



**Fig. 1, S1:** Tools for parasegment-specific ChIP-seq. **A.** A P element was constructed that initially expresses Gal4 from the P promoter, and transgenes were moved into the homeotic gene complexes by P element swapping. Recombination between the FRT sites flanking Gal4 convert the transgene into one expressing Gal80. **B.** A second P element expressed Gal4 or Gal80, driven by enhancers from the BX-C. The enhancers were positioned upstream of a promoter and a PRE from the *engrailed* locus. The PRE helps to maintain the restricted expression by the enhancer in older embryos. A cluster of binding sites for the Suppressor of Hair-wing protein flanks the enhancer, to block potential position effects at random chromosomal locations. **C.** Nuclei were sorted using Hoechst 33342 (to select only single nuclei) and mCherry fluorescence. Nuclei from wild type (Oregon R) embryos were used to set the fluorescence threshold. **D.** The flow chart from embryos to sequencing libraries is diagrammed; the procedure could be paused at either freezing step.