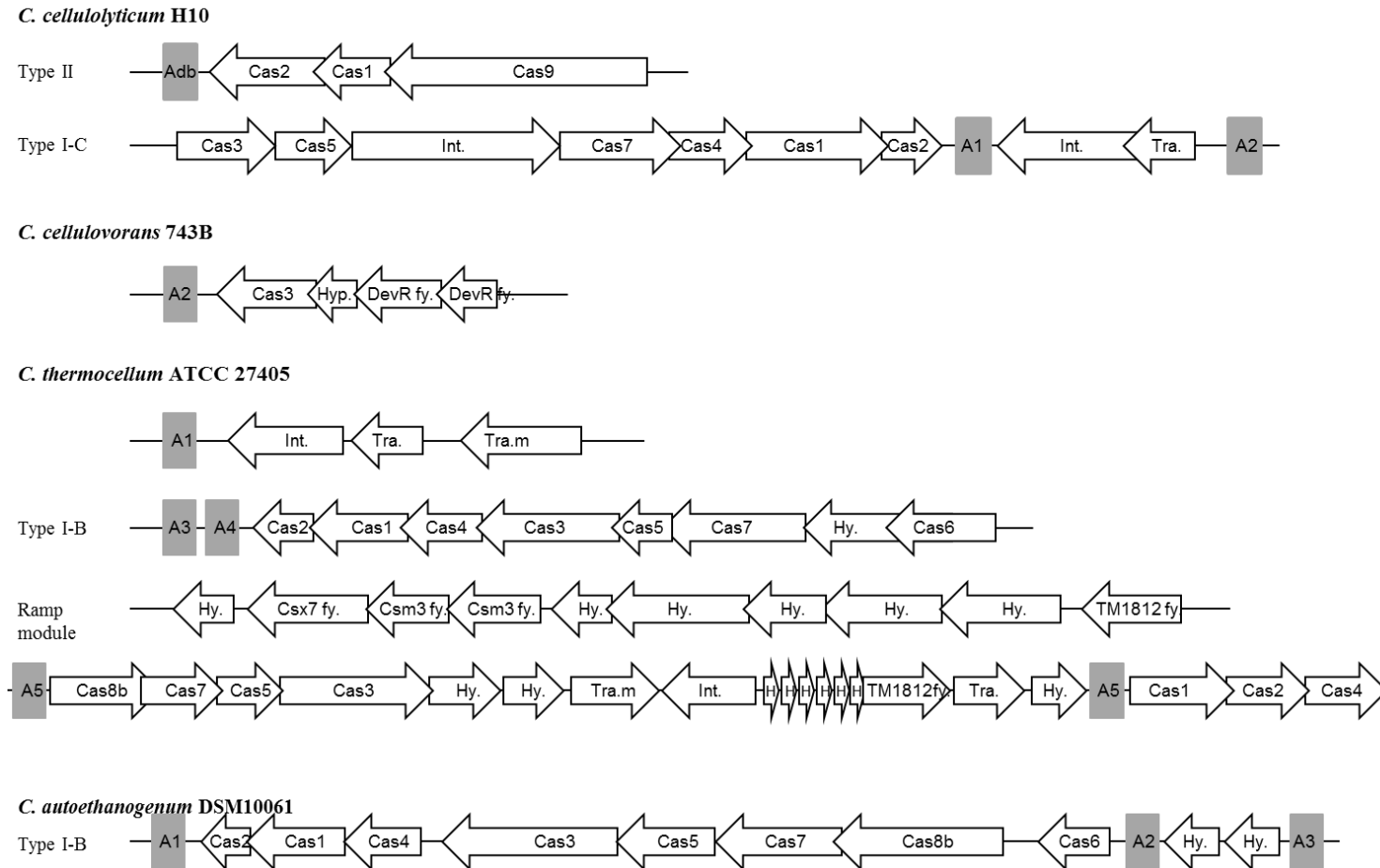


Additional file 11. Graphical representation of CRISPR-cas loci in *Clostridium* species. *cas* genes are represented by arrows and CRISPR arrays by shaded rectangles. The classification of *cas*-gene operon where could be identified is indicated. *cas* operons were classified based on a recent classification system [1].



1. Bhaya D, Davison M, Barrangou R: **CRISPR-Cas systems in Bacteria and Archaea: Versatile small RNAs for adaptive defense and regulation.** *Ann Rev Genetics* 2011, **45**:273-297.