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CORRECTION

Correction to: The development of genome editing tools as powerful techniques with versatile applications in biotechnology and medicine: CRISPR/Cas9, ZnF- and TALE-nucleases, RNA interference and Cre/*loxP*

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Correction to: ChemTexts (2021) 7:3
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1. We regret the incorrect designation of the site attacking the 3′-phosphotyrosine as 3′-hydroxyl group in the process following the formation of the Holliday junction intermediate to complete Cre/*loxP* mediated recombination of homologous DNA fragments.

The sentence in the section "The Cre/l*oxP* system" on page three is corrected as follows:

"The mechanism repeats with the other two Cre molecules of each dimer becoming active and the tyrosines attacking the phosphates in the DNA strands (in *cis*) and the free 5′-hydroxyl groups attacking the phosphotyrosines."

2. We regret the incorrect designation of the chi sequence as "*c*rossover *h*otspot *i*nvestigator" on page 9, right column. This must be corrected to "*c*rossover *h*otspot *i*nstigator". The sentence in the section "Genome editing using CRISPR/Cas9", subsection "Adaptation (spacer acquisition)", is corrected as follows:

"The RecBCD complex (Rec—recombination) is recruited to the DSBs (in Gram positive bacteria: AddAB) and unwinds the DNA using its helicase activities and subsequently degrades it until a chi sequence (chi—*c*rossover *h*otspot *i*nstigator) is reached."

3. We regret that the abbreviation sgRNA is incorrectly defined as "small guide RNA" in the manuscript. This is corrected to "single guide RNA" in the labels in Fig. 4c and Fig. 4f, and in the legends of Fig. 4 and 5. Fig. 4 is corrected.

The legend of Fig. 4c is corrected as follows:

c Structure of *Streptococcus pyogenes* Cas9 in complex with a single guide RNA (sgRNA) and target DNA (PDB code 4008). Shown is a crystal structure of Cas9 in cartoon representation. RuvC, BH, Rec1, Rec2, HNH, and PI domains are color coded as presented in the diagram showing the domain organization below the structure.

The legend of Fig. 5 is corrected as follows:

"Using Cas9 sgRNA for targeted genome editing. Cas9, single guide RNA, and a DNA fragment with homology arms complementary to the target DNA are delivered into the cell."

4. We regret that the order of the legends of subfigures in Fig. 3 is incorrect. The legend to Fig. 3a is the legend for Fig. 3c, legend to Fig. 3b is the legend for Fig. 3d, legend to Fig. 3c is the legend for Fig. 3e, legend to Fig. 3d is the legend for Fig. 3a, legend to Fig. 3e is the legend for Fig. 3b. Accordingly, the references to Fig. 3 in the text of section "Transcription activator-like effector proteins (TALEs) coupled to nucleases (TALENs)" is incorrect. Fig. 3a must be Fig. 3c, Fig. 3b must be Fig. 3d.

5. We regret the incorrect designation of the gene *csn2*, downstream of the *cas1* and *cas2* genes, with *csn1* in Fig. 4a. The *cas9/csn1* gene encodes for the CRISPR-associated endonuclease Cas9/Csn1, the gene *csn2* for the CRISPR-associated protein Csn2. Fig. 4 is corrected.

The original article can be found online at https://doi.org/10.1007/s40828-020-00126-7.

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