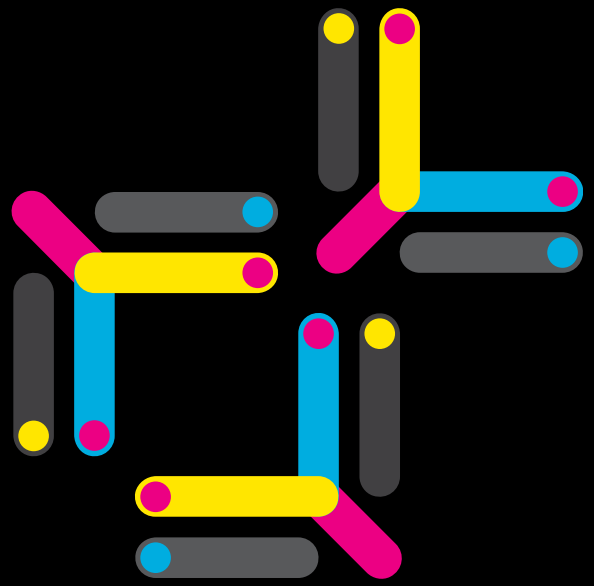


atum.bio

# Bispecifics & Fc fusion Developability Analytics


**Contact us:**

info@atum.bio

+1-877-DNA-TOGO

+1-650-853-8347


ATUM

# *in silico* Predictions

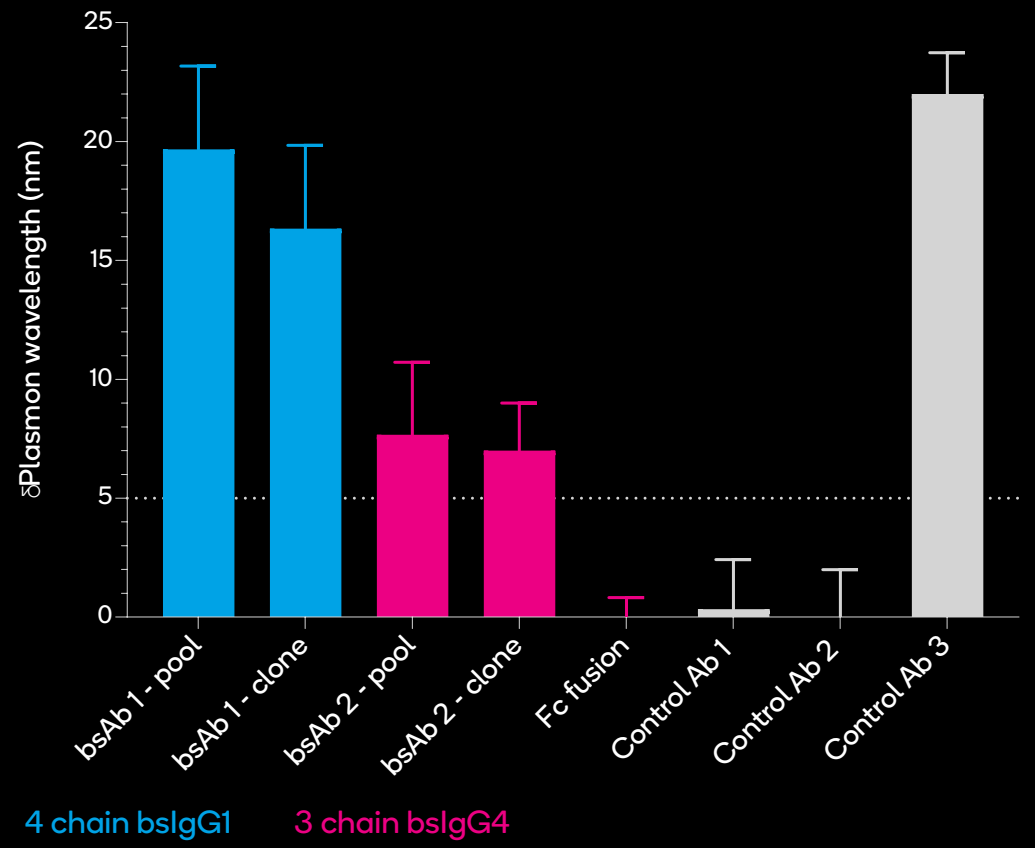

| | | *in silico* Analysis | | | | |
|---|---|---|---|---|---|---|
| | Protein Name | Mol. Wt. (MW) | Isoelectric point (PI) | N-Glycans* | GRAVY – Hydrophobicity* | Number of Cysteines |
| 4 chain bsIgG1 | bsAb 1 - pool | 145671 | 6.48 | [299], [295], N/A | -0.45, -0.49, -0.56 | 27 |
| | bsAb1 - clone | 145671 | 6.48 | [299], [295], N/A | -0.45, -0.49, -0.56 | 27 |
| 3 chain bsIgG4 | bsAb 2- pool | 146942 | 7.99 | N/A, [312], [302], N/A | -0.27, -0.53, -0.39, -0.44 | 34 |
| | bsAb 2 - clone | 146942 | 7.99 | N/A, [312], [302], N/A | -0.27, -0.53, -0.39, -0.44 | 34 |
| Fc fusion | Fc fusion | 102476 | 7.2 | [148,170,316] | -0.53 | 29 |

**Heavy chain, Light chain (H,L)*
*N-Glycans - N-X-S/T motif (X is any amino acid except proline)*
*Positive GRAVY values indicate hydrophobic, negative values indicate hydrophilic*
*Cysteines - Could be a potential issue to folding and cause aggregation*

ATUM

# Aggregation Propensity: AC-SINS

## *(Affinity Capture - Self Interaction Nanoparticle Spectroscopy)*



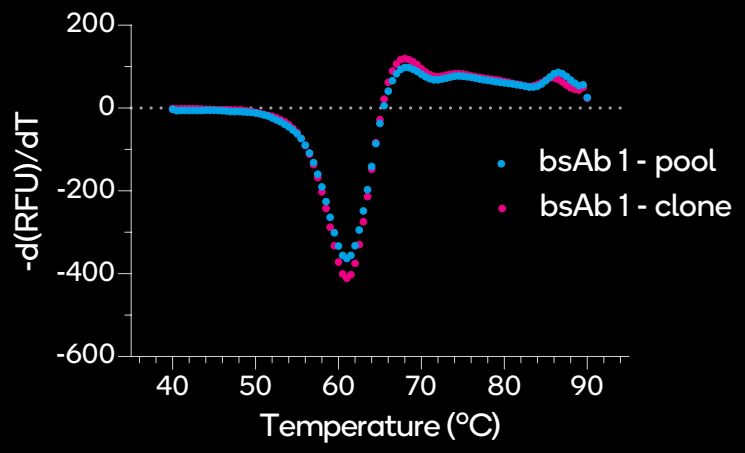

| mAb | Protein Name | δ Plasmon wavelength (nm) | Standard Deviation |
|---|---|---|---|
| 4 chain bsIgG1 | bsAb 1 - pool | 20 | 3.51 |
| | bsAb 1 - clone | 16 | 3.51 |
| 3 chain bsIgG4 | bsAb 2 - pool | 8 | 3.06 |
| | bsAb 1 - clone | 7 | 2.00 |
| Fc fusion | Fc fusion | 0 | 1.15 |

Higher signal = Higher aggregation

ATUM

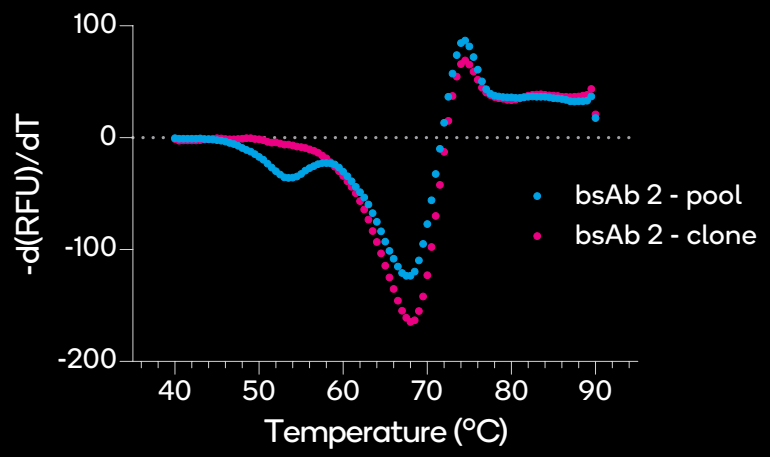
# Thermo Stability: Tm

## 4 chain bsIgG1




| Protein Name | Tm (°C) |
|---|---|
| bsAb 1 - pool | 61.0 |
| bsAb 1 - clone | 61.0 |

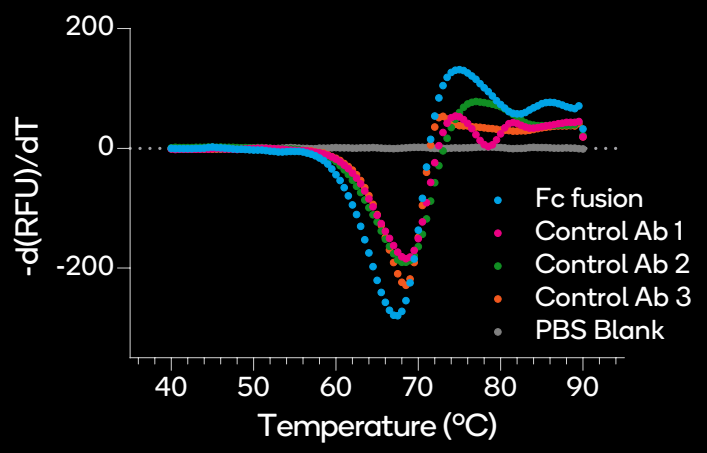
## 3 chain bsIgG4




| Protein Name | Tm (°C) |
|---|---|
| bsAb 2 - pool | 53.5 ; 68* |
| bsAb 2 - clone | 68.0 |

**The protein undergoes multiple unfolding, resulting in more than one Tm value.*

## Fc fusion

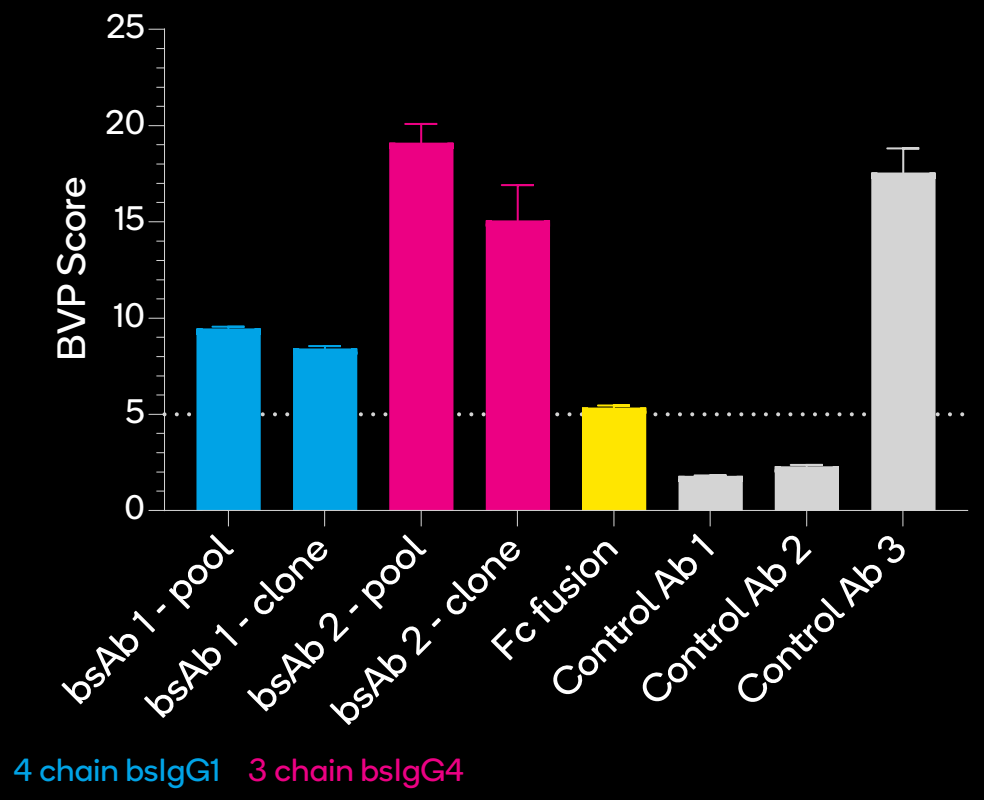



| Protein Name | Tm (°C) |
|---|---|
| Fc fusion | 67.5 |
| Control Ab 1 | 68.5 |
| Control Ab 2 | 68.0 |
| Control Ab 3 | 68.5 |

ATUM

# Polyspecificity: BVP-ELISA

## *(BaculoViral Particle – ELISA)*




| | Protein Name | BVP Score | Standard Deviation |
|---|---|---|---|
| 4 chain bsIgG1 | bsAb 1 - pool | 9.47 | 0.082 |
| | bsAb 1 - clone | 8.43 | 0.109 |
| 3 chain bsIgG4 | bsAb 2 - pool | 19.11 | 0.982 |
| | bsAb 2 - clone | 15.08 | 1.826 |
| Fc fusion | Fc fusion | 5.36 | 0.104 |

Higher BVP score = Poorer *in vivo* PK

ATUM