# CERTIFICATE OF ANALYSIS

**Product Description:** SULFO-TAG™ Goat-Anti Human IgG
**Catalog #/ Size:** S01AC-1
**Lot Number:** W0017254
**Storage Condition:** 2-8 ºC
**Date of Manufacture:** 27 JUN 2017
**Expiration Date:** 30 JUN 2019
**Statement:** This product was manufactured and tested according to approved MSD documents.

## Summary of Conjugation:

| Raw Material Lot # | Final Conc. (µg/mL) | L/P | % Yield | Final Buffer | Final Volume (µL) |
|---|---|---|---|---|---|
| J2815-MK47 | 1000 | 4.1 | 102.9 | PBS + 0.05% Azide | 10290 |

## Summary of Characterization of Material:

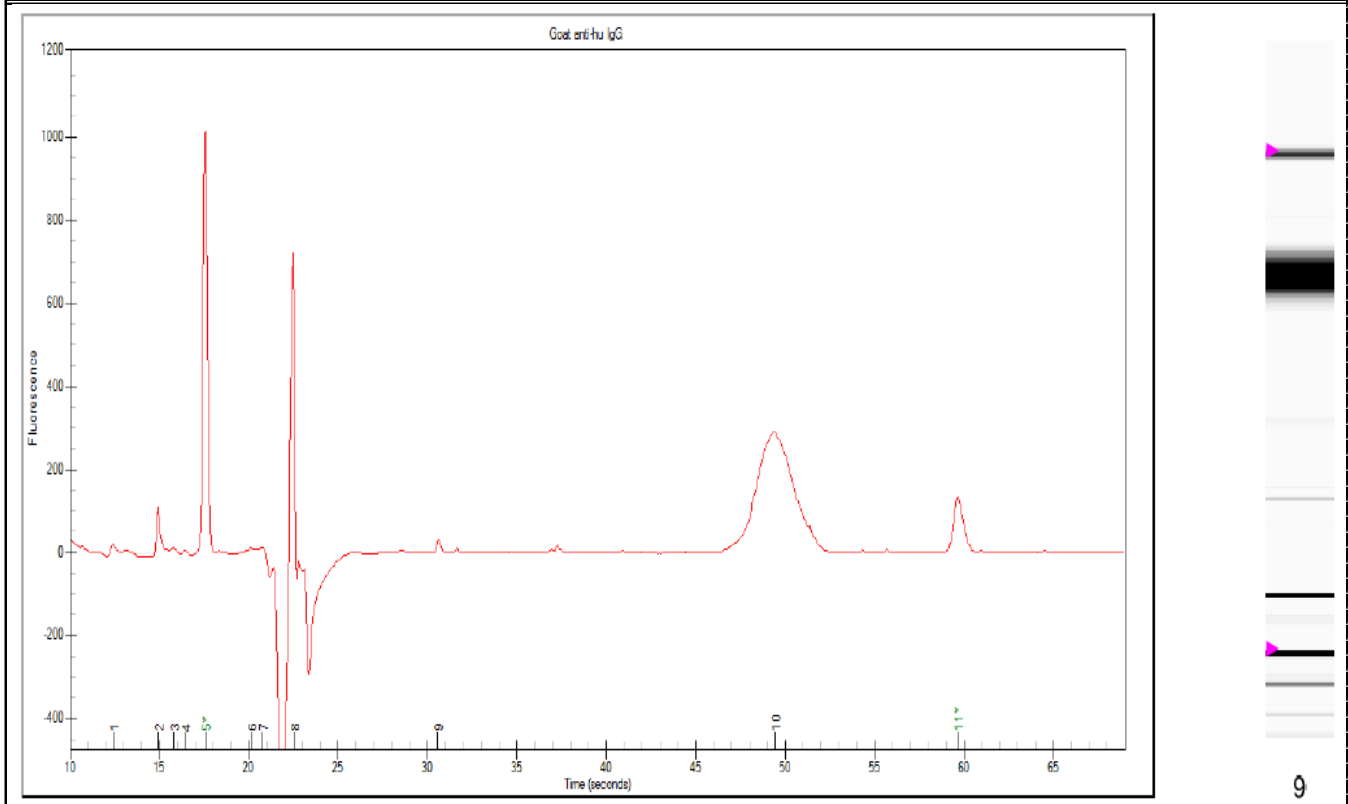| Characterization Method | | Metric | Measured |
|---|---|---|---|
| Capillary Electrophoresis | Non-reducing | Ab % Total Mass | 98% |
| | Reducing | % Total Mass H + L | 89% |
| Dynamic Light Scattering | | Ab % Pd | 15% |
| | | Ab % Intensity | 84% |
| | | Ab % Mass | 99% |
| | | Radius of Ab peak | 4.5% |
| Capillary Isoelectric Focusing (pre-conjugation) | | pI of main peak | 7.0% |
| | | pI range | 6.3-7.5 |
| Capillary Isoelectric Focusing (post-conjugation) | | pI of main peak | 5.8 |
| | | pI range | 5.1-7.2 |

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## Non-Reducing Capillary Electrophoresis (Pre-conjugation):

**Non-Reducing Graph and Gel**



| Peak Number | Mig. Time (secs) | Mol. Wt. (kDa) | Corrected Area | Area Ratio (to Upper Marker) | Concentration (ng/µl) | Calib. Conc. (ng/µl) | % Total | Observation | Peak Used for Result? |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12.41 | | 71.3 | | | | | | No |
| 2 | 14.91 | | 278.91 | | | | | | No |
| 3 | 15.79 | | 52.78 | | | | | | No |
| 4 | 16.44 | | 22.1 | | | | | | No |
| 5 | 17.6 | 1.2 | 1840.93 | | | | | Lower Marker | No |
| 6 | 20.15 | 4.27 | 25.3 | | | | | System Peak | No |
| 7 | 20.75 | 5 | 21.37 | | | | | System Peak | No |
| 8 | 22.51 | 7.12 | 758.18 | | | | | System Peak | No |
| 9 | 30.58 | 28.63 | 24.08 | 0.1642 | 12.32 | | 1.64 | | No |
| 10 | 49.4 | 151.11 | 1441.75 | 9.8322 | 737.42 | | 98.36 | | Yes |
| 11 | 59.65 | 260 | 146.64 | 1 | 75 | | | Upper Marker | No |

# CERTIFICATE OF ANALYSIS

**Reducing Capillary Electrophoresis (Pre-conjugation):**

Reducing Graph and Gel
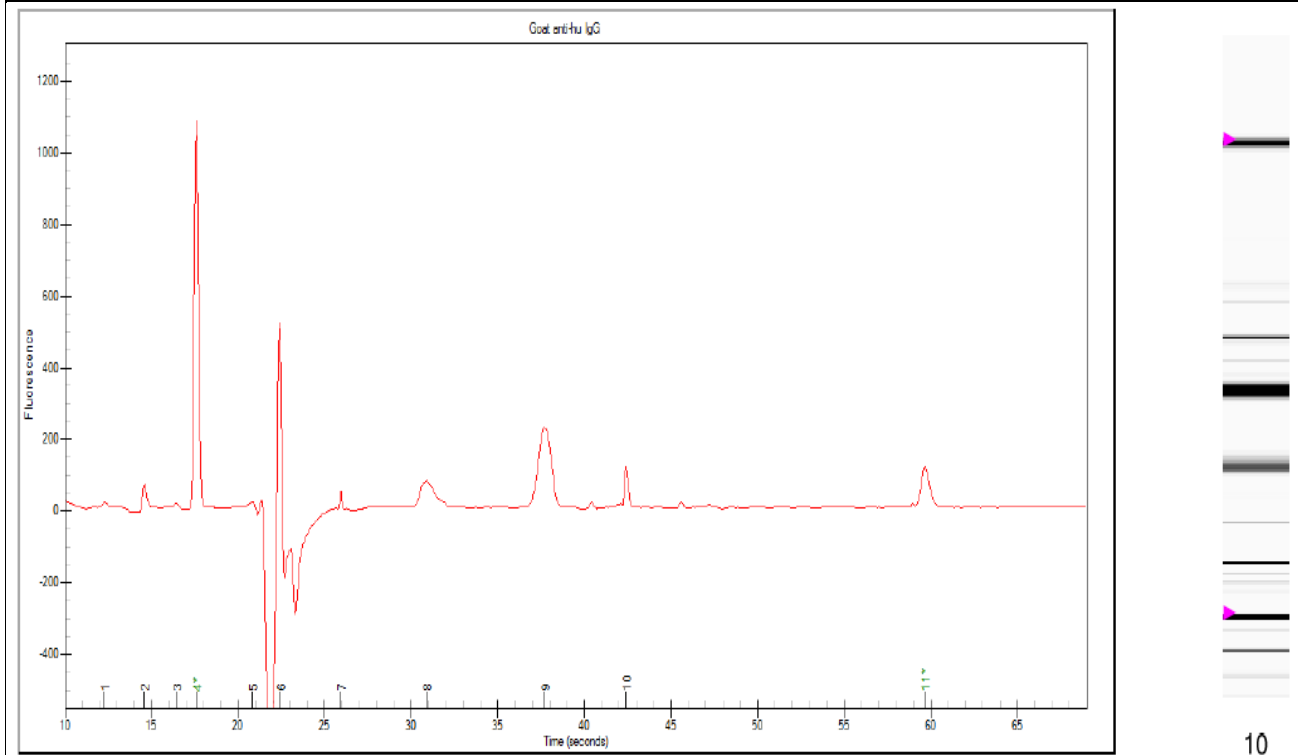


| Peak Number | Mig. Time (secs) | Mol. Wt. (kDa) | Corrected Area | Area Ratio (to Upper Marker) | Concentration (ng/µl) | Calib. Conc. (ng/µl) | % Total | Observation | Peak Used for Result? |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 12.26 | | 56.78 | | | | | | No |
| 2 | 14.58 | 0 | 122.39 | 0 | 0 | 0 | 0 | 0 | No |
| 3 | 16.44 | | 19.98 | | | | | | No |
| 4 | 17.6 | 1.2 | 1898.06 | 0 | 0 | 0 | 0 | Lower Marker | No |
| 5 | 20.81 | 5.06 | 32.91 | | | | | System Peak | No |
| 6 | 22.43 | 7.03 | 511.98 | 0 | 0 | 0 | 0 | System Peak | No |
| 7 | 25.92 | 12.91 | 28.32 | 0.2639 | 19.8 | | 3.33 | | No |
| 8 | 30.89 | 29.97 | 246.25 | 2.295 | 172.12 | 0 | 28.93 | 0 | Light Chain |
| 9 | 37.72 | 64.19 | 513.08 | 4.7816 | 358.62 | | 60.27 | | Heavy Chain |
| 10 | 42.41 | 95.38 | 63.66 | 0.5933 | 44.5 | 0 | 7.48 | 0 | No |
| 11 | 59.65 | 260 | 107.3 | 1 | 75 | | | Upper Marker | No |

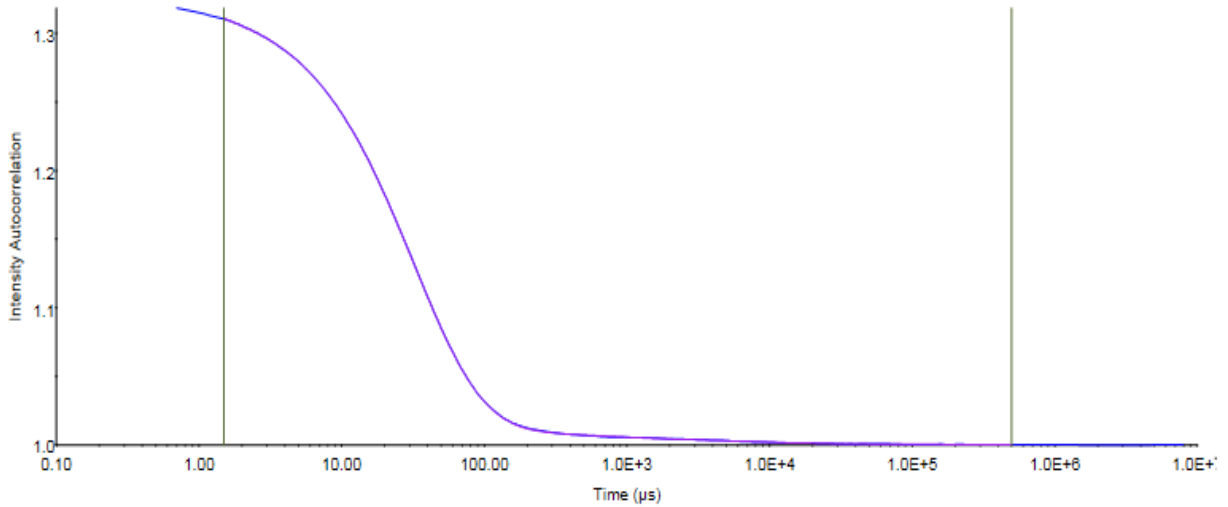**CERTIFICATE OF ANALYSIS**

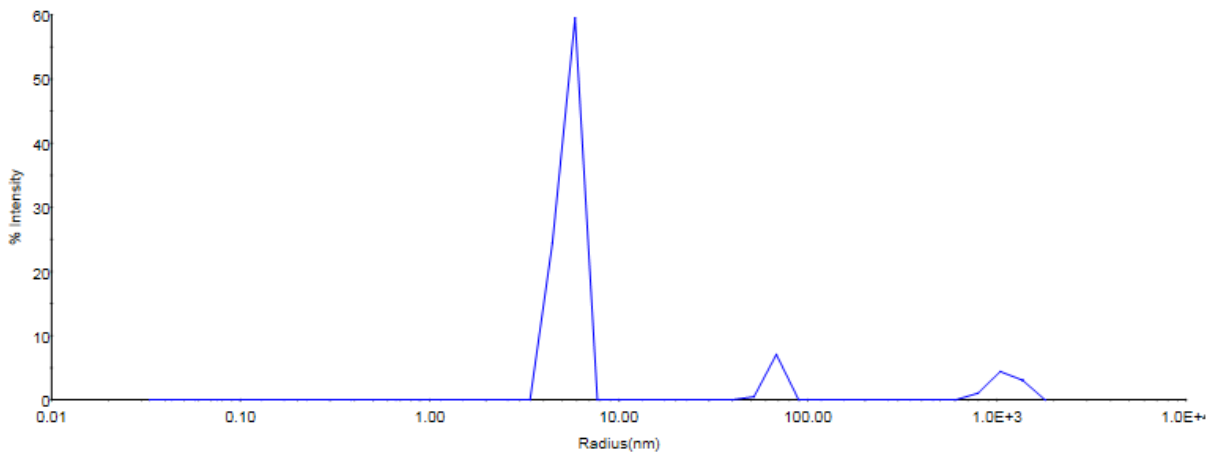**Dynamic Light Scattering (Pre-conjugation):**

Correlation Function: Goat Anti-Human IgG-W0017254 preSTAG



Regularization Results: Goat Anti-Human IgG-W0017254 preSTAG



| | Radius (nm) | %Pd | Mw-R (kDa) | %Intensity | %Mass |
|---|---|---|---|---|---|
| Peak 1 | 5.4 | 11.6 | 178 | 83.9 | 99.1 |
| Peak 2 | 67.0 | 6.0 | 63073 | 7.6 | 0.0 |
| Peak 3 | 1127.2 | 17.2 | 46585400 | 8.5 | 0.9 |

| Sample Summary | | | Goat Anti-Human IgG-W0017254 preSTAG | | | | |
|---|---|---|---|---|---|---|---|
| | | | Repeat 1 | Repeat 2 | Repeat 3 | Average | %CV |
| Cumulant Fit | | Radius (nm) | 9.6 | 6.1 | 216.80 | 77.50 | 155.68 |
| | | %Pd | Multimodal | 23.7 | Multimodal | 23.70 | --- |
| Regularization Fit | Peak (1.5-3.9nm) | Radius (nm) | --- | --- | 4 | 4.00 | --- |
| | | %Pd | --- | --- | 24.2 | 24.20 | --- |
| | | % Intensity | --- | --- | 100 | 100.00 | --- |
| | | % Mass | --- | --- | 100 | 100.00 | --- |
| | Peak (4.0-20.0nm) | Radius (nm) | 4.2 | 5.4 | --- | 4.80 | 17.68 |
| | | %Pd | 10.6 | 11.6 | --- | 11.10 | 6.37 |
| | | % Intensity | 68.4 | 83.9 | --- | 76.15 | 14.39 |
| | | % Mass | 99.2 | 99.1 | --- | 99.15 | 0.07 |
| | Peak (20.1-5000.0nm) | Radius (nm) | 30.3 | 67 | --- | 48.65 | 53.34 |
| | | %Pd | 5.4 | 6 | --- | 5.70 | 7.44 |
| | | % Intensity | 2 | 7.6 | --- | 4.80 | 82.50 |
| | | % Mass | 0 | 0 | --- | 0.00 | --- |
| Peak (1.5-3.9nm) radius/Cumulant radius ratio | | | --- | --- | 98.15 | 94.84 | |
| Peak (4.0-20.0nm) radius/Cumulant radius ratio | | | 56.25 | 11.48 | --- | 93.81 | |
| Peak (20.1-5000.0nm) radius/Cumulant radius ratio | | | -215.63 | -998.36 | --- | 37.23 | |

## Capillary Isoelectric Focusing (Pre-conjugation):
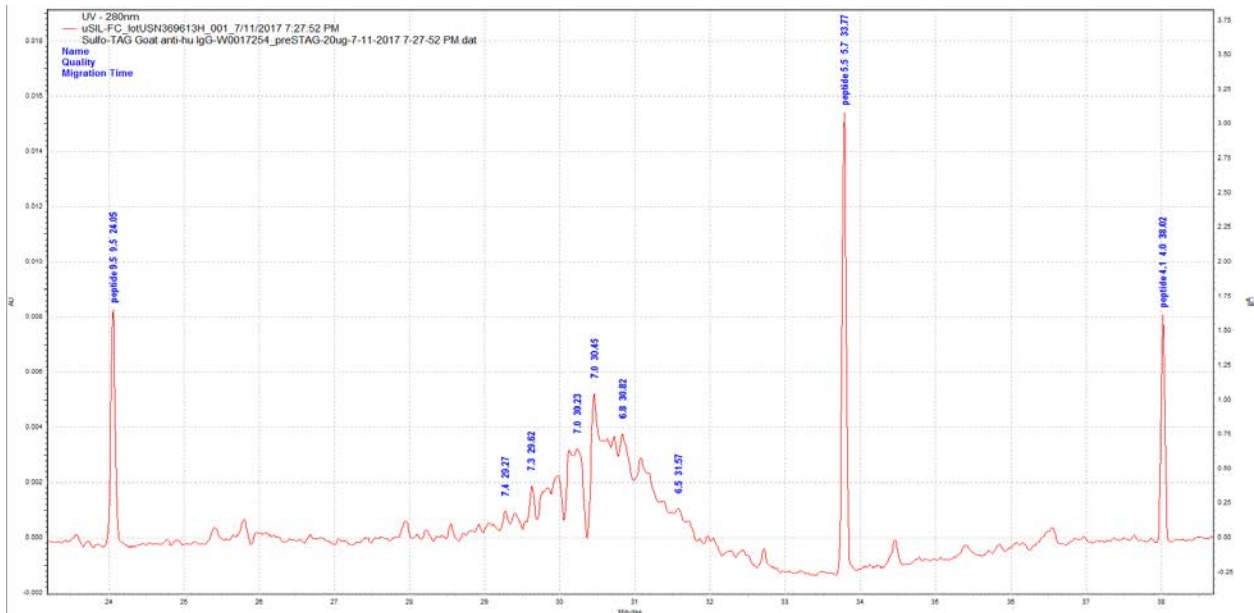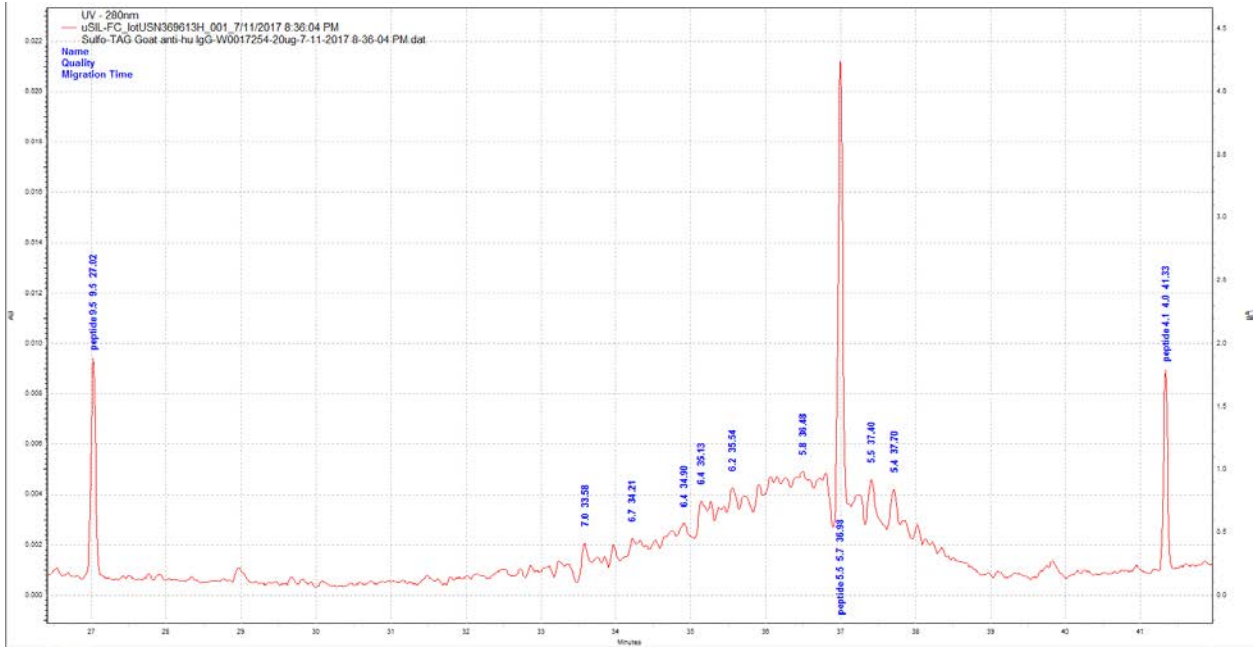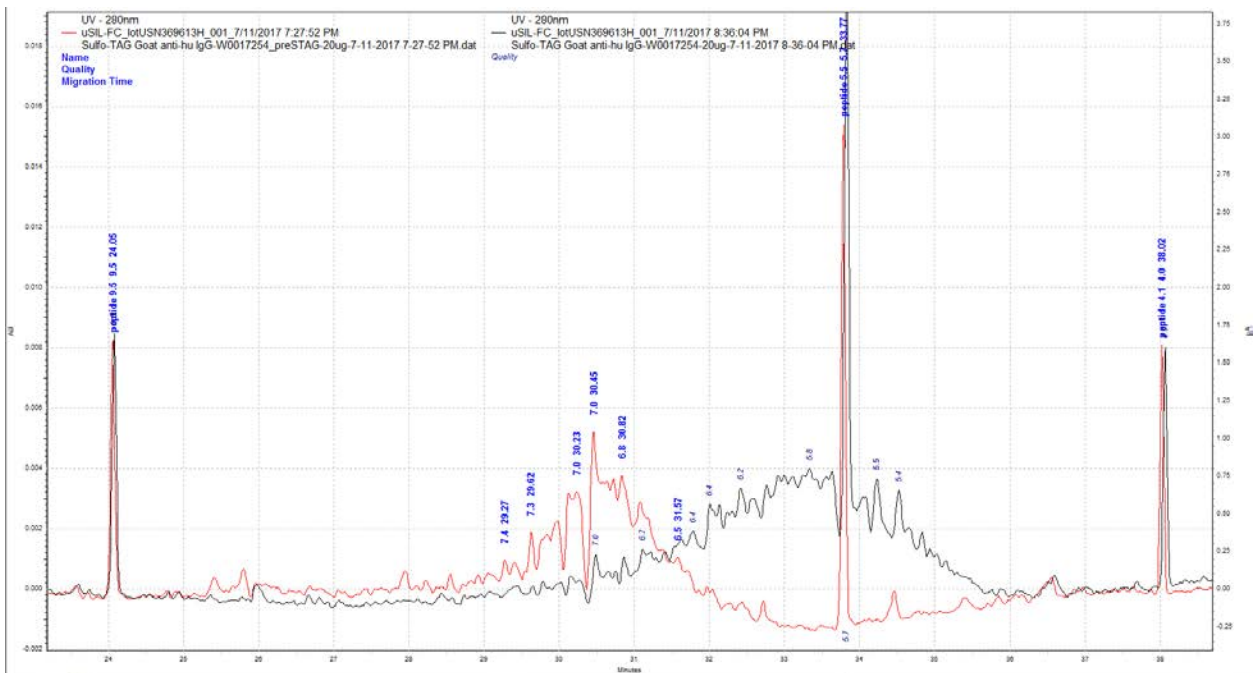
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**Capillary Isoelectric Focusing (Post-conjugation):**



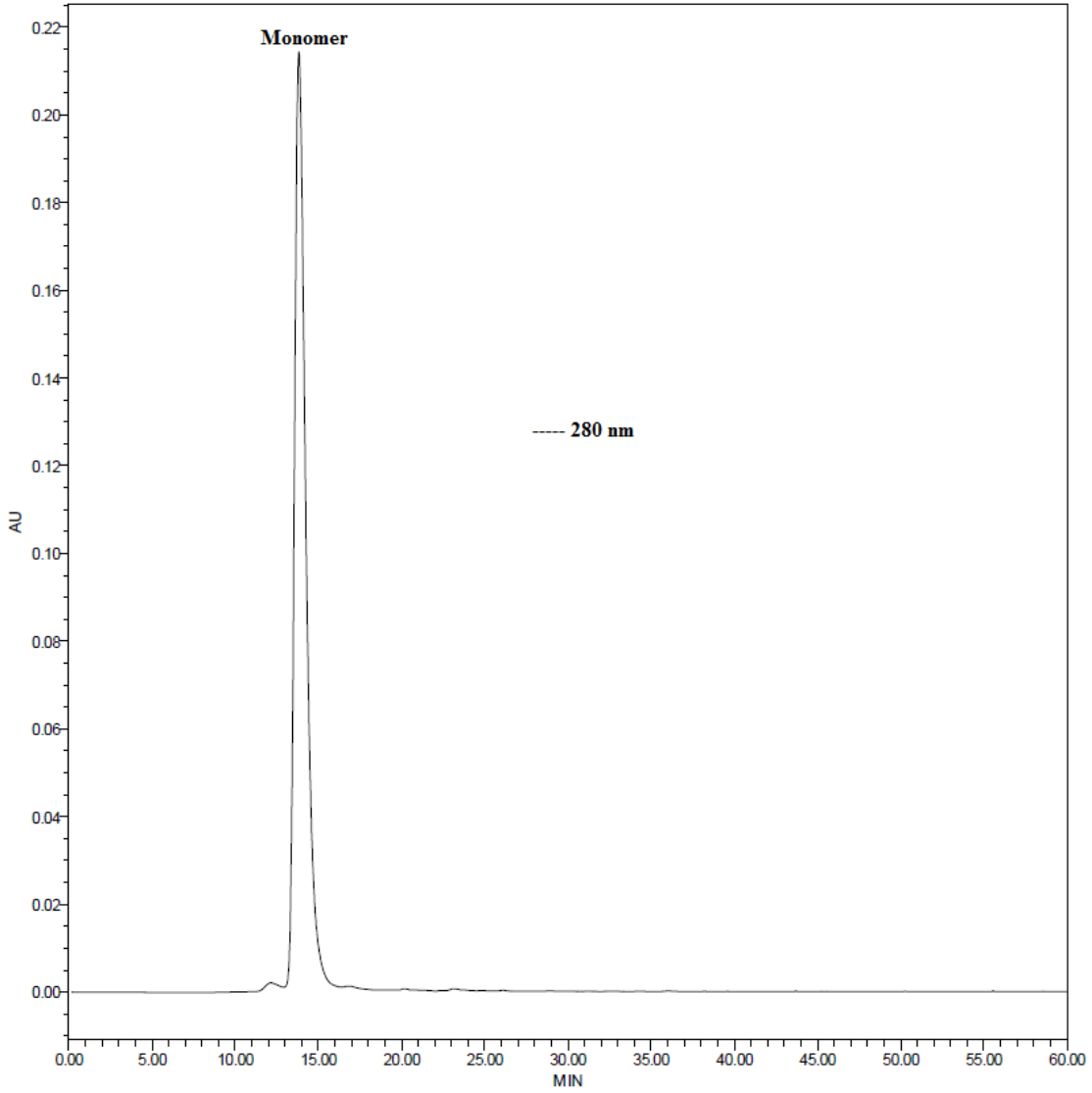**Capillary Isoelectric Focusing (Pre-conjugation (red) and Post-conjugation (blue) Overlay):**

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**Analytical Size Exclusion Chromatography:**
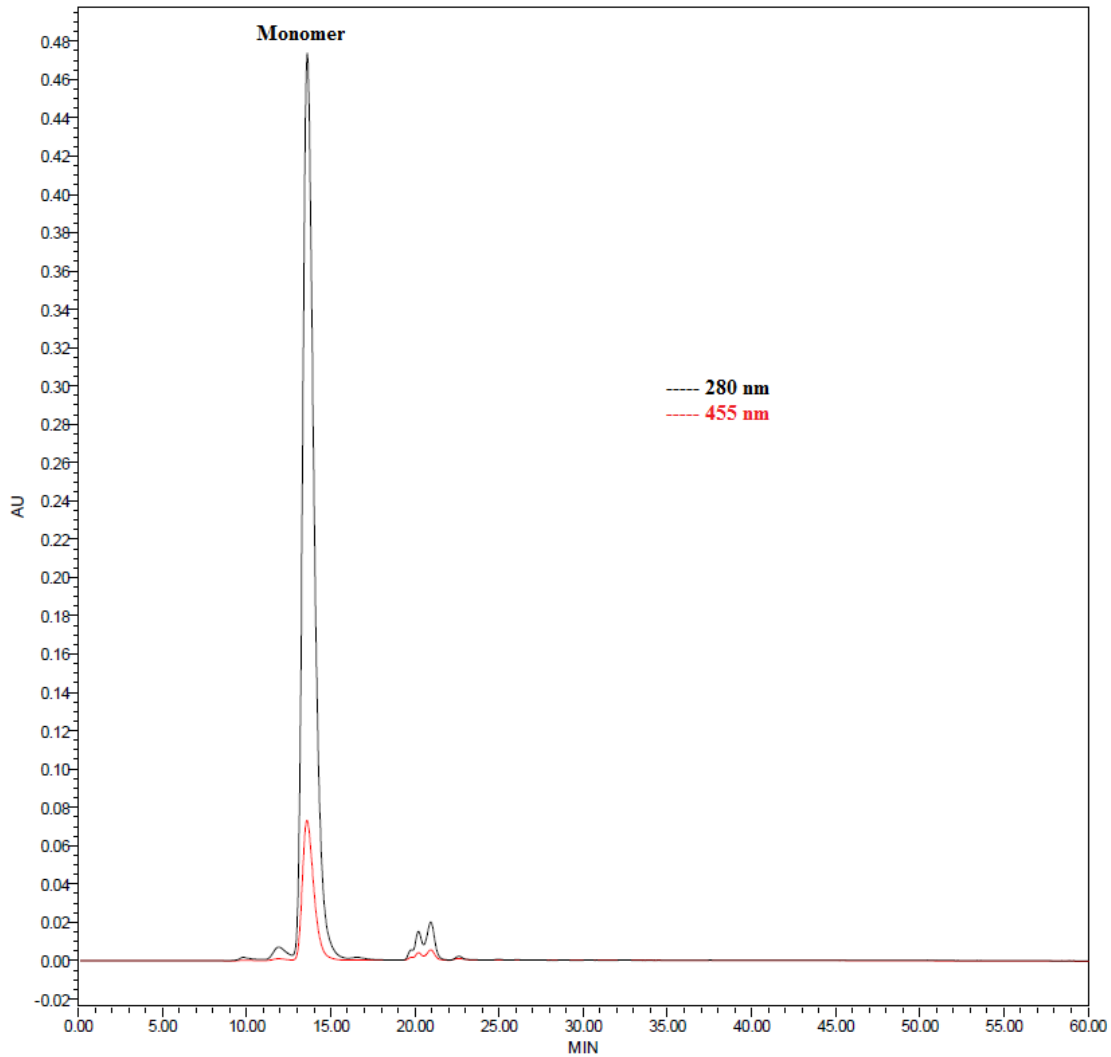
**Pre-conjugation material:**



% Monomer = 99.34

# CERTIFICATE OF ANALYSIS

**Post-conjugation material:**



% Monomer = 98.16
% Free SULFO-TAG™ = 7.97

**The above product is intended for Research Use Only. Not for use in Diagnostic Procedures.**

| | Name | Function | Signature | Date |
|---|---|---|---|---|
| **Review/Approval** | Vanessa Castleberry | Quality Assurance | *Vanessa Castleberry* | 25JUL2017 |