Supplemental Data.

Figure S-1.
Capacity of Boronate Affinity Chromatography.
Figure S-2.
Linearity of Boronate Affinity Chromatography.

\[ y = 17.484x - 7.943 \]
\[ R^2 = 0.9987 \]

\[ y = 17.791x - 8.884 \]
\[ R^2 = 0.9995 \]
Supplemental Figure S-3. Comparison of MS/MS Spectra of Glycated Peptide L2/3 From Three Samples

(A) Force-glucosylated MS² peptide L2/3 + hexitol (+ sodium borohydride)

(B) BDS MS² peptide L2/3 + hexitol (+ sodium borohydride)

(C) BDS MS² peptide L2/3 + hexose (- sodium borohydride)
Supplemental Figure Captions.

Figure S-1.

Figure S-1 shows levels of glycation observed for untreated and forced-glucosylated antibody samples across 50 to 150 µg load ranges. At the highest load levels, linearity for the samples with higher levels of glycation started to drop, showing that the capacity of the column had been exceeded. Traces start from BDS (lowest level of glycation) through 4, 7, 10 and 21-days highest level of glycation.

Figure S-2.

Figure S-2 shows the linearity data obtained by mixing BDS with day-21 glucosylated antibody at known ratios. Linear equations could be fit for data at both 75 and 100 µg load levels with R² values of 0.998 and 0.999 respectively, showing the linearity of the method for these samples at this protein concentration (10 mg/mL) in sodium phosphate mobile phase.

Figure S-3.

Figure S-3 shows a comparison of MS/MS spectra corresponding to glycated peptide L2/3 from three samples. Spectra from sodium borohydride treated, forced-glucosylated antibody are shown in (A) and compared to borohydride treated (B) and untreated (C) BDS. Spectra (A) and (B) allowed confirmation of the site of glycation at L24 in light chain, while the underivatized spectra showed a dominant neutral loss that prevented assignment of the peptide. For the derivatized spectra, major ions consistent with a mass shift of +164 Da, confirming the modification, have been labeled with the symbol ‘#.’ The major ion corresponding to a neutral loss of –35.4 Da, consistent with the loss of two water molecules, has been indicated in the underivatized spectrum. Compare these confirmations to the UV data shown in Figure 12 and discussed in the text.