Circular Polymerase Extension Cloning For High Throughput

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Circular polymerase extension cloning for high-throughput ...

Here, we describe an extremely simple, efficient, and cost-effective cloning method, circular polymerase extension cloning (CPEC), for complex, combinatorial, or multi-fragment assembly as well as routine cloning. This method uses a single polymerase to assemble and clone multiple inserts with any vector in a one-step reaction in vitro.

Polymerase Incomplete Primer Extension (PIPE) Cloning Method

This method extends overlapping regions between the insert and vector fragments to form a complete circular plasmid and is therefore named “Circular Polymerase Extension Cloning”. In the current study, we elucidate the reaction mechanism and demonstrate the broad utility and advantages of CPEC in cloning of synthetic genes, complex combinatorial libraries and metabolic pathways.

Circular(Polymerase(ExtensionCloning(

The basic mechanism behind Circular Polymerase Extension Cloning (CPEC), a technique published in PLoS One in 2009 by Quan J. and Tian J.

Circular Polymerase Extension Cloning | SpringerLink

Circular polymerase extension cloning (CPEC) method [25], reported to be effective for addition and deletion of protein modules inside plasmids, is used to clone the chimaeric scaffoldins.

PROTOCOL Circular polymerase extension

cloning for high ...

entirely on the polymerase extension mechanism. This method extends overlapping regions between the insert and vector fragments to form a complete circular plasmid and is therefore named ‘‘Circular Polymerase Extension Cloning’’. In the current study, we elucidate the reaction mechanism and demonstrate the

White and green screening with circular polymerase ...

Phusion DNA polymerase was better suited for overlap extension PCR cloning than the

competitors we tested (Supplementary Table S1), perhaps due to its superior processivity and fidelity . Phusion DNA polymerase is 10× more processive than the native Pfu polymerase (Cat. no. 600135; Stratagene, La Jolla, CA, USA), and produced 46× more colonies (Supplementary Table S1).

Circular Polymerase Extension Cloning (CPEC)

Ligation independent cloning procedures, such as circular polymerase extension cloning (CPEC), requires fewer steps and enzymes making the procedure more cost?effective and efficient. 1, 2 However, CPEC often results

in high vector background because it is difficult to completely purify linearized vector from the original plasmid (see Fig. 1).

CPEC– a Quick and Inexpensive Cloning Strategy

A brief description of circular polymerase extension cloning, a molecular subcloning technique. References: https://bitesizebio.com/44113/cpec-a-quick-and-in...

Circular Polymerase Extension Cloning - ResearchGate

The strategy, called circular polymerase extension cloning (CPEC), is based on polymerase overlap extension and is therefore free of restriction digestion, ligation or single-stranded homologous ...

Circular Polymerase Extension Cloning of Complex Gene ...

Circular polymerase extension cloning for high-throughput cloning of complex and combinatorial DNA libraries. Quan J, Tian J. Nat Protoc, 6(2):242-251, 03 Feb 2011 Cited by: 109 articles | PMID: 21293463

Circular polymerase extension cloning for high-throughput ...

Circular polymerase extension cloning (CPEC) is a simple, efficient and economical circular DNA assembly and cloning method developed to meet the ever-increasing demand from high-throughput genomics, proteomics and synthetic biology. In addition to routine single-gene cloning, CPEC is ideal for a

Circular Polymerase Extension Cloning of Complex Gene ...

1. Methods Mol Biol. 2014;1116:103-17. doi: 10.1007/978-1-62703-764-8_8. Circular

polymerase extension cloning. Quan J(1), Tian J. Author information: (1)Department of Biomedical Engineering and the Institute for Genome Sciences and Policy, Duke University, Durham, NC, USA. High-throughput genomics, proteomics, and the emerging field of synthetic biology demand ever more convenient, economical ...

RF Cloning

Linearizing)your)vector) Digest(where(you(want(to(put(your(insert(in.(If(there's(no(convenient(cut(site,(then(you(can(also(linearize(with(PCR(primers(thatrun(AWAY ...

Circular polymerase extension cloning of complex gene ...

The Polymerase Incomplete Primer Extension (PIPE) method applied to high-throughput cloning and site-directed mutagenesis. Methods Mol Biol. 2009;498:91–103. Klock HE et al. (2008) Combining the polymerase incomplete primer extension method for cloning and mutagenesis with microscreening to accelerate structural genomics efforts. Proteins.

Overlap extension PCR cloning: a simple and

reliable way ...

Quan J, Tian J (2009); Circular Polymerase Extension Cloning of Complex Gene Libraries and Pathways. PLoS ONE 4(7): e6441. Quan J, Tian J (2011); Circular polymerase extension cloning for high-throughput cloning of complex and combinatorial DNA libraries. Nature Protocols 6, 242–251.

Circular Polymerase Extension Cloning For

High-throughput genomics and the emerging field of synthetic biology demand ever more convenient, economical, and efficient

technologies to assemble and clone genes, gene libraries and synthetic pathways. Here, we describe the development of a novel and extremely simple cloning method, circular polymerase extension cloning (CPEC).

Circular polymerase extension cloning. - Abstract - Europe PMC

A: RF cloning (aka overlap extension PCR cloning, or ligation independent cloning) is a PCR-based method for the creation of custom DNA plasmids. Essentially, it allows for the insertion of any sequence into any position within any plasmid, independent of

restriction enzyme recognition sites or homologous recombination sites within these sequences*.

Circular Polymerase Extension Cloning of Complex Gene ...

Circular polymerase extension cloning of complex gene libraries and pathways. Quan J(1), Tian J. Author information: (1)Department of Biomedical Engineering & Institute for Genome Sciences and Policy, Duke University, Durham, North Carolina, United States of America.

Circular polymerase extension cloning.
The strategy, called circular polymerase extension cloning (CPEC), is based on polymerase overlap extension and is therefore free of restriction digestion, ligation or single-stranded homologous recombination. CPEC is highly efficient, accurate and user friendly.