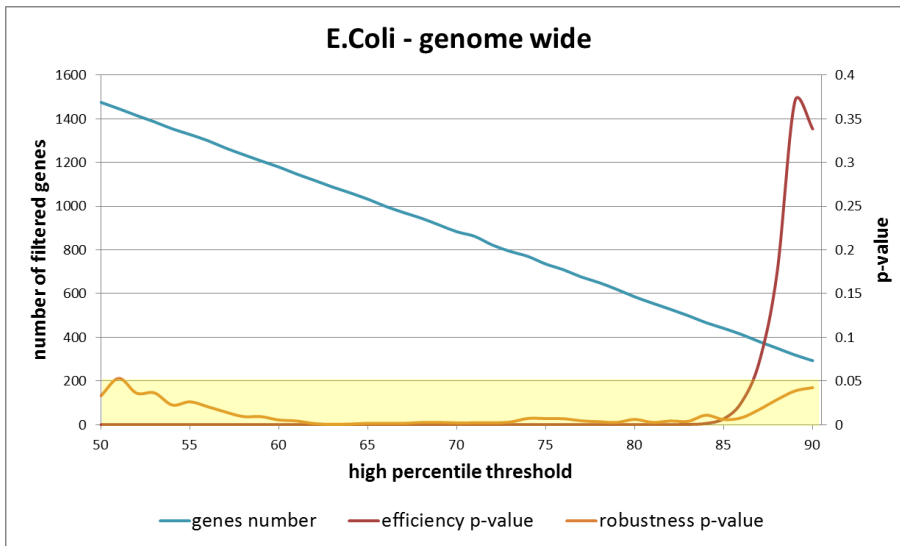**S2 Fig. Wilcoxon one sided test of efficiency and robustness scores between genes with high vs. low conservation.**

X axis represents genes with conservation scores above 'x' percentile, which are compared against genes with conservation scores of below 100-x percentile. Blue lines mark the size of the compared gene groups. Brown and red lines mark the measured p-value for efficiency and robustness (respectively). Areas of significance are stated by a yellow background. a) Yeast – genome wide (since correlation between robustness and conservation here is negative, 1-robustness values were used). b) Yeast – metabolic genes. c) *E. coli* – genome wide. b) *E. coli* – metabolic genes.

a)



b)

c)

**E.Coli - genome wide**



d)

**E.Coli - metabolic genes**