Erratum

XRCC4:DNA ligase IV can ligate incompatible DNA ends and can ligate across gaps

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Since the publication of the above paper, the authors have identified typesetting errors in Figures 5B and 8A.

In Figure 5B in row X4-LIV of the left panel, lane 7 should be ‘+’ and lane 8 should be ‘–’ and, in row X4-LIV of the right panel, lane 9 should be ‘–’.

In Figure 8A the word incompatible was spelled incorrectly.

Please find below the correct figures in their entirety.

The typesetter would like to apologize for any inconvenience caused.

Figure 5 XRCC4:DNA ligase IV can ligate over a gap. (A) Two substrates with different lengths of terminal microhomology for ligation were designed to test the direct ligation over a gap by XRCC4:DNA ligase IV. There is a one-nucleotide gap on the ligatable strand. Only the favored joining product is shown under each substrate. An asterisk indicates the position of the radioisotope label. (B) Reactions were performed as in Figure 4B, except that all the reactions include 100 μM of ATP. (C) Dimer products from the selected lanes were cut out of the gel, extracted, and then PCR amplified, TA-cloned, and sequenced. The junction sequences for the ligatable strand were provided.

Figure 8 Function of XRCC4:DNA ligase IV in ligating incompatible DNA ends. (A) Ku and XRCC4:DNA ligase IV can ligate fully incompatible DNA ends. XRCC4:DNA ligase IV randomly bind to one DNA end, but this interaction is less stable than if Ku is also bound. Ku may stimulate the interaction by increasing the occupancy time of XRCC4:DNA ligase IV at the DNA end. When another DNA end comes close to this complex, XRCC4:DNA ligase IV binds it and ligates the two ends. (B) XRCC4:DNA ligase IV alone can ligate across a gap. XRCC4:DNA ligase IV randomly binds to one DNA end (although this interaction is not as stable as when Ku is present). The 2 bp of terminal microhomology between the DNA ends increases the chance for XRCC4:DNA ligase IV to ligate. (C) Template-independent polymerase activity of pol mu creates terminal microhomology for ligation by XRCC4:DNA ligase IV. Pol mu can add nucleotides to the DNA end in its template-independent mode. A 1 bp terminal microhomology between the DNA ends ('t' in this example) permits annealing of the ends and improves the efficiency of ligation.