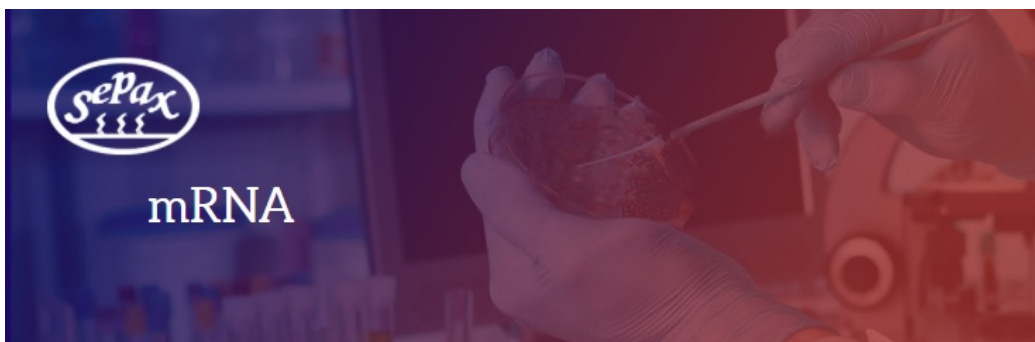
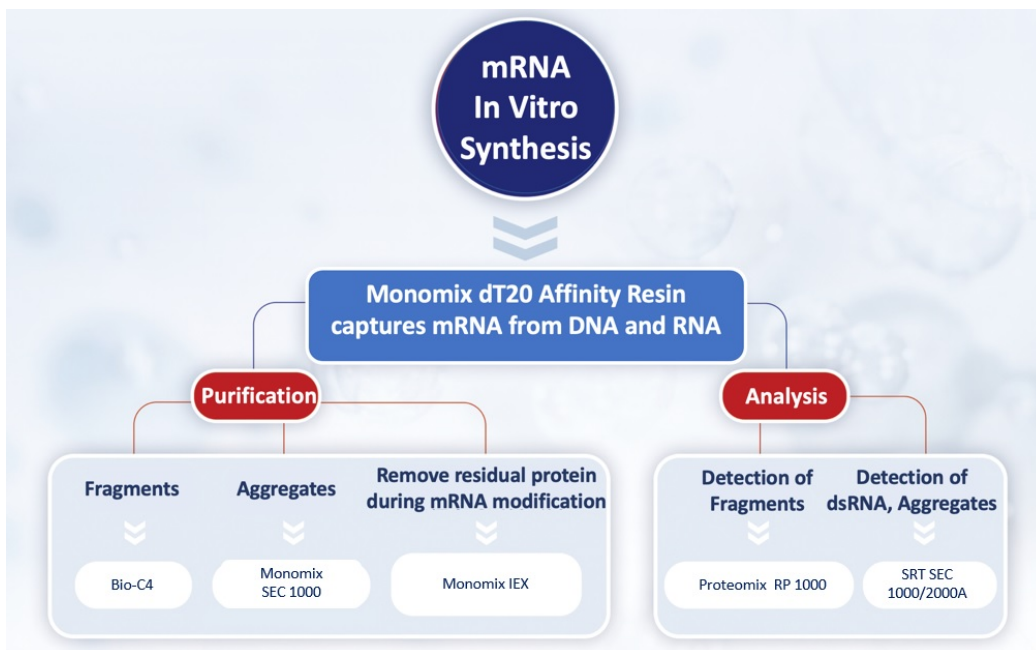


mRNA Purification and Analysis with Sepax Technologies, Inc.



Purification Analysis of mRNA Vaccine

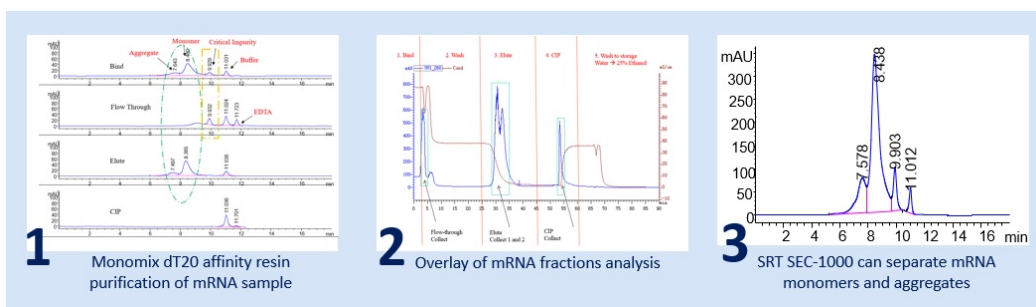
The application of mRNA in the therapeutic and vaccine fields has led to a worldwide demand in chromatography technology for both analytical and manufacturing processes. mRNA drug and research development require robust and competent methods to evaluate mRNA integrity which is essential for therapeutic effect and/or immunogenicity.



Sepax offers a total solution package for mRNA purification analysis to help you improve mRNA purity and reduce side effects.

Check out our [Bio-C4 Resins](#), [Monomix SEC 1000 Columns](#), [Monomix IEX HC/MC Resins](#), [Proteomix RP 1000 Columns](#), and our [SRT SEC 1000 and 2000 A Columns](#).

Flow chart of Sepax mRNA purification analysis:



Featured Product: Sepax Monomix dT20 Affinity Resin

Sepax Monomix dT20 Affinity Resin is 30 µm narrowly dispersed polymethacrylate rigid base bead is functionalized with a polyhydroxylated surface coating layer that provides a bioinert surface and shows low non-specific binding. The resin surface of Monomix dT20 can capture mRNA through base pairing between oligo dT20-mer and the mRNA polyA tail, which can be utilized to simplify the subsequent purification steps and maximize overall production efficiency. After purification, quality consistency of purified mRNA was accessed by Size exclusion chromatography SEC method, here using Sepax SRT SEC-1000 column.

Slide 1 shows the complete running sequence (including Bind, Wash, Elute, CIP and Storage stages) of a simplified purification process of mRNA using Monomix dT20 affinity resin. *Slide 2* shows the stack SEC profiles of initial mRNA sample (a) and the fractions collected from Wash (b), Elute (c), and CIP (d) stages on SRT SEC-1000 column.

In mRNA therapeutic development, size exclusion chromatography SEC has been utilized for its quick reliable method in many applications such as purification or aggregate quantification. *Slide 3* shows the application of separating single stranded mRNA monomer, its aggregates including possible double stranded mRNA and mononucleotides. Additionally, Reverse-phase (RP) chromatography can also be used as an orthogonal method for further characterization of each SEC peak.

mRNA Separation- SEC and RP

Application Note

mRNA Separation- Affinity and SEC

Application Note

See how these Sepax products are being used. Check out these Literature References:

For SEC Purification:

Intratumoral Delivered Novel Circular mRNA Encoding Cytokines for Immune Modulation and Cancer Therapy

Yang, Jiali, et al. "Intratumoral Delivered Novel Circular mRNA Encoding Cytokines for Immune Modulation and Cancer Therapy." bioRxiv (2021).

For Analytical SEC:

A novel mechanism for the loss of mRNA activity in lipid nanoparticle delivery systems

Packer, Meredith, et al. "A novel mechanism for the loss of mRNA activity in lipid nanoparticle delivery systems." Nature communications 12.1 (2021): 1-11.

Order Information

SRT SEC-1000, 5 µm, 1000 Å, 7.8 x 300 mm

Part Number: 215950-7830

Proteomix RP-1000, 5 µm, 1000 Å, 2.1 x 100 mm

Part Number: 465950-2110

Monomix dT20 Affinity Resin 1 mL, 5 mL resin

Part Number: 283030950-0000

Monomix dT20 Affinity Resin 4.2 mL cartridge

Part Number: 283030950-75100

Monomix dT20 Affinity 2.1 x 50 mm PEEK

Part Number: 283030950P-2105

Monomix dT20 Affinity 4.6 x 50 mm PEEK

Part Number: 283030950P-4605

Resins and Columns are available for all your purification needs as well. Request a quote today!

Visit our website for more information: [Sepax-Tech.com](https://www.sepax-tech.com)
Questions? Contact us today: 1-877-SEPAX-US

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