METHOD OF REPLICATING OR AMPLIFYING CIRCULAR DNA

ABSTRACT

Provided is a method capable of replicating or amplifying circular DNA, and particularly, long-chain circular DNA, in a cell-free system. Specifically, provided is a method for suppressing generation of a DNA multimer as a by-product, when circular DNA having a replication origin sequence (origin of chromosome (*oriC*)) is replicated or amplified by using the following enzyme groups:

(1) a first enzyme group that catalyzes replication of circular DNA;

(2) a second enzyme group that catalyzes an Okazaki fragment maturation and synthesizes two sister circular DNAs constituting a catenane; and

(3) a third enzyme group that catalyzes a separation of two sister circular DNAs. Moreover, also provided is a method comprising introducing *oriC* into circular DNA by using a transposon.