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OriCiro launches world's first cell-free circular DNA amplification technology

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Unleashes the potential of synthetic biology enabling efficient engineering of biological functions of microbes



Japanese firm OriCiro Genomics, a pioneer in the cell-free synthesis and amplification of genome-scale large DNA for gene therapy and synthetic biology, has launched the OriCiro™ Cell-Free Cloning System, the world's first technology enabling cell-free amplification of large circular DNA, eliminating the reliance on *E. coli* cloning.

Currently, researchers in life sciences use cell-based methods to clone large DNA molecules. Although these approaches remain the gold standard, they are infamous for being time-consuming, inefficient, and unable to deal with cell-toxic DNA sequences. The OriCiro™ Cell-Free Cloning System solves all these problems.

The OriCiro™ Cell-Free Cloning System comprises the OriCiro™ Assembly Kit and OriCiro™ Amp Kit. A simple two-step *in vitro* process enables cell-free assembly and amplification of circular DNA molecules without the need for *E. coli* transformation and culture.

- **OriCiro™ Assembly**

A simple one-step process enables the seamless assembly of multiple DNA fragments via homologous overlapping ends (40bp). A unique enzymatic annealing feature enables simultaneous assembly of up to 50 fragments in just 30 minutes.

- **OriCiro™ Amp**

The kit contains a mixture of 26 purified proteins that reconstitutes the *E. coli* genome propagation process *in vitro*, exhibiting outstanding performance in amplifying large DNA molecules, up to 1 Mbp in size, with extremely high fidelity. Circularized assembled molecules from the assembly reaction are selectively amplified during several hours of isothermal incubation to yield a high concentration of pure, super-coiled circular DNA.

"OriCiro™ Cell-Free Cloning System removes the bottlenecks of conventional E. coli cloning and unleashes the potential of synthetic biology enabling efficient engineering of biological functions of microbes" said Dr. Masayuki Su'etsugu, Professor of Rikkyo University and the CSO of OriCiro Genomics.

This product will be available for purchase beginning October 16, 2020 for customers in non-profit organizations on the e-commerce platform.