ARETERNA
A Synthgene Company

www.areterna.com

# AFFORDABLE ANALYTICAL SERVICE FOR

# CAPPING EFFICIENCY

Capping efficiency and poly(A) length are considered critical quality attributes (CQA) for mRNA. Areterna uses the LC-MS method to identify and quantify mRNA. Simply provide us with the 5'- and 3'- sequences of your mRNA construct, and we will design and run the LC-MS assays for you, delivering accurate and reproducible results.

## Our Advantages

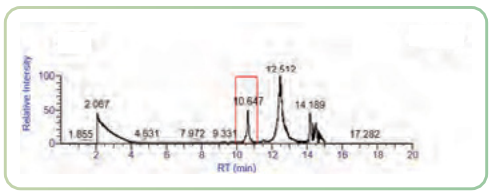
**EXPERIENCED TEAM**
**>400** capping efficiency and poly(A) length assays have been performed

**AFFORDABLE PRICE**
**$950** per sample, per assay*

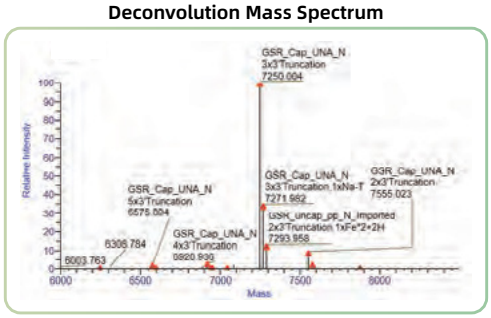
**QUICK RESULTS**
**2 weeks** turn-around time upon receipt of the sample

## TESTING CASE 1
The capping efficiency is 99.3%

**Total Ion Chromatography**




**Deconvolution Mass Spectrum**




| Sequence Name | Modification | Monoisotopic Mass | Theoretical Mass (Da) | Matched Mass Error (ppm) | Average Mass | Sum Intensity |
|---|---|---|---|---|---|---|
| GSR_Cap_UNA_N | 3x3'Truncation | 7250.004 | 7250.012 | 1.2 | 7253.39 | 1.61E+07 |
| GSR_Cap_UNA_N | 3x3'Truncation,1xNa-T | 7271.982 | 7271.993 | 1.6 | 7275.38 | 5.45E+06 |
| GSR_Cap_UNA_N | 3x3'Truncation,2xNa-T | 7293.958 | 7293.843 | 15.7 | 7297.37 | 2.01E+06 |
| GSR_Cap_UNA_N | 2x3'Truncation | 7555.023 | 7555.054 | 4.0 | 7558.55 | 1.45E+06 |
| GSR_Cap_UNA_N | 4x3'Truncation | 6920.936 | 6920.960 | 3.5 | 6924.17 | 4.80E+05 |
| GSR_Cap_UNA_N | 2x3'Truncation,1xNa-T | 7577.001 | 7577.035 | 4.4 | 7580.54 | 4.06E+05 |
| GSR_Cap_UNA_N | 5x3'Truncation | 6575.894 | 6575.912 | 2.8 | 6578.96 | 3.04E+05 |
| GSR_Cap_UNA_N | 4x3'Truncation,1xNa-T | 6942.911 | 6942.941 | 4.3 | 6946.16 | 1.18E+05 |
| GSR_uncap_N | 2x3'Truncation,1xNa | 7042.910 | 7043.017 | 15.2 | 7046.20 | 1.17E+05 |
| GSR_Cap_UNA_N | 6x3'Truncation | 6246.849 | 6246.860 | 1.8 | 6249.77 | 1.14E+05 |
| GSR_Cap_UNA_N | 1x3'Truncation | 7875.057 | 7875.095 | 4.7 | 7878.74 | 1.00E+05 |
| GSR_uncap_ppp_N | 3x3'Truncation | 6954.851 | 6954.884 | 4.7 | 6958.10 | 8.23E+04 |
| GSR_Cap_UNA_N | 5x3'Truncation,1xNa-T | 6597.881 | 6597.893 | 1.8 | 6600.96 | 7.89E+04 |

*Price is subject to change without notice

Areterna-LLC
sales@areterna.com
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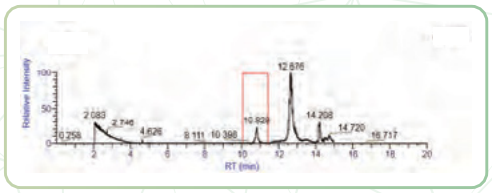
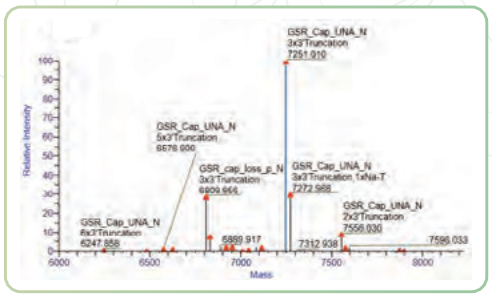
## TESTING CASE 2
The capping efficiency is 77.3%

**Total Ion Chromatography**




**Deconvolution Mass Spectrum**

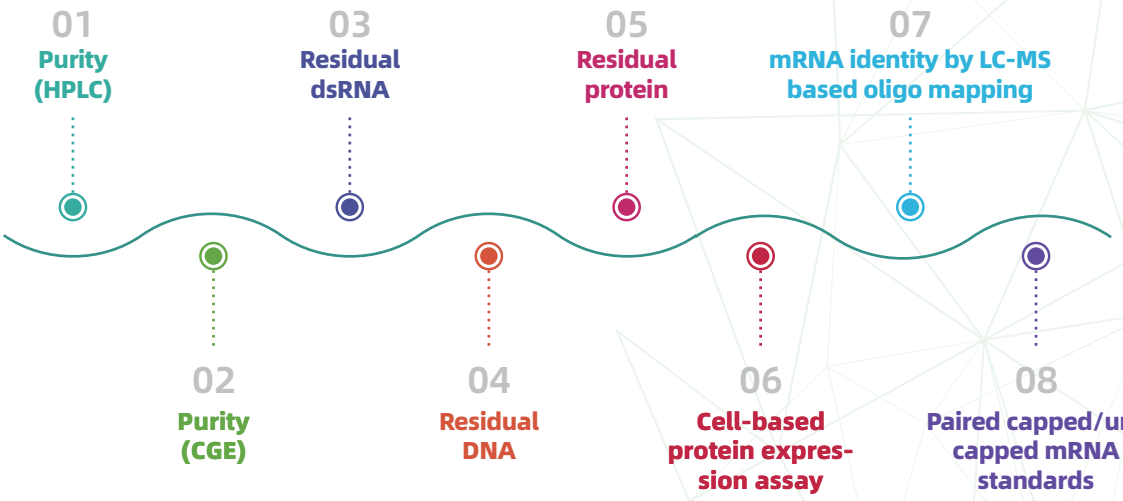



| Sequence Name | Modification | Monoisotopic Mass | Theoretical Mass (Da) | Matched Mass Error (ppm) | Average Mass | Sum Intensity |
|---|---|---|---|---|---|---|
| GSR_Cap_UNA_N | 3x3'Truncation | 7251.010 | 7251.020 | 1.4 | 7254.40 | 8.46E+06 |
| GSR_Cap_UNA_N | 3x3'Truncation,1xNa-T | 7272.988 | 7273.001 | 1.8 | 7276.39 | 2.53E+06 |
| GSR_cap_loss_p_N | 3x3'Truncation | 6809.956 | 6809.975 | 2.7 | 6813.14 | 2.44E+06 |
| GSR_Cap_UNA_N | 2x3'Truncation | 7556.030 | 7556.061 | 4.1 | 7559.56 | 7.60E+05 |
| GSR_cap_loss_p_N | 3x3'Truncation,1xNa-T | 6831.928 | 6831.956 | 4.0 | 6835.12 | 6.58E+05 |
| GSR_uncap_ppp_N_Imported | 3x3'Truncation | 6955.878 | 6955.892 | 2.0 | 6959.13 | 1.82E+05 |
| GSR_Cap_UNA_N | 4x3'Truncation | 6921.928 | 6921.967 | 5.7 | 6925.16 | 1.79E+05 |
| GSR_cap_loss_p_N | 2x3'Truncation | 7114.979 | 7115.016 | 5.1 | 7118.31 | 1.50E+05 |
| GSR_Cap_UNA_N | 2x3'Truncation,1xNa-T | 7577.999 | 7578.042 | 5.7 | 7581.54 | 1.50E+05 |
| GSR_Cap_UNA_N | 5x3'Truncation | 6576.900 | 6576.920 | 3.0 | 6579.97 | 8.66E+04 |
| GSR_uncap_ppp_N_Imported | 4x3'Truncation | 6626.811 | 6626.839 | 4.2 | 6629.90 | 7.97E+04 |
| GSR_uncap_N_Imported | 2x3'Truncation,1xNa | 7043.910 | 7044.024 | 16.1 | 7047.20 | 6.88E+04 |
| GSR_Cap_UNA_N | 6x3'Truncation | 6247.858 | 6247.867 | 1.4 | 6250.78 | 6.09E+04 |
| GSR_Cap_UNA_N | 1x3'Truncation | 7876.070 | 7876.102 | 4.1 | 7879.75 | 5.98E+04 |
| GSR_cap_loss_p_N | 4x3'Truncation | 6480.903 | 6480.922 | 2.9 | 6483.92 | 2.36E+04 |
| GSR_Cap_UNA_N | 1x3'Truncation,1xNa | 7899.063 | 7899.092 | 3.7 | 7902.75 | 1.94E+04 |
| GSR_uncap_ppp_N_Imported | 3x3'Truncation,1xFe-T | 7012.788 | 7012.802 | 1.9 | 7016.07 | 6.38E+03 |

For customers who wish to run their own capping and tailing assays, Areterna offers analytical method development services.

- **Design construct-specific cleavage probes.**
- **Develop construct-specific analytical methods and tech transfer to customers**

## Other Analytical Services for Analytical Method Development and Validation

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