

Primary capture of high molecular weight nucleic acids using aqueous two-phase systems

ABSTRACT

The practical feasibility and generic applicability of the selective partition of plasmid DNA (pDNA) and RNA in polyethylene glycol 300 (PEG-300) and di-potassium hydrogen phosphate aqueous two-phase systems (ATPS) by addition of NaCl salt was investigated with partially disrupted *Escherichia coli* (*E. coli*) cell paste. The process yielded a relatively protein-free pDNA solution with 89.5% pDNA recovery while low molecular weight RNA was partially removed. The results gained here led the way to an alternative process options for the processing of pDNA. A reproducible process involving two extraction steps to recover pDNA from partially disrupted *E. coli* cell paste was developed and is presented here.

Keyword: Selective partition; Plasmid DNA; ATPS; NaCl; *E. coli* cell paste