

Sepax Monomix dT20 Affinity Resin

Sepax Monomix dT20 Affinity Resin: 30 μm narrowly dispersed polymethacrylate rigid base bead is functionalized with a polyhydroxylated surface coating layer that provides a bio-inert surface and shows low non-specific binding. Oligo dT20-mer is then conjugated to bead surface through a proprietary method. The resulting affinity resin is specially designed and highly optimized for the isolation of messenger RNA (mRNA).

Most mRNA molecules contain a tail of poly(adenylic acid) (polyA tail), up to 250 bases in length. The Monomix dT20 Affinity Resin surface allows capture of mRNA through base pairing between oligo dT20-mer and the mRNA polyA tail using a simple and convenient chromatography procedure.

- Provides efficient capture and release under standard mRNA purification conditions, simplify subsequent purification steps and maximize overall production efficiency.
- Decreases process development time and enhances productivity.
- Allows reduction in plasmid DNA and other transcription mix components.
- Stable at elevated temperatures for the breakdown of undesired higher order structures, if needed.
- Excellent scalability. Provide prepacked columns, semi-prep column, prep column and bulk resin.
- Non-animal derived
- Resin customization. Polymethacrylate bead size is available at 10, 15, 30 and 60 μm .



Technical Specifications

Resin Type	Monomix dT(20)
Base & Support Matrix	Hydrophilic polymethacrylate, Monomix 1000 Å
Particle Size D50 (µm)	30
Average Pore Size (Å)	1000
Functional Group	Oligo dT20-mer
Ligand density	≥2.1 mg dT20 / mL of resin
Binding Capacity	>2.0 mg mRNA per mL of resin
mRNA Binding Capacity (mg/ml resin)	≥2.0 mg
Max Linear Flow Rate (cm/hr)	1000
Operating Temperature (°C)	4 – 65
pH Stability	2 – 12
Operating Pressure	≤100 bar (10 MPa)
Mobile Phase Compatibility	Compatible with common salt buffers, organic/aqueous solutions (acetonitrile, ethanol, etc.) and common additives for mRNA purification
Long-term Storage	Store in 20% ethanol aqueous solution, 2-25°C. Do not freeze resin or column.
CIP	0.1-0.5M NaOH. Recommend to start with 0.1M NaOH to prolong resin life



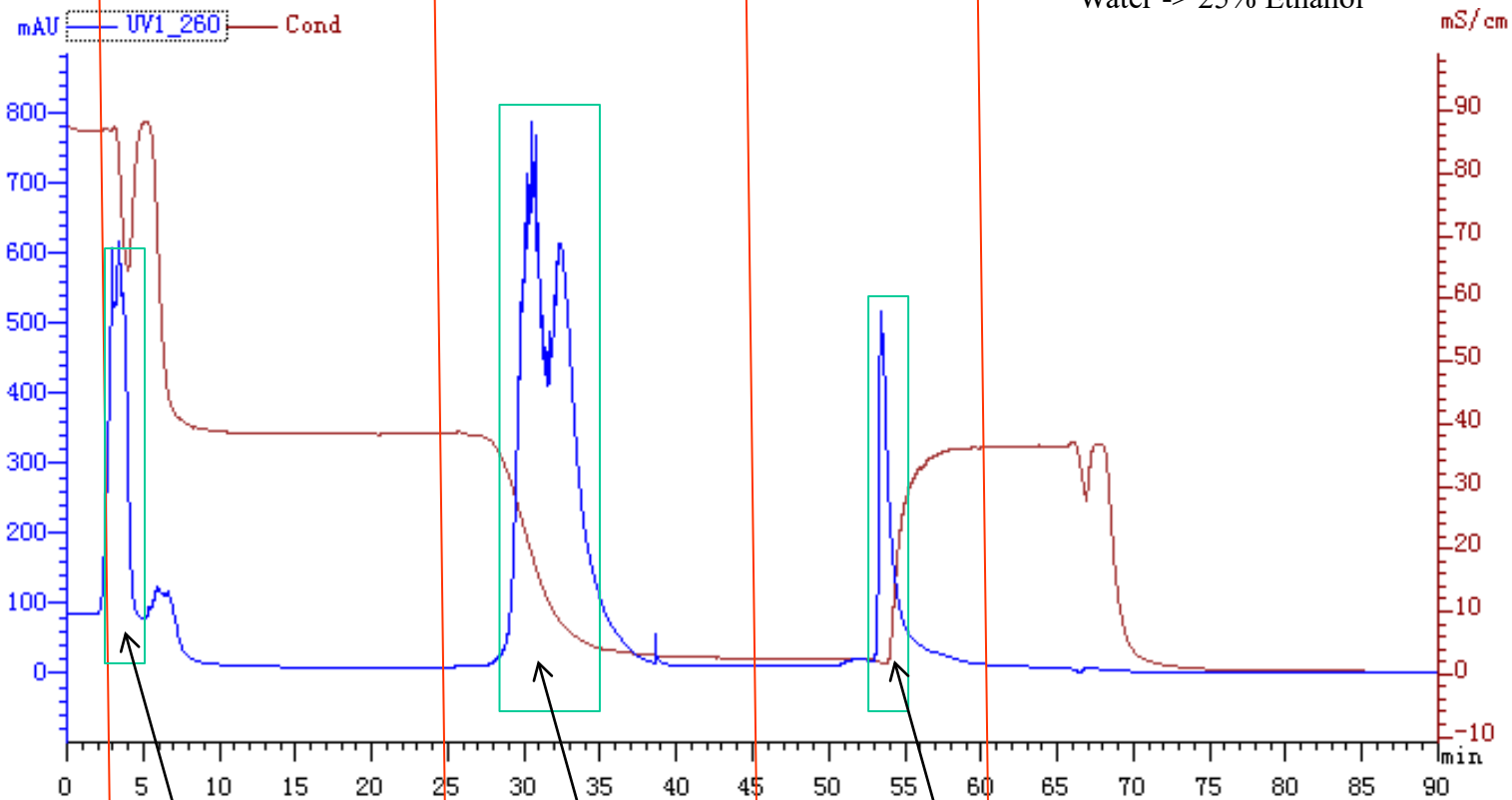
1. Bind

2. Wash

3. Elute

4. CIP

5. Wash to storage
Water -> 25% Ethanol



Flow-through
Collect

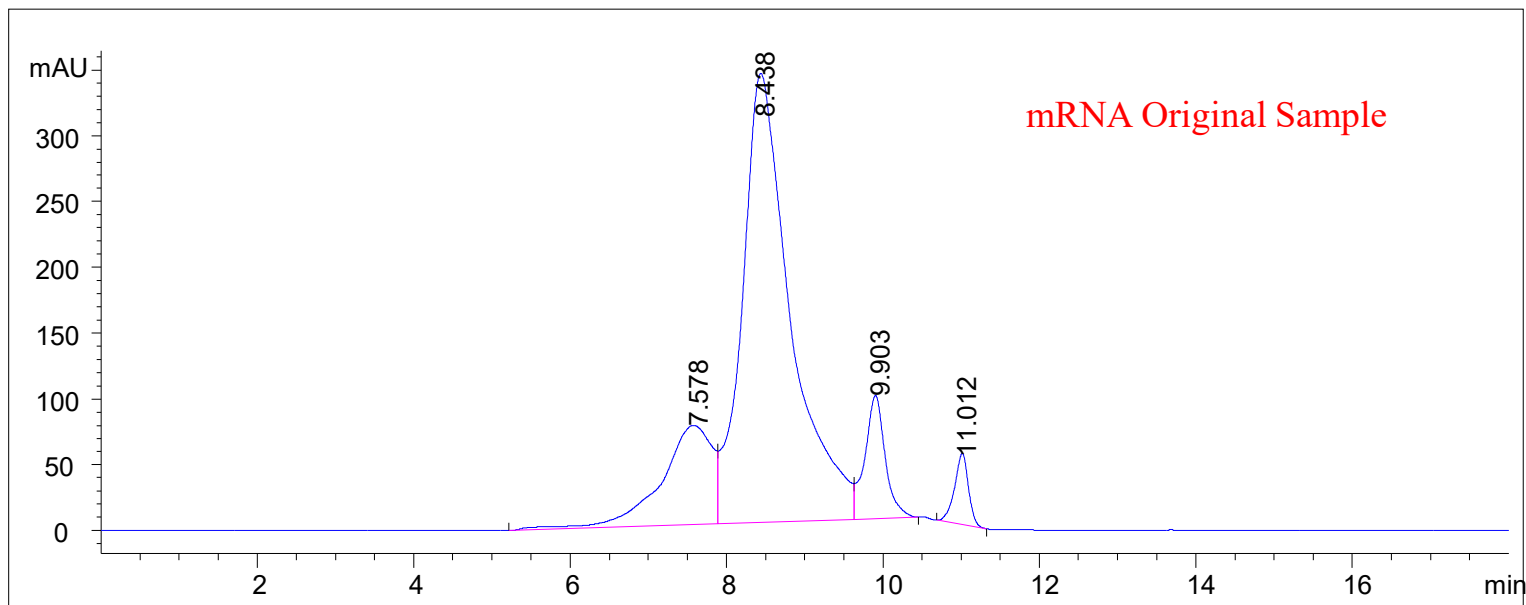
Elute
Collect 1 and 2

CIP
Collect



mRNA Sample Analysis on SEC-1000

Column: SRT SEC-1000, 5 μm , 7.8 x 300 mm; **Part Number:** 215950-7830; **Mobile Phase:** 150mM PB pH7.0; **Flow Rate:** 1 mL/min; **Detector:** UV 260 nm; **Column Temperature:** RT; **Injection Volume:** 5 μl ; **Sample:** mRNA original sample (1mg/L); **Pressure:** 61bar; **Instrument:** HPLC

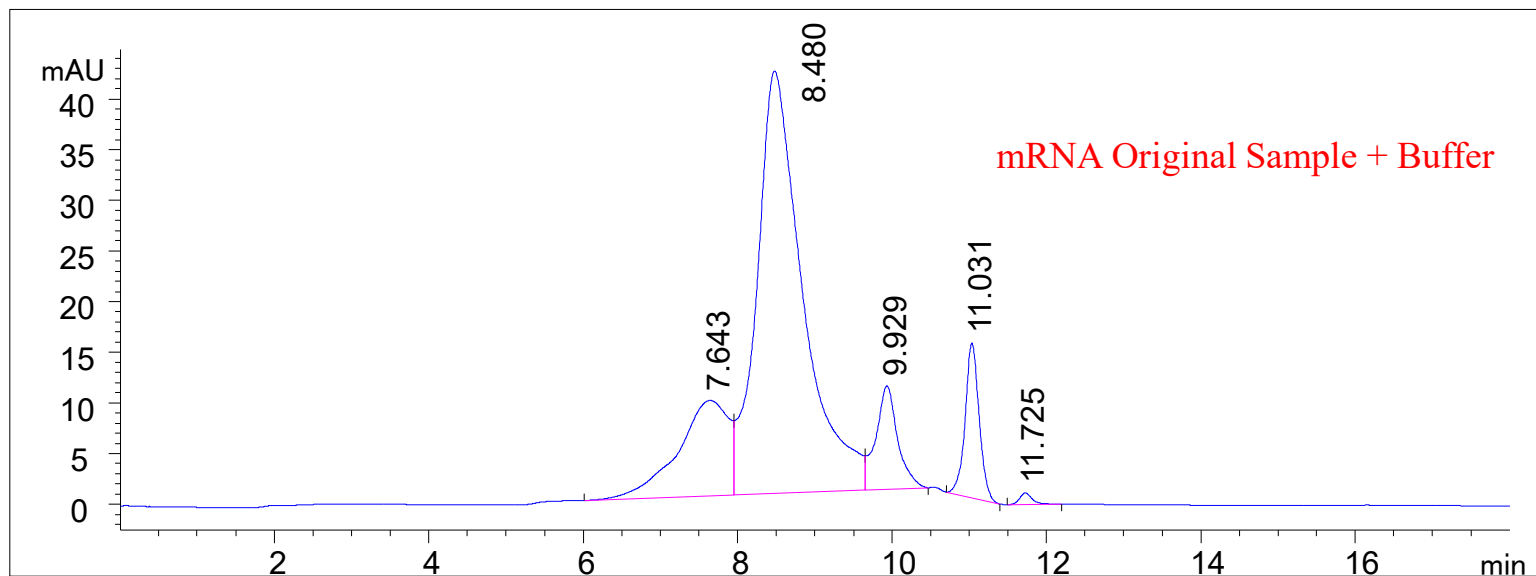


#	RT	Area	Height	Width	Tailing	Area%
1	7.578	3442.2	75.4	0.6659	1.965	16.826
2	8.438	14639.9	341.2	0.6416	0.579	71.562
3	9.903	1708	93.6	0.2658	1.034	8.349
4	11.012	667.6	54.2	0.1827	1.185	3.263



Sample + Buffer on SEC-1000

Column: SRT SEC-1000, 5 μ m, 7.8 x 300 mm; **Part Number:** 215950-7830; **Mobile Phase:** 150mM PB pH7.0; **Flow Rate:** 1 mL/min; **Detector:** UV 260 nm; **Column Temperature:** RT; **Injection Volume:** 5 μ l; **Sample:** mRNA Original + Buffer (380ul dilute to 1ml); **Pressure:** 61 bar

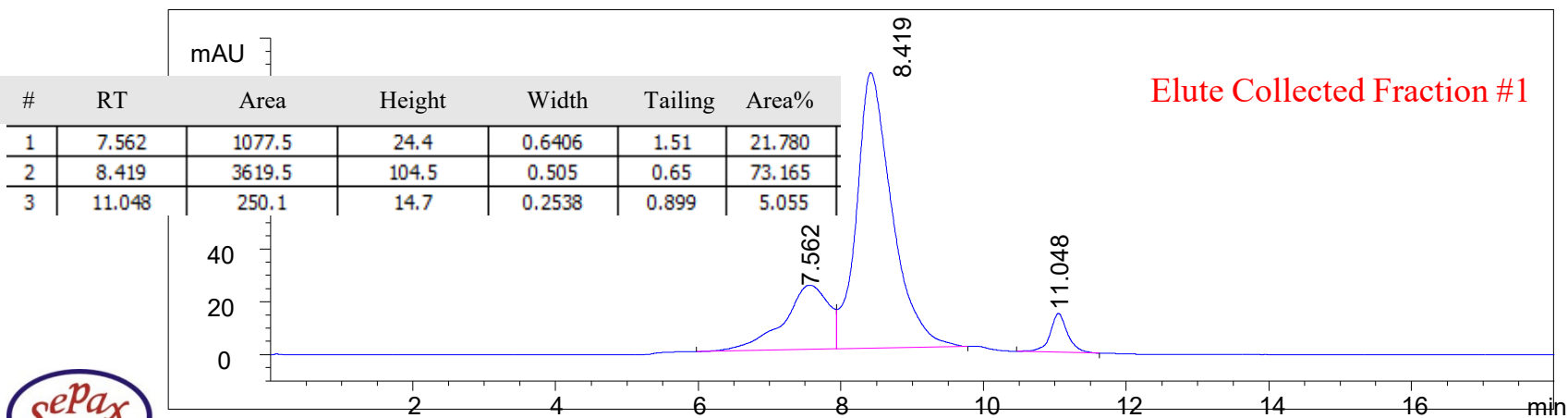
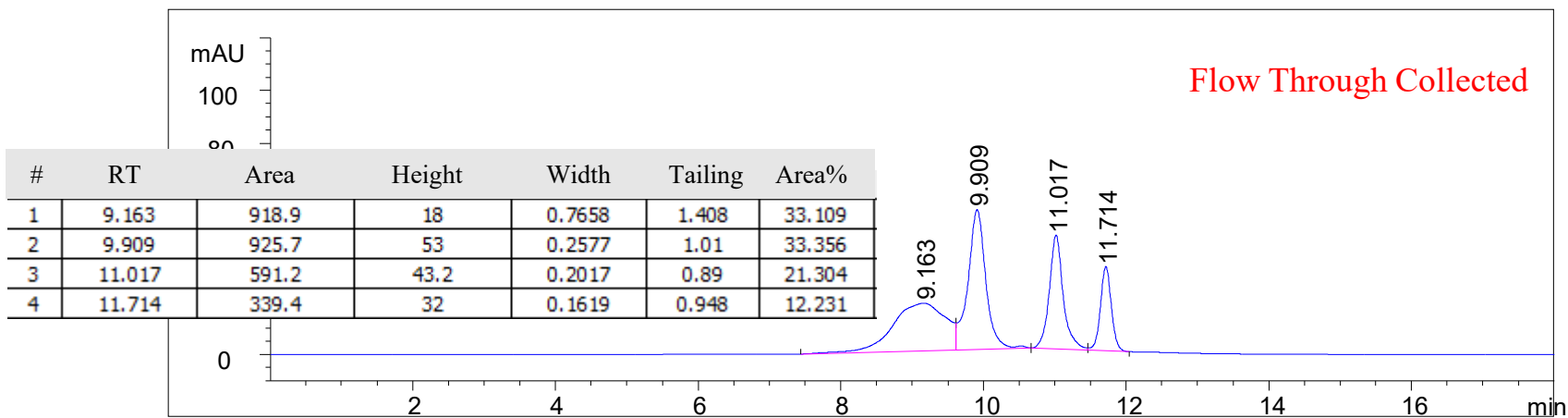


#	RT	Area	Height	Width	Tailing	Area%
1	7.643	427.5	9.4	0.6492	1.902	16.803
2	8.48	1723	41.7	0.5811	0.611	67.726
3	9.929	200.2	10.2	0.281	0.983	7.870
4	11.031	193.4	15.3	0.1899	0.902	7.601



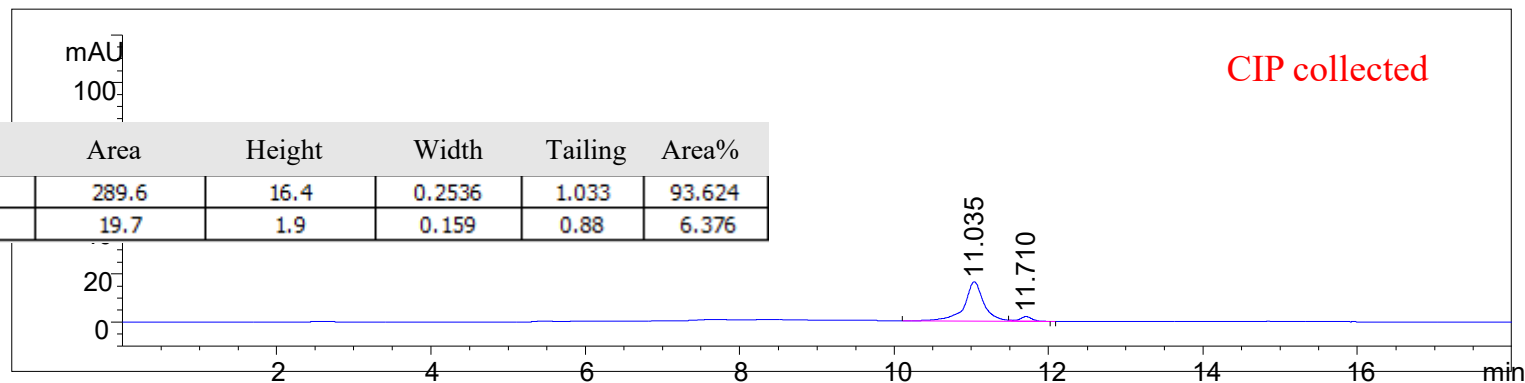
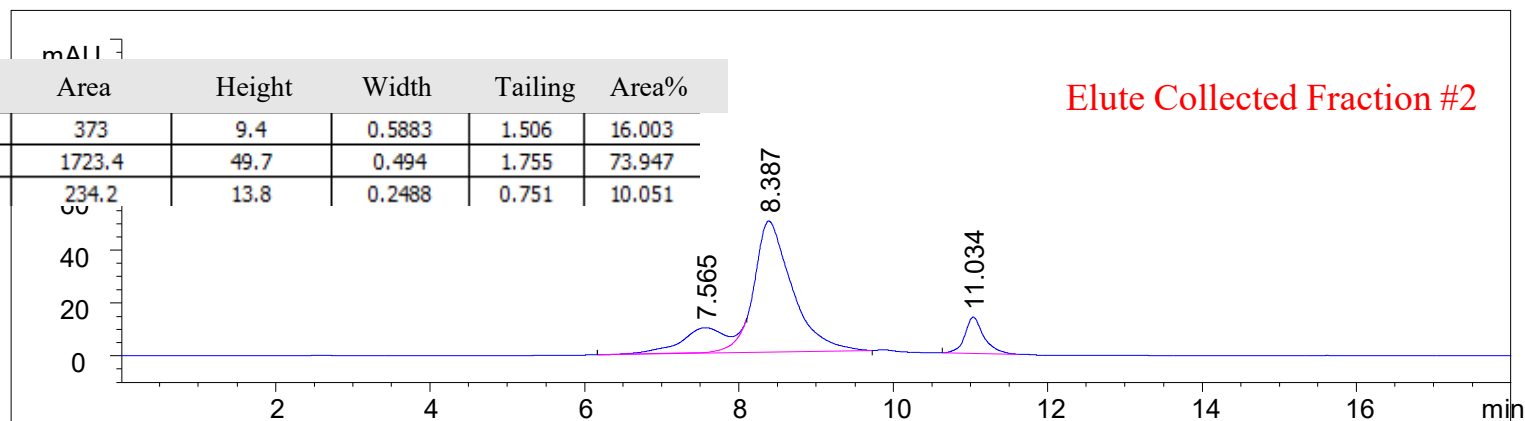
Collected Fractions Analysis on SEC-1000

Column: SRT SEC-1000, 5 μ m, 7.8 x 300 mm; **Part Number:** 215950-7830; **Mobile Phase:** 150mM PB pH7.0; **Flow Rate:** 1 mL/min; **Detector:** UV 260 nm; **Column Temperature:** RT; **Injection Volume:** 20 μ l; **Sample:** Collected Fractions; **Pressure:** 61bar



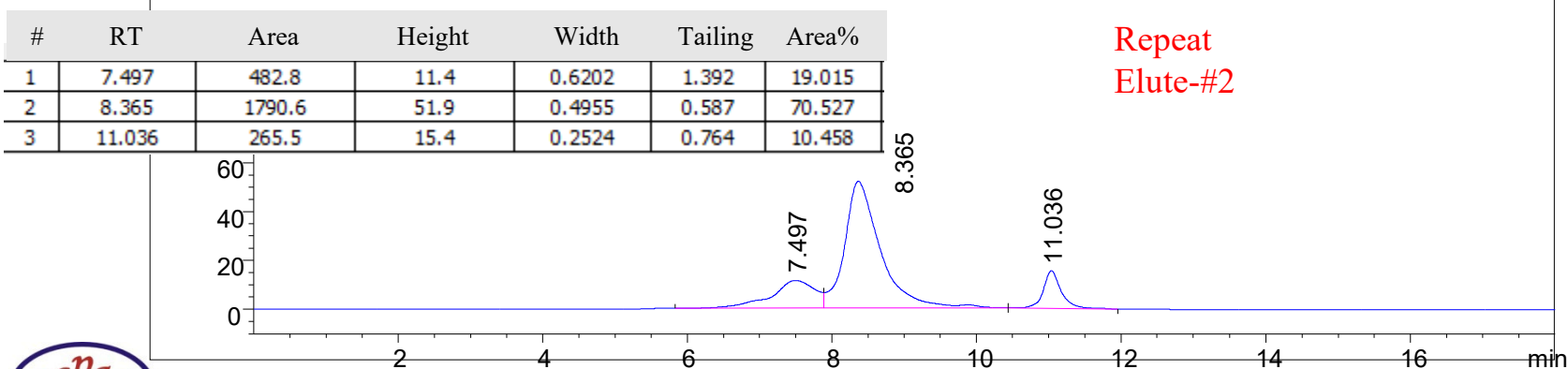
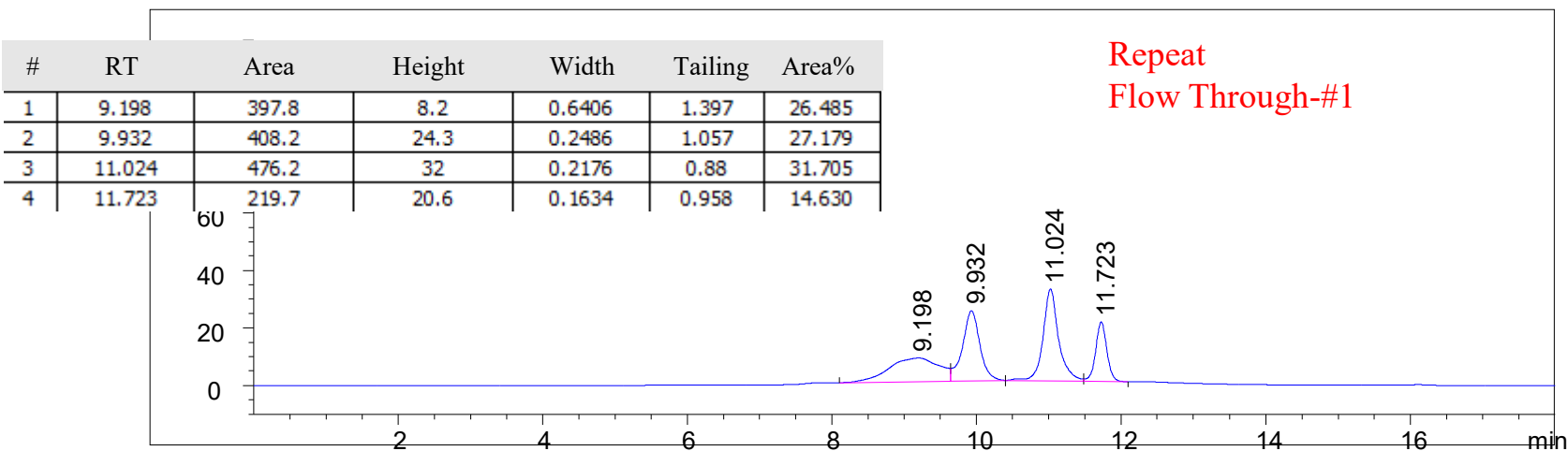
Collected Fractions Analysis on SEC-1000

Column: SRT SEC-1000, 5 μ m, 7.8 x 300 mm; **Part Number:** 215950-7830; **Mobile Phase:** 150mM PB pH7.0; **Flow Rate:** 1 mL/min; **Detector:** UV 260 nm; **Column Temperature:** RT; **Injection Volume:** 20 μ l; **Sample:** Collected Fractions; **Pressure:** 61bar

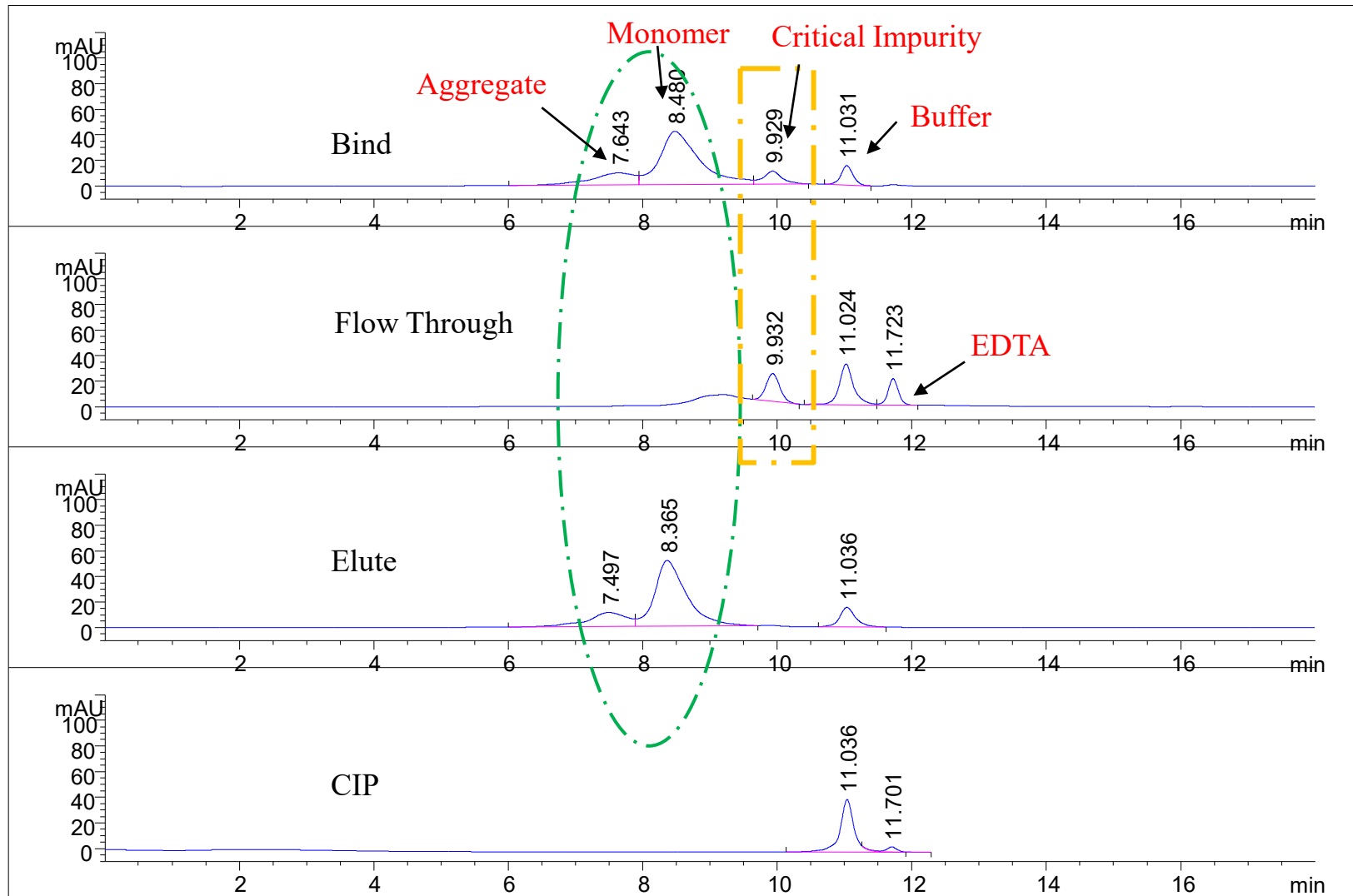


Collected Fractions Analysis on SEC-1000

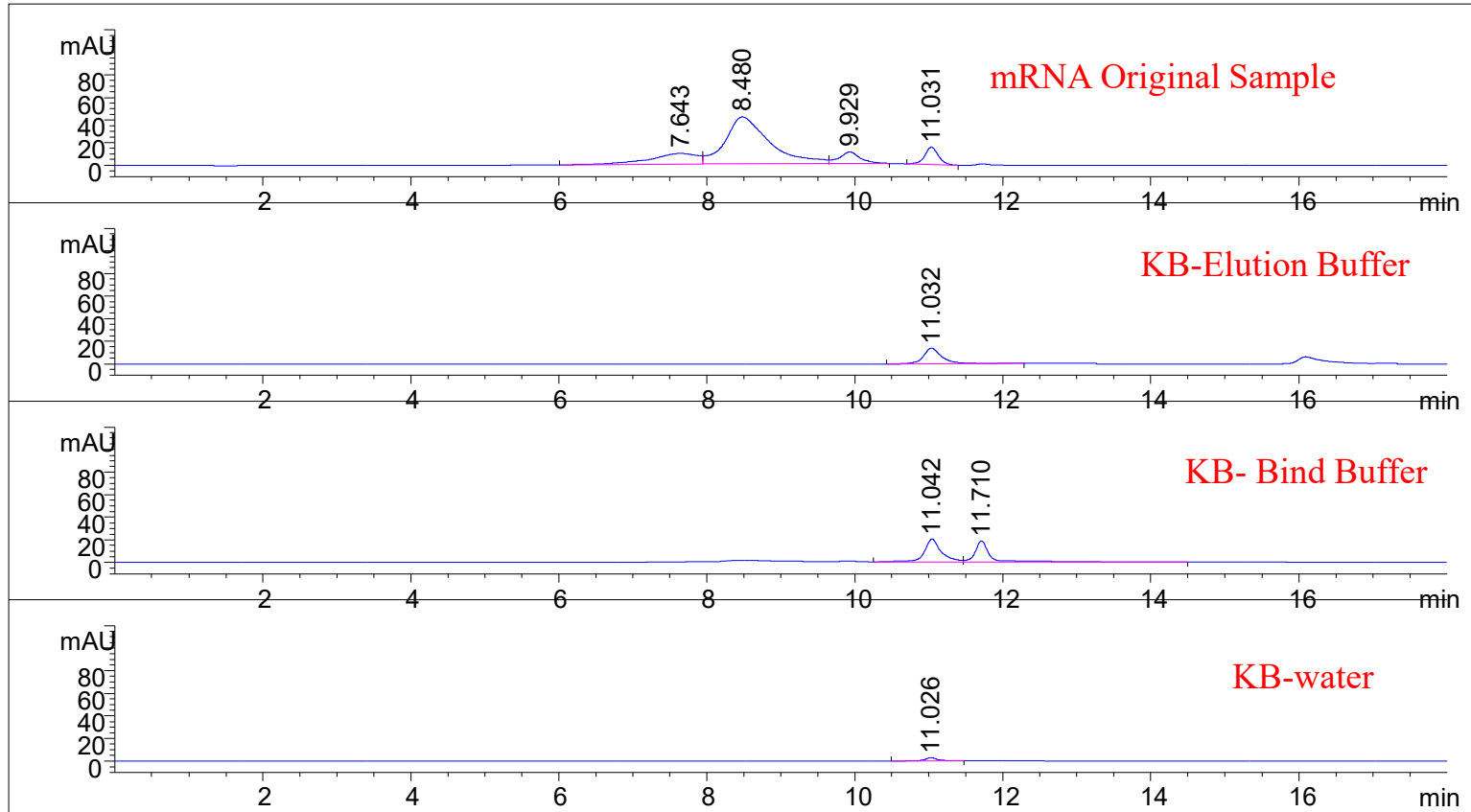
Column: SRT SEC-1000, 5 μm , 7.8 x 300 mm; **Part Number:** 215950-7830; **Mobile Phase:** 150mM PB pH7.0; **Flow Rate:** 1 mL/min; **Detector:** UV 260 nm; **Column Temperature:** RT; **Injection Volume:** 20 μl ; **Sample:** Collected Fractions; **Pressure:** 61bar



Fractions Overlays



Buffer Overlays



Order Information

Sepax Monomix dT20 Affinity Resin



Sepax Part Number	Monomix dT(20)
283030950-0000	1 mL, 5 mL resin
283030950-75100	4.2 mL Cartridge
283030950P-2105	2.1 x 50 mm PEEK
283030950P-4605	4.6 x 50 mm PEEK

*Notes: Shipping Condition: Wet Ice.
Shipping and Storage Solvent: 20% Ethanol with Water.*



For more information, visit our website: sepax-tech.com/Monomix-dT20.php