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(56) Documents Cited:
WO 2020/131862 A1 WO 2017/029485 A1
NCBI, Grenbank accession no. HAX9317.1,
(06/09/2018)
PETERS, J.E. "Targeted transposition with Tn7
elements: safe sites, mobile plasmids, CRISPR/Cas
and beyond", Molecular Microbiology 2019, Vol. 112
No.6, pages 1635-1644
PETERS, K.E. et al., "Recruitment of CRISPR-Cas
system by Tn7-like transposons", PNAS 2017,
VOL.114, No.35, pages E7358-E7366

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(54) Title of the Invention: **Systems and methods for transposing cargo nucleotide sequences**
Abstract Title: **Systems and methods for transposing cargo nucleotide sequences**

(57) The present disclosure provides systems and methods for transposing a cargo nucleotide sequence to a target nucleic acid site. These systems and methods may comprise a first double-stranded nucleic acid comprising the cargo nucleotide sequence, wherein the cargo nucleotide sequence is configured to interact with a recombinase or transposase complex, a cas effector complex comprising a cas effector and at least one engineered guide polynucleotide configured to hybridize to the target nucleic acid site, and the recombinase or transposase complex wherein said recombinase or transposase complex is configured to recruit the cargo nucleotide to the target nucleic acid site.

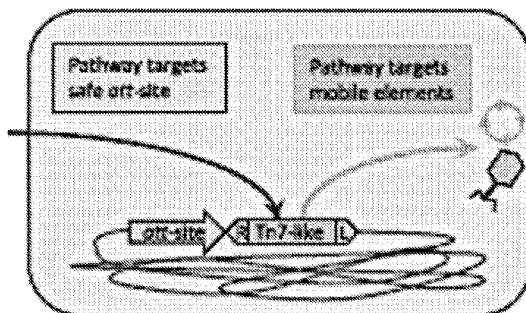


FIG. 3