

세미나 초록

성명	전형진
소속	오상헬스케어
발표 주제	분자진단의 미래: 동결건조 기술의 적용 가능성
발표 내용	<p>Molecular diagnostics play a crucial role in early disease detection due to their high sensitivity and specificity. However, most commercially available diagnostic reagents require refrigeration or freezing for storage, posing logistical and cost-related challenges. To overcome these limitations, OSANG Healthcare explored the potential of lyophilization technology to develop molecular diagnostic reagents and reaction systems that can be stored at room temperature. Various enzymes and reagents were lyophilized and evaluated for performance in PCR assays, as well as for stability under different storage conditions. The results demonstrated that lyophilized reagents maintained high enzymatic activity even after several months of storage at 25°C and 45°C, showing comparable diagnostic accuracy to conventionally stored reagents. These findings suggest that lyophilization technology could enhance the accessibility and cost-effectiveness of molecular diagnostics by eliminating cold-chain storage requirements, improving point-of-care testing (POCT) applicability, and facilitating rapid responses to emerging infectious diseases. Based on these results, future studies will focus on evaluating long-term stability using clinical samples and assessing the feasibility of mass production.</p> <p>Keywords: Molecular diagnostics, Lyophilization, Room temperature storage, Polymerase chain reaction, Cold-chain</p>