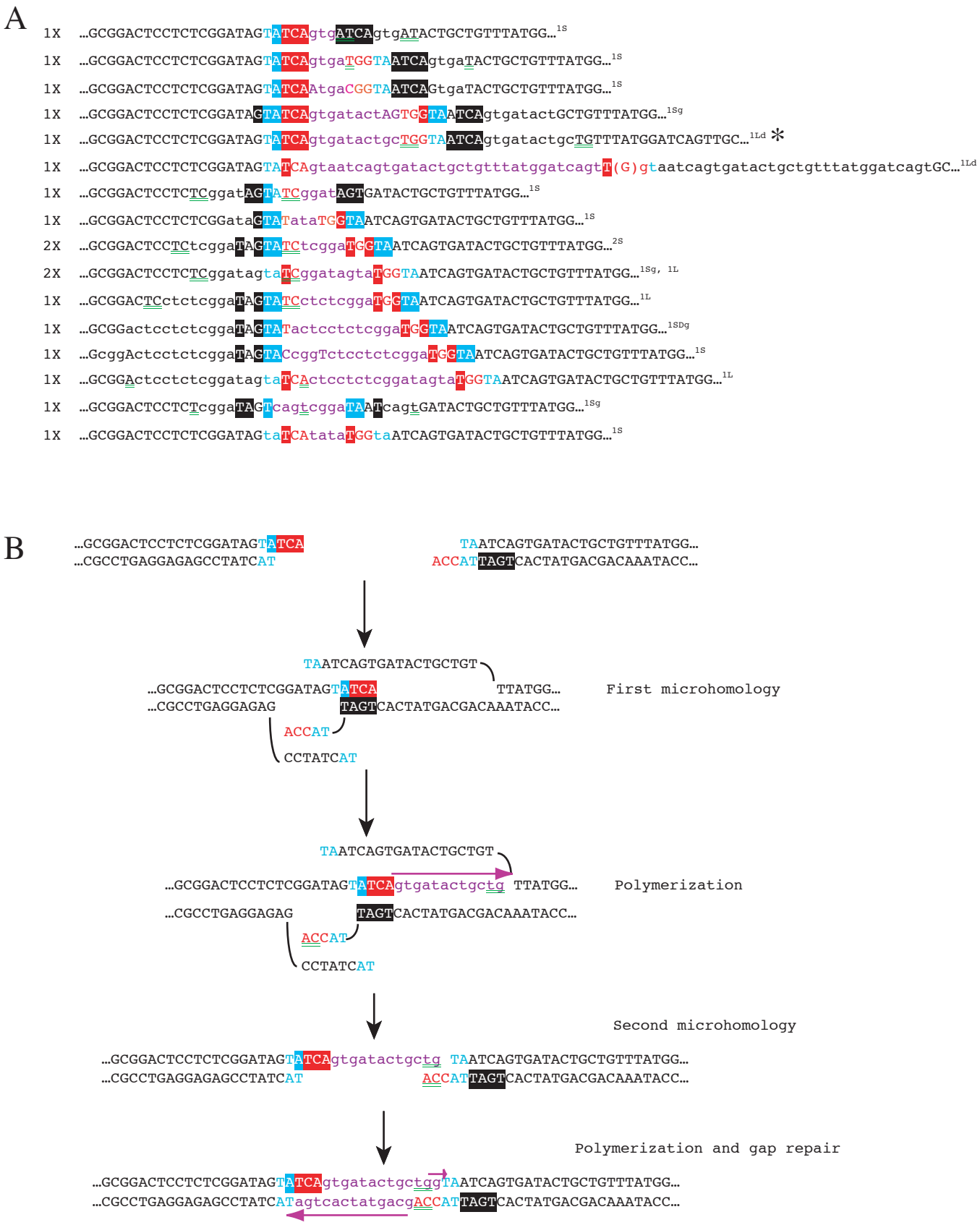


Figure S1: (A) Description of the Class III footprints. The regions of microhomology detected between the 3'-PSS and the region 5' to the duplicated sequence are highlighted whereas the regions of microhomology created between the de novo synthesized strand and the broken end are underlined in green. (B) Proposed mechanism. The footprints designed by an asterisk in A is used as an example. We assume that microhomology-mediated pairing takes place between one of the 3'-PSS and the region immediately 5' to the duplicated sequence. After pairing, polymerization occurs, which copies 8 bases on average (from 3 to 32). Subsequent end-joining, possibly mediated by microhomology, occurs between the de novo synthesized sequence and the broken end.