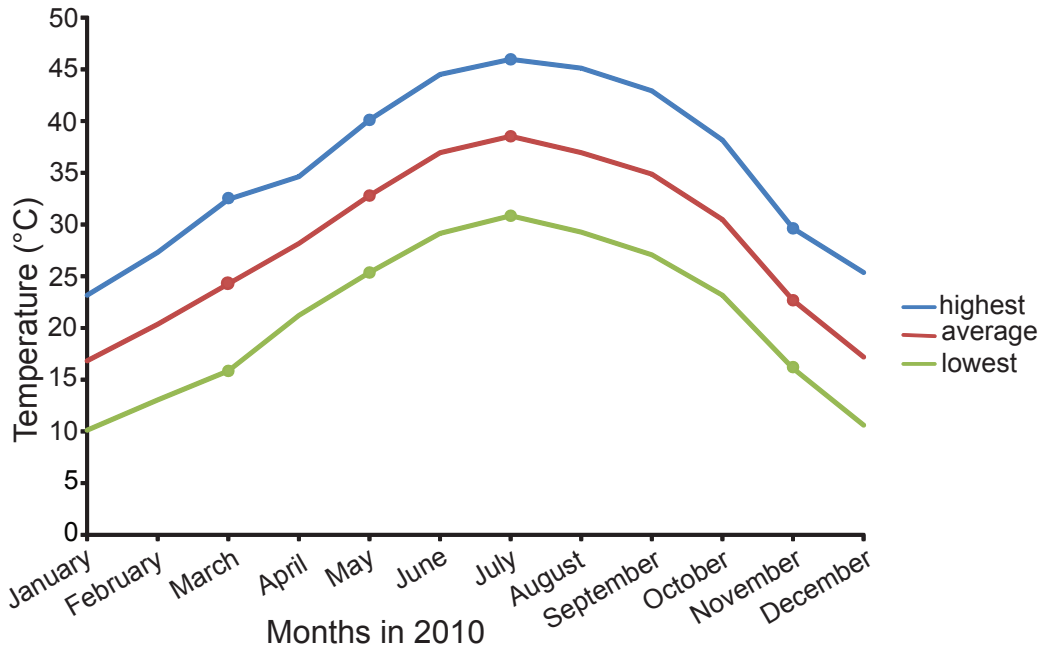


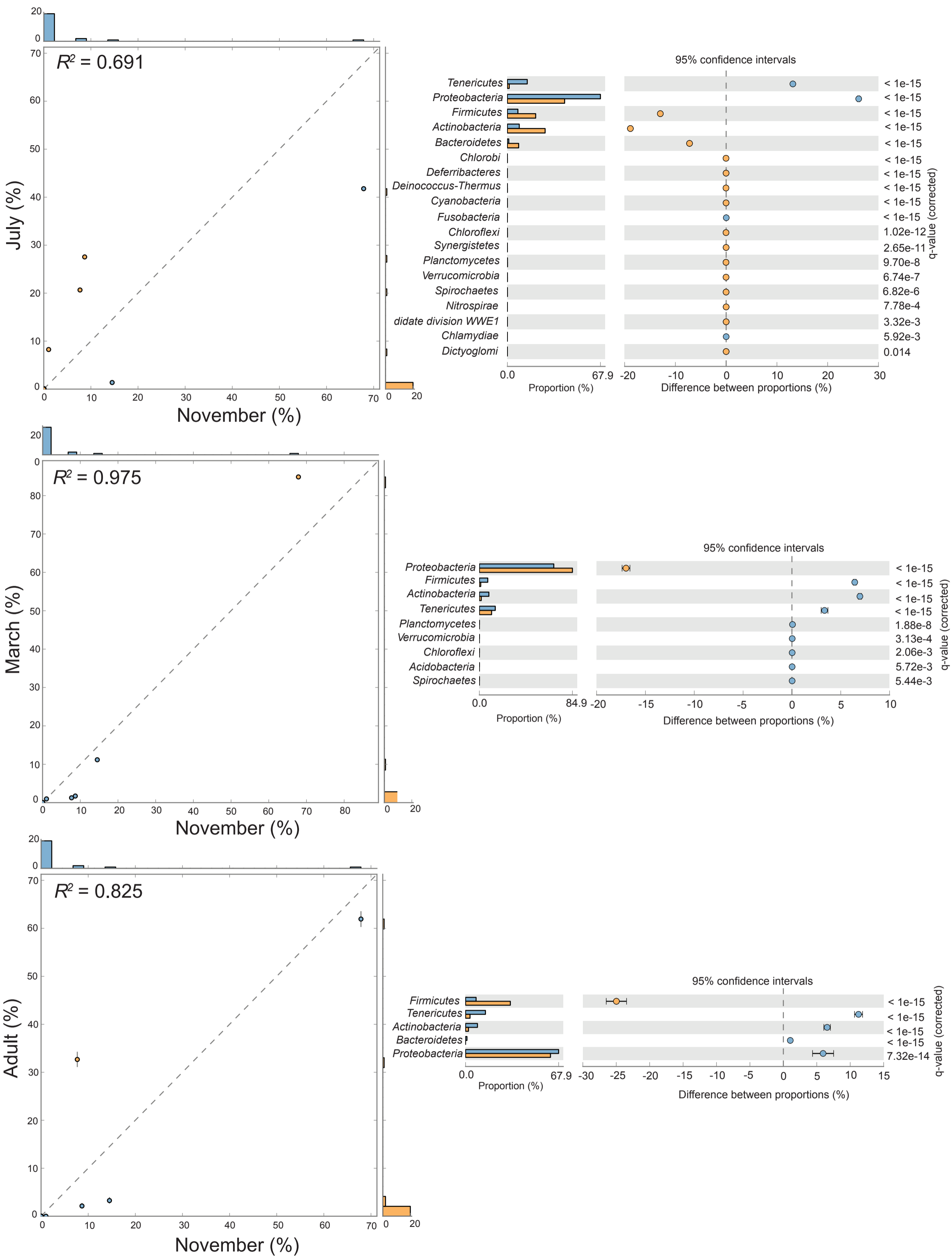


1 cm

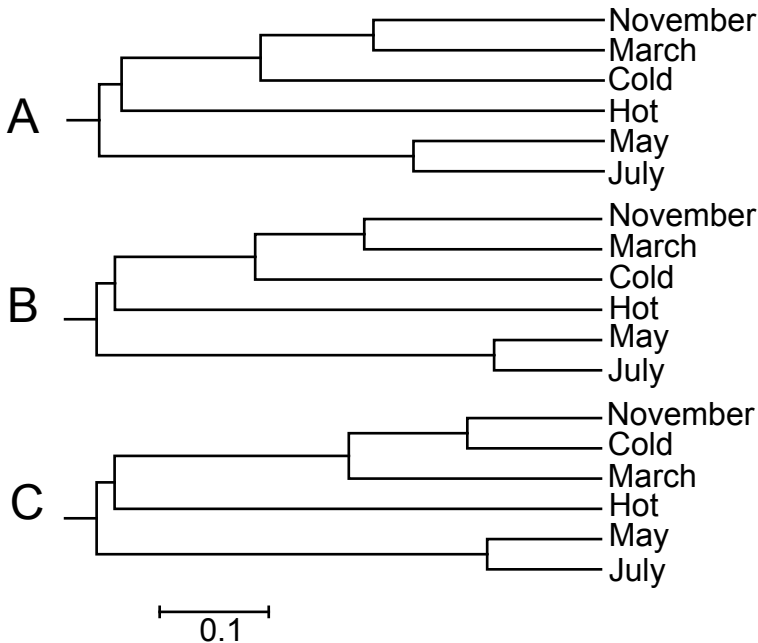
**Fig. S1.** The intestine of the RPW larva (left) and adult (right).



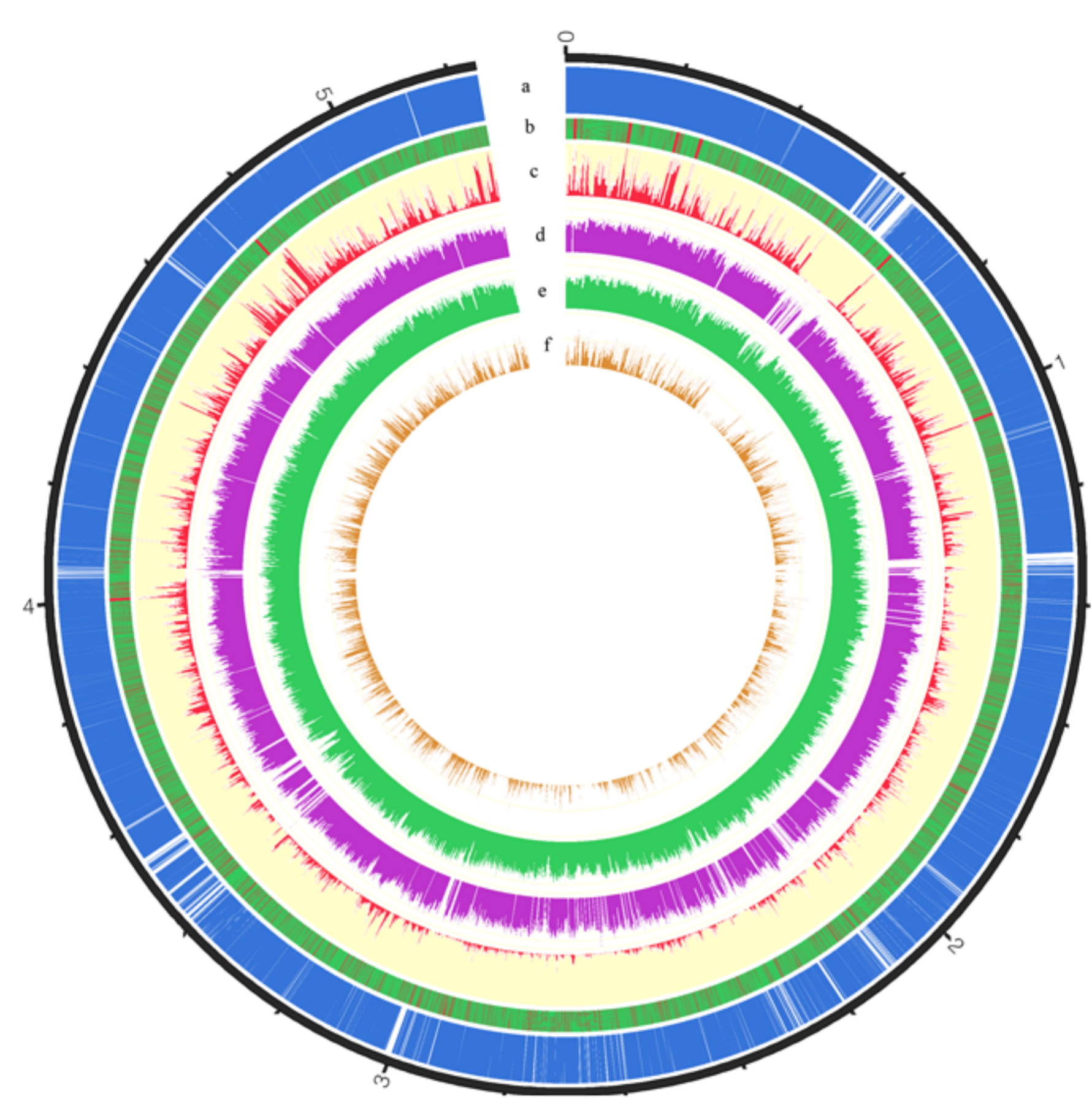
**Fig. S2.** Temperature distribution of 2010 in Al-Hssa Oasis, Saudi Arabia.



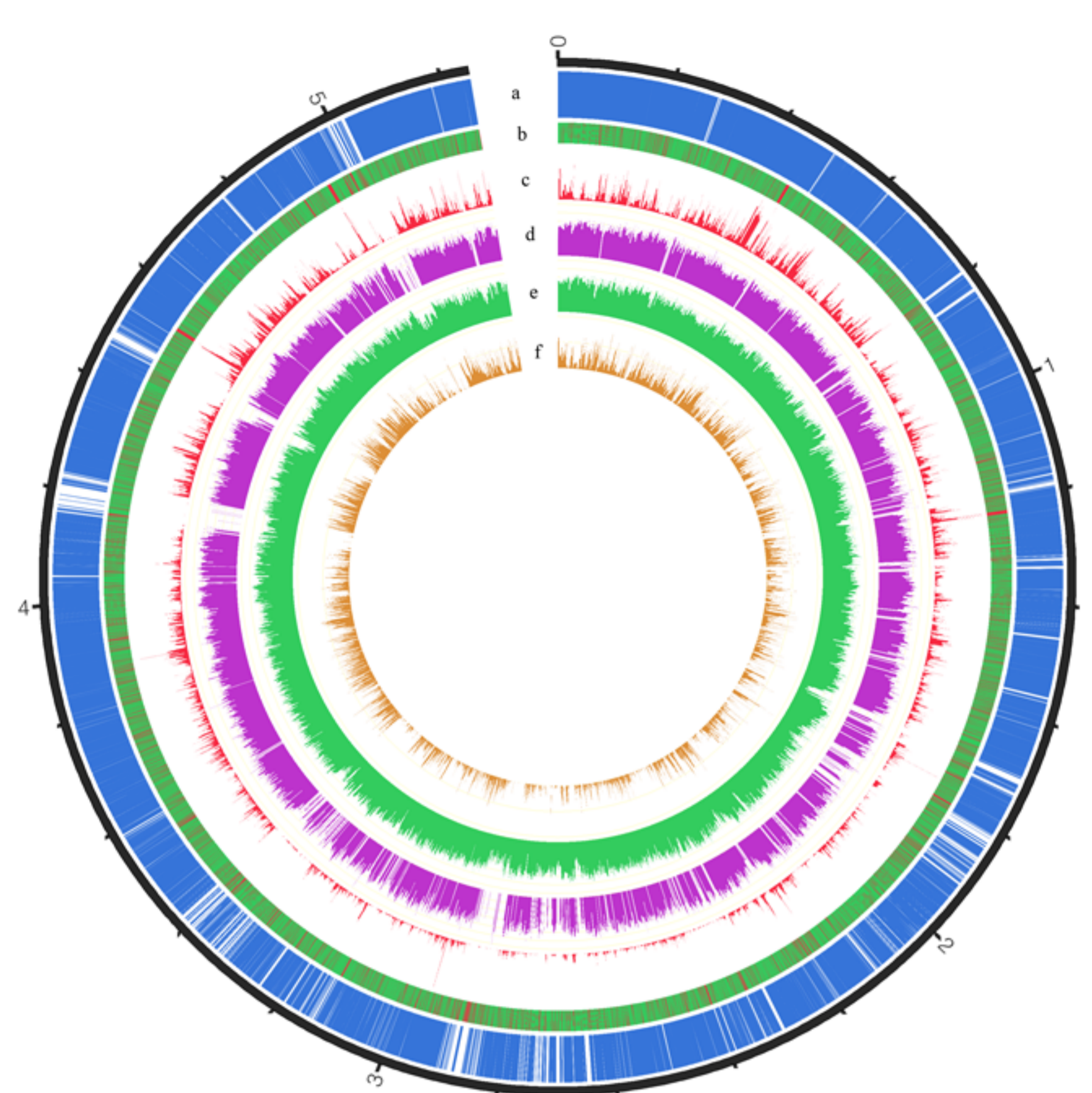
**Fig. S3.** Pairwise comparison of taxonomic compositions between November and the other three samples.



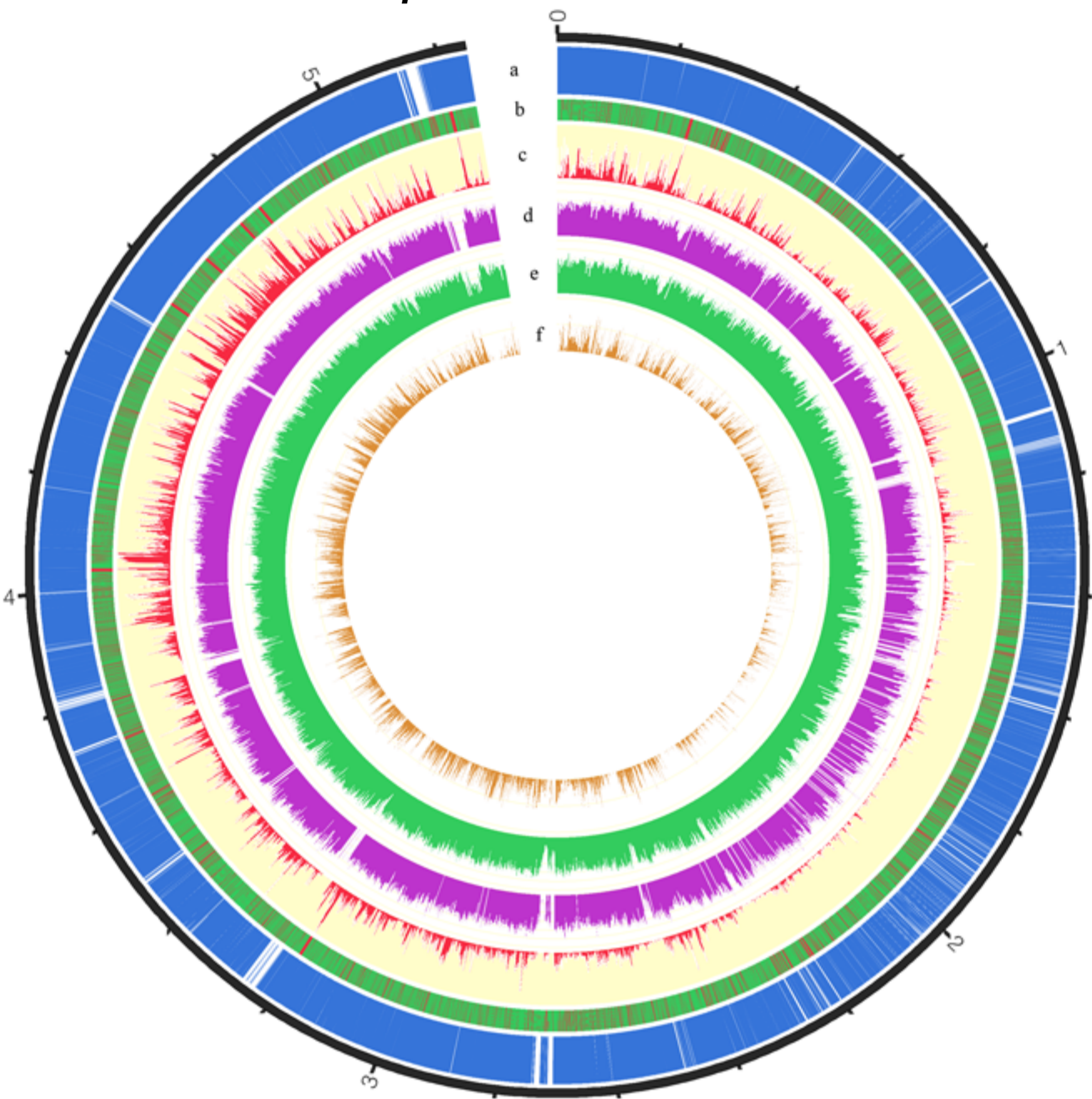
**Fig. S4.** A phylogenetic tree of shared OTUs for six amplified larval samples.



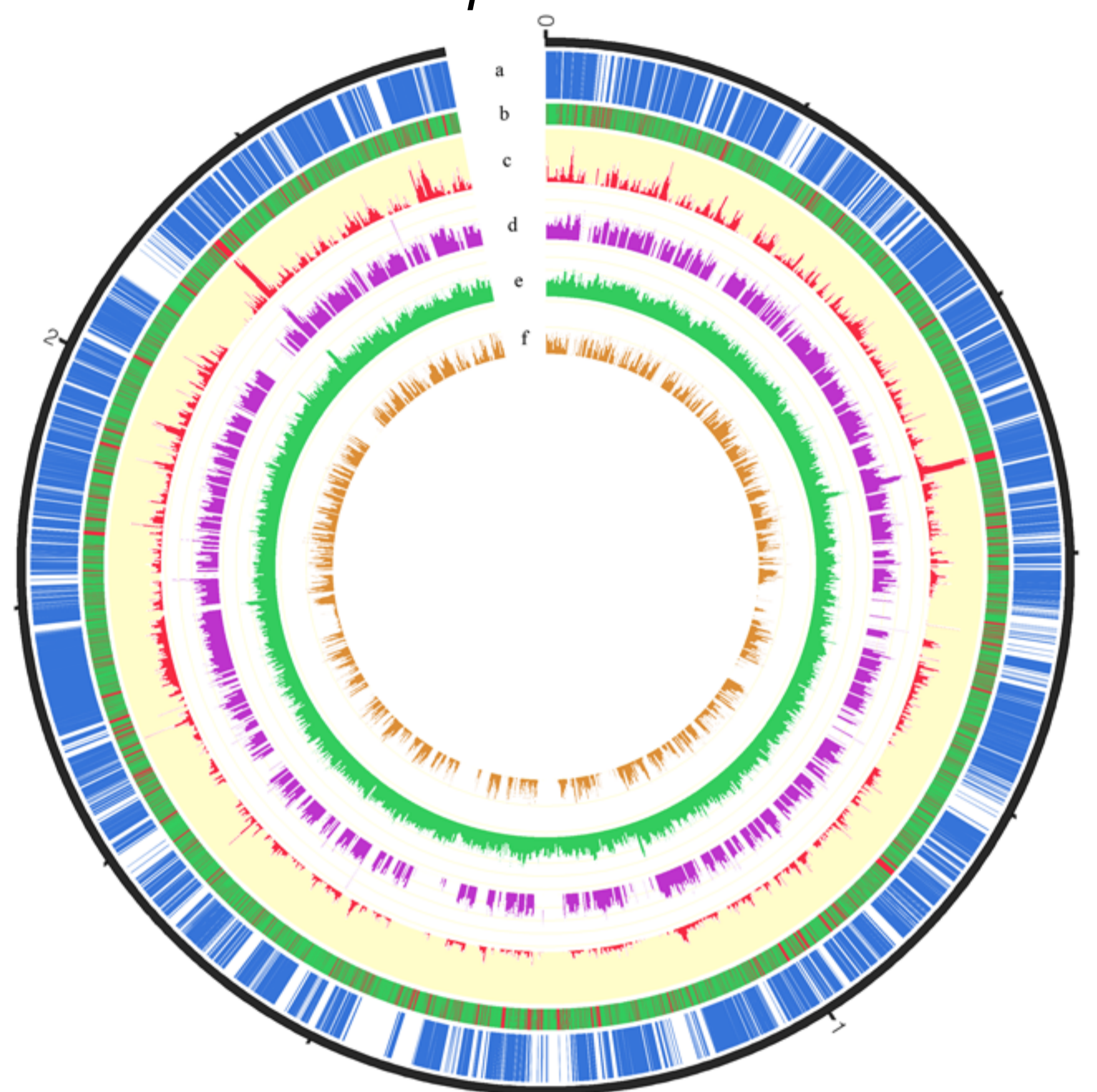
*Klebsiella pneumoniae* NTUH-K2044



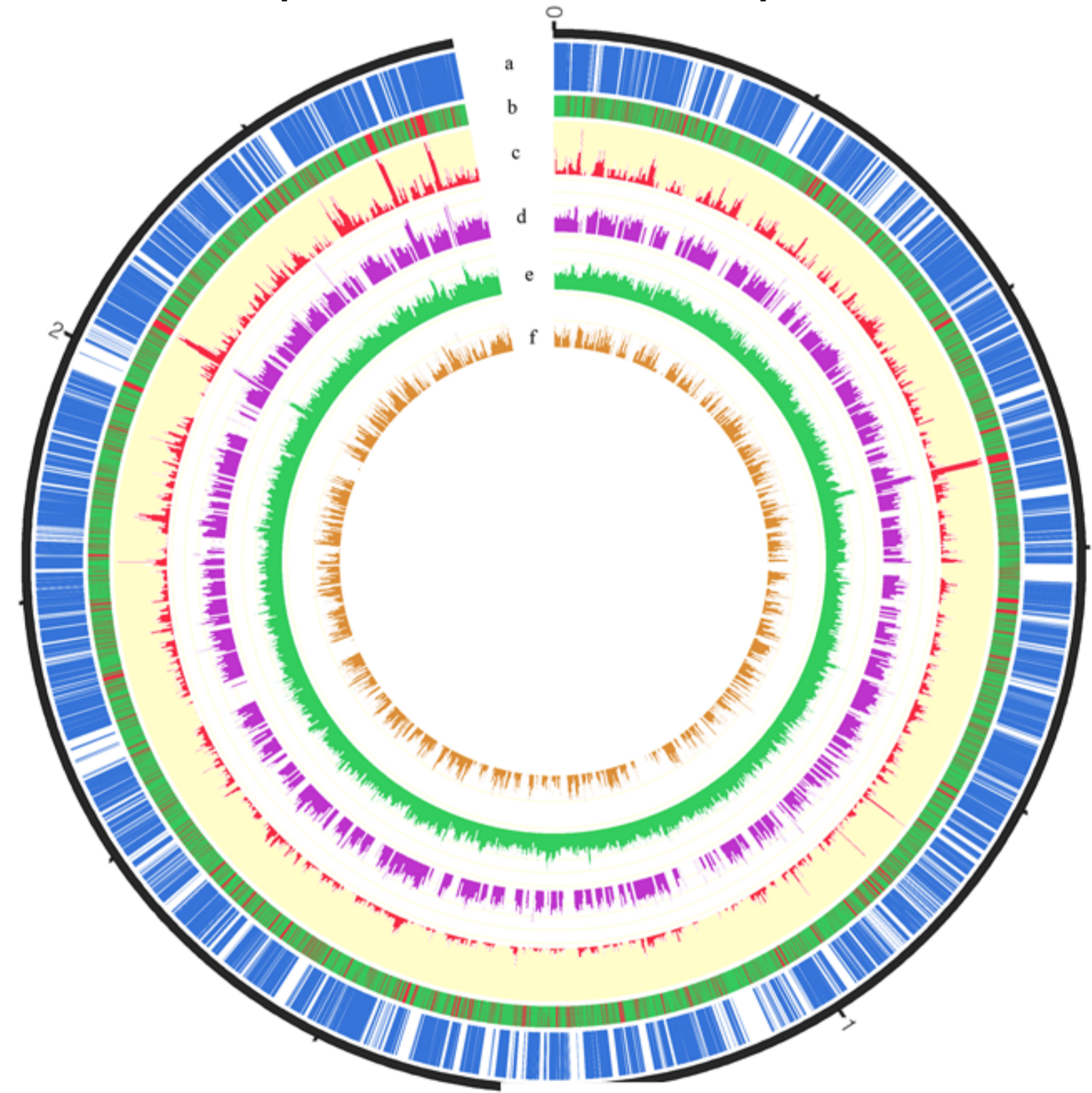
*Klebsiella pneumoniae* 342



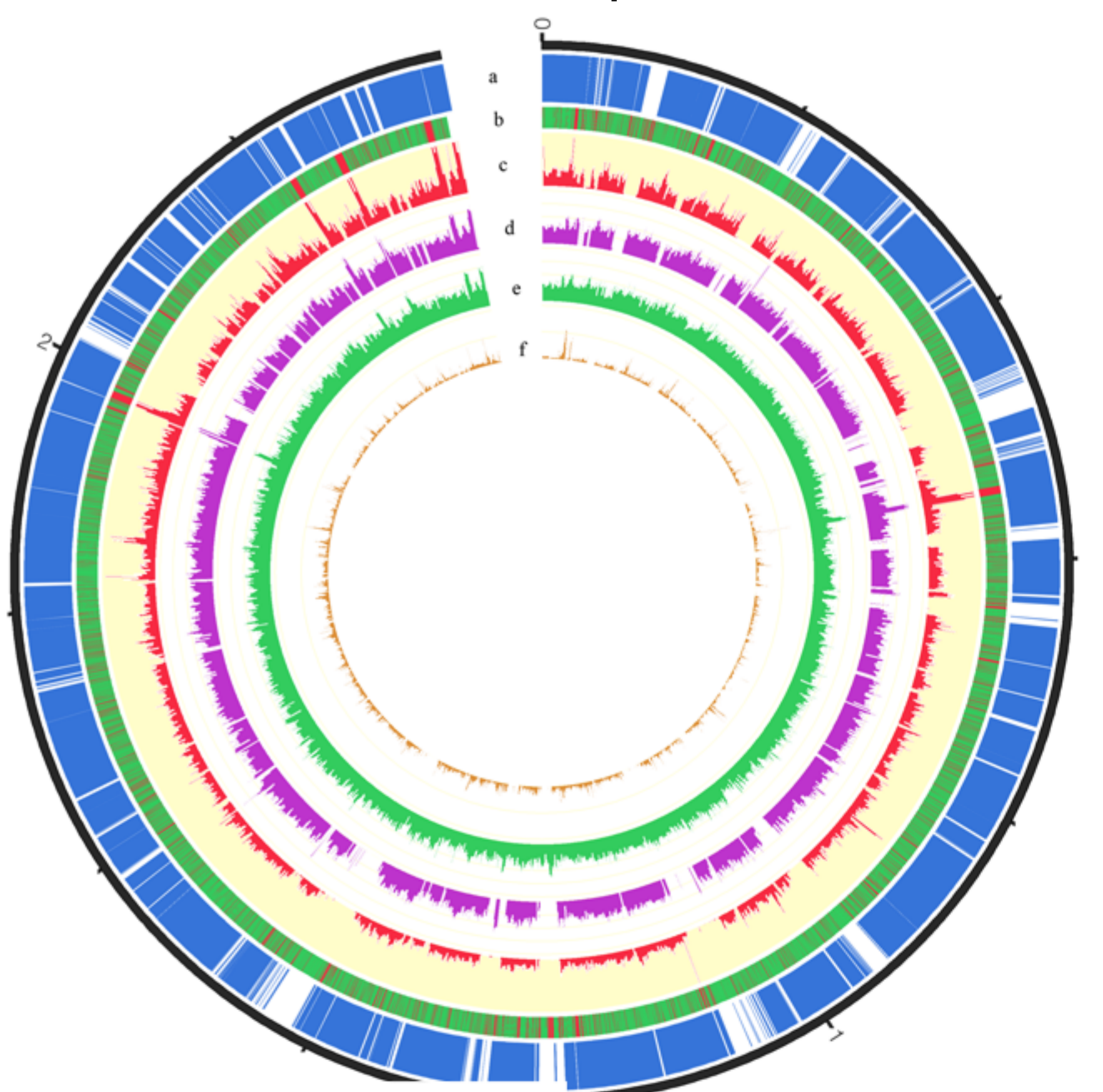
*Klebsiella pneumoniae* subsp. MGH 78578



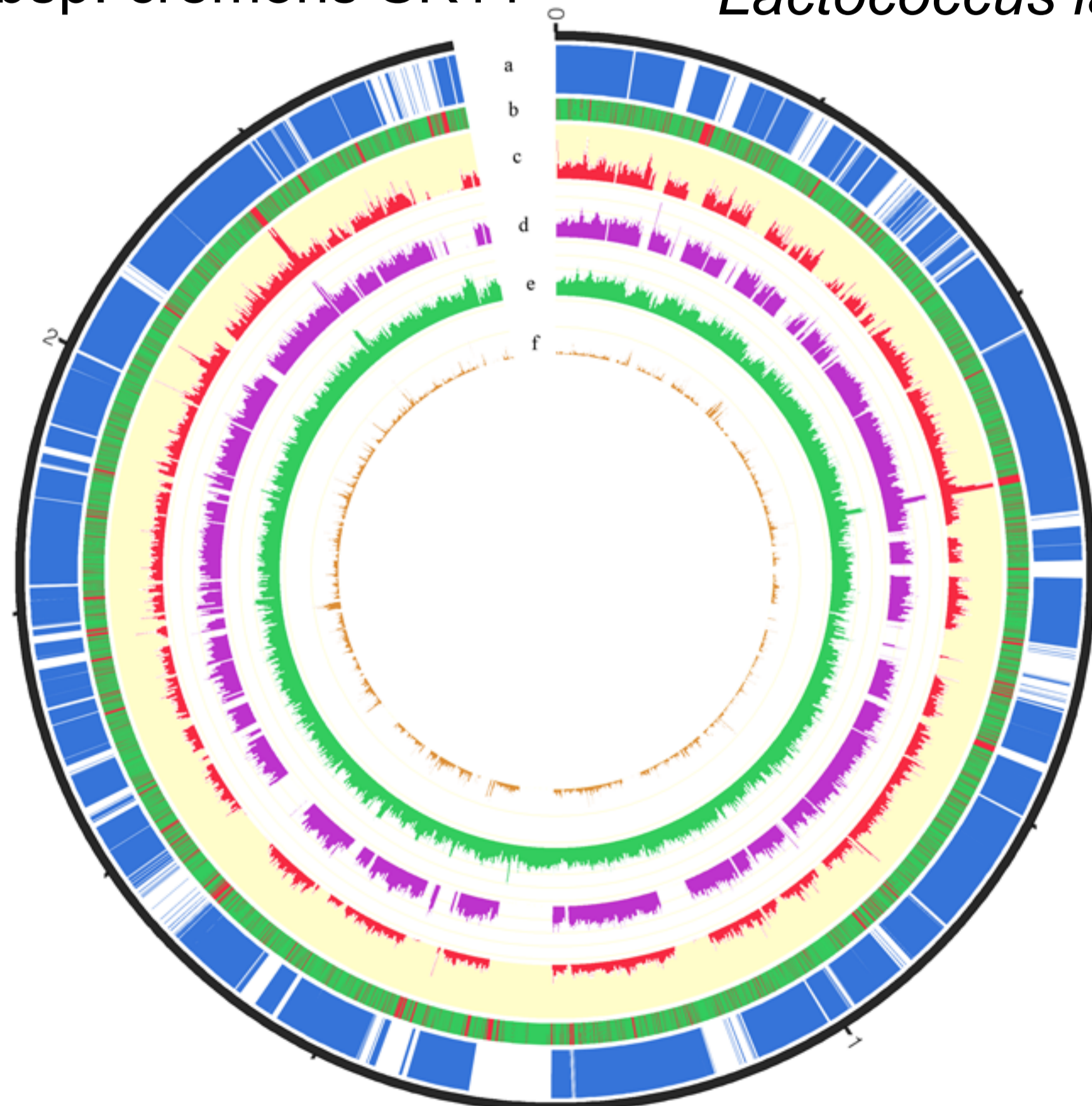
*Lactococcus lactis* subsp. cremoris MG1363



*Lactococcus lactis* subsp. cremoris SK11

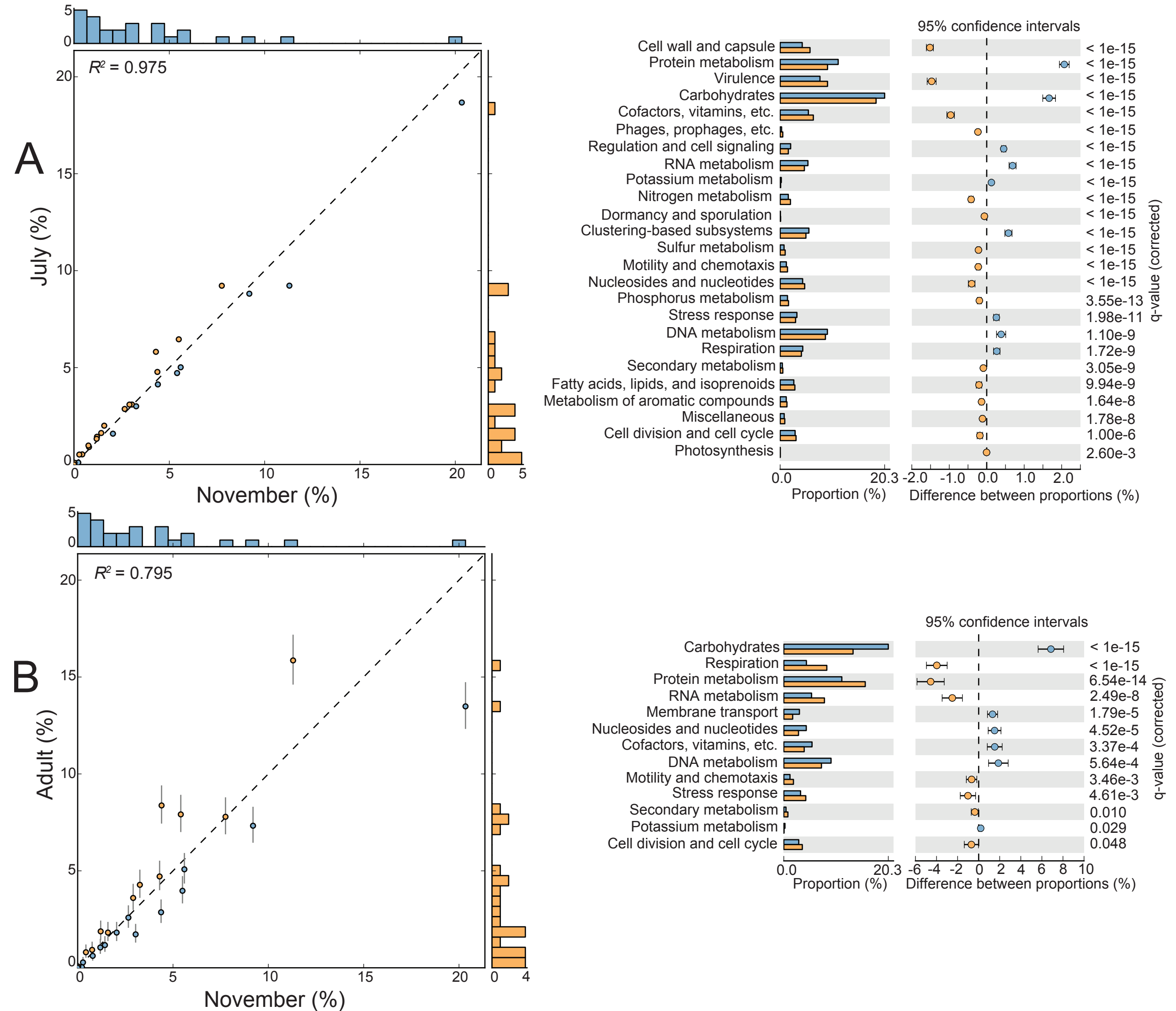


*Lactococcus lactis* subsp. lactis II1403



*Lactococcus lactis* subsp. lactis KF147

**Fig. S5.** Recruitment plot for *K. pneumoniae* and *L. lactis*.



**Fig. S6.** Pairwise comparison of functional compositions.