

Cell-free Synthesis of Transfection-grade Plasmid DNA for Automated Processing

Daiichi Sankyo, a global pharmaceutical company, is seeking a fully **cell-free, *in vitro*** technology capable of **synthesizing and amplifying plasmid DNA** without relying on *E. coli*.



Approaches of Interest:

- **Recombination Assembly Methods**
 - Methods that can reproduce a highly efficient homologous recombination system of microorganisms *in vitro*, resulting in seamless DNA ligation
 - Methods that can correctly assemble and integrate 50 or more DNA fragments at once via a timely (less than 30 minute) isothermal reaction
- **Replication Cycle Reaction Methods**
 - Able to mimic the *E. coli* genome replication system *in vitro* using a reconstituted set of proteins for amplification
 - Amplification of a single circular DNA molecule in a time-effective manner
 - Enables amplification of long circular DNA molecules exceeding 10 kb *in vitro*
 - Can achieve high application accuracy, exceeding that of traditional PCR

Out of Scope:

- Replication systems in *E. coli*
- Technologies costing over ten times more than conventional *E. coli* culture methods
- Technologies requiring dedicated equipment with initial investments exceeding 100 million yen
- Methods taking over one week per plasmid to generate
- Opportunities relating to minicircle DNA or mRNA

Developmental Stages of Interest:

- Daiichi Sankyo is seeking basic research accompanied by experimental verification
- Methods must be established

Submission Information

Submission of one-page, 200–300-word briefs is encouraged, along with any optional supplementary information e.g. relevant publications. In submitting to this campaign, you confirm that your submission contains only non-confidential information.

Opportunity for Collaboration

Our client is open to a range of collaboration opportunities, with the most appropriate outcome being decided on a case-by-case basis. Example outcomes include licensing assets, project/PhD funding, and research collaborations.

Opportunities sought

-  Technologies
-  Academics and expertise
-  Centres of excellence
-  Research projects
-  Company profiles
-  Biotech assets

Submissions

Please submit relevant, non-confidential opportunities online [here](#)

Deadline: **2nd March 2026 - 11:59 pm GMT**

Have any questions?

Contact our team at campaigns@inpart.io