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PII: S1369-703X(18)30129-3
DOI: https://doi.org/10.1016/j.bej.2018.04.010
Reference: BEJ 6930

To appear in: *Biochemical Engineering Journal*

Received date: 27-12-2017
Revised date: 29-3-2018
Accepted date: 16-4-2018

Please cite this article as: Tomioka K, Yamaguchi T, Inoue M, Kajiwara K, Liposome-linked immunosorbent assay enhanced by immuno-PCR using plasmid-encapsulated liposomes, *Biochemical Engineering Journal* (2010), https://doi.org/10.1016/j.bej.2018.04.010

Liposome-linked immunosorbent assay enhanced by immuno-PCR using plasmid-encapsulated liposomes

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Highlights

- Liposomes including plasmid DNA are synthesized for the DNA-antigen conjugate.
- The number of signal plasmid DNA molecules per liposome was found to be 2115.
- Competitive iPCR-liposome immune-sorbent assay was performed for antigen measurement.
- Competitive assay using antigen-coupled liposomes encapsulating CF was also performed.
- Both methods have a wider measurable concentration range and same detection limit.

Abstract

A liposome immunosorbent assay enhanced by immuno-PCR (iPCR-LISA) using antigen-coupled liposomes encapsulating a signal plasmid (pCR-script Amp Ks(+)), was developed for the competitive measurement of antigens. The number of signal plasmid DNA molecules per liposome was found to be 2115. Signal plasmid concentration was determined by SYBR-Green real-time PCR, in which the multi-cloning site (MCS) region of the plasmid was amplified using M13 primer sets. The threshold cycle value (C_T) was correlated to antigen concentration. A competitive