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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

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