



**Figure S1.** The alternative (“fusion”) scenario of duplication and rearrangement history for VAC “A” according to the N-model. While the number and identity of post-2R daughter chromosomes in both scenarios (see Figure 2 in main text for the other scenario) is the same, the introduction of a *fission* event (red box) and elimination of a *fission* event (red box in Figure 2, main text) in this scenario results in two pre-2R chromosomes (A-I and A-II) each carrying one gene (a ligand gene on one, and a receptor gene on the other). Notice that according to this scenario *AncRln-like* was not syntenically linked to *AncRxp3/4* in the pre-2R vertebrate ancestor