



A Novel Approach for dsRNA Removal on Oligo dT with Acidic Denaturation

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Background: In vitro transcription (IVT) reaction which produces mRNA also generates double-stranded RNA (dsRNA) impurities, which can trigger immune response, induce proinflammatory cytokines, reduce translational efficiency, and limit therapeutic efficacy. Although upstream strategies can reduce dsRNA formation, effective removal during downstream purification remains essential. **Method:** Here, we present a novel purification approach based on transient pH-induced disruption of hydrogen bonding, which separates truncated and complementary RNA strands from full-length mRNA. **Results:** When coupled with Convective interaction media (CIM)[®] Oligo dT chromatography, this enables selective capture of polyadenylated full-length transcripts. **Conclusion:** ACDT method (Acidic Denaturation coupled with Oligo dT purification) is a fast, efficient, scalable, and high-recovery method for dsRNA removal, without the use of organic solvents