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Protein Purification using Solid-Phase Extraction on Temperature-Responsive Hydrogel-Modified Silica Beads

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Highlights

- A temperature-responsive SPE system for the purification of proteins was developed.
- Targeted proteins were retained on the hydrogel surface at 40°C and eluted at 4°C.
- Lysozyme was successfully separated from ovalbumin without loss of activity.
- Rituximab, a monoclonal antibody, was purified from hybridoma cell culture media.

ABSTRACT

Recently, the importance of biopharmaceuticals in medical treatments has been increasing, and effective protein purification methods are strongly required for their production. In the present study, a temperature-responsive solid-phase extraction (SPE) column was developed for the purification of proteins without affecting their bioactivity. A temperature-responsive polymer