

## ハイスループット光濃縮検査法の開発による感染症予防への展開

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Development of high-throughput testing method with optical condensation for prevention of infectious diseases

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We are promoting the research and development on a “Light-induced acceleration system (LAC-SYS)” that enables us to accelerate the biochemical reactions by condensation of biological samples with the synergistic effects of light-induced force and light-induced convection under laser irradiation<sup>1)-8)</sup>. This technology can shorten the detection process of trace amounts of samples within several minutes, and enables highly sensitive measurements exceeding conventional methods taking several hours.

In this talk, we will discuss the prospects for high-throughput testing method of microbes such as bacteria and viruses using LAC-SYS and for the prevention of infectious diseases.

**Keywords :** *Optical condensation, Light-induced acceleration system (LAC-SYS), Biochemical reaction, Microbe*

我々はレーザー照射下での光誘起力と光誘起対流の相乗効果により、生体サンプルを光濃縮して反応加速する「光誘導加速システム(LAC-SYS)」の研究開発を推進している<sup>1)-8)</sup>。この技術は数時間を要していた微量検出プロセスを数分レベルにまで短縮でき、従来法を凌駕する高感度計測を可能とする。

本講演では LAC-SYS を用いた細菌やウイルスなどの微生物検査法のハイスループット化と感染症予防への展開について議論する。

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