Electronic Supplementary Material (ESI) for Analyst.

Supporting Information:

Ion Mobility-Mass Spectrometry Reveals General Trends in the Gas-phase Ejection of Compact Subunits from Intact Protein Complexes

Russell E. Bornschein, Brandon T. Ruotolo*

Department of Chemistry, University of Michigan, 930 N. University Ave., Ann Arbor, MI 48109

*To Whom Correspondence should be addressed: bruotolo@umich.edu, [V] 734-615-0198, [F] 734-615-3718

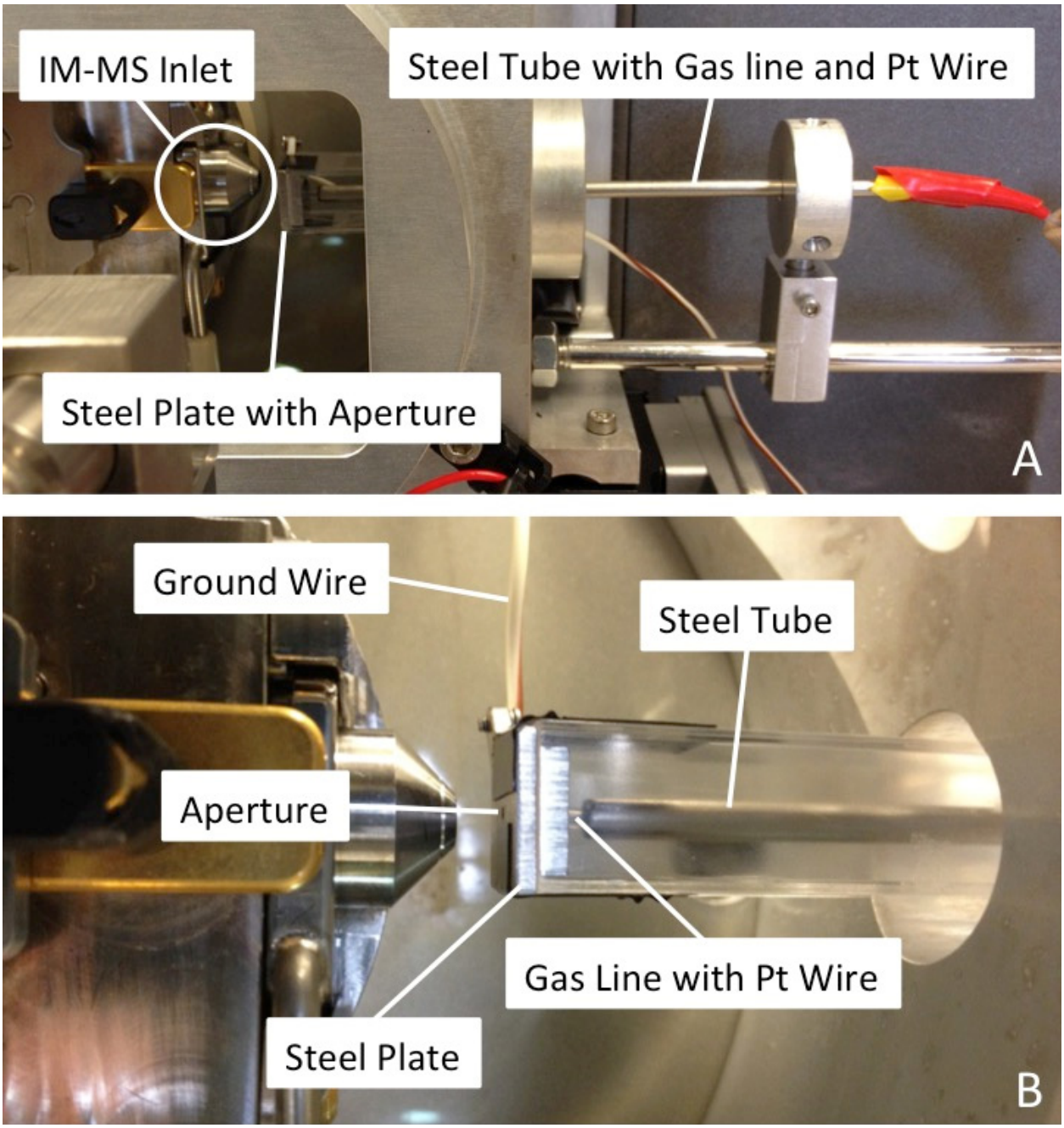

Figure S1. Assembled CDP positioned within Synapt G2 ESI source region. (A) Probe positioned in-line with IM-MS inlet and orthogonal to ESI emitter. (B) Close up of CDP displaying essential elements of the assembly.

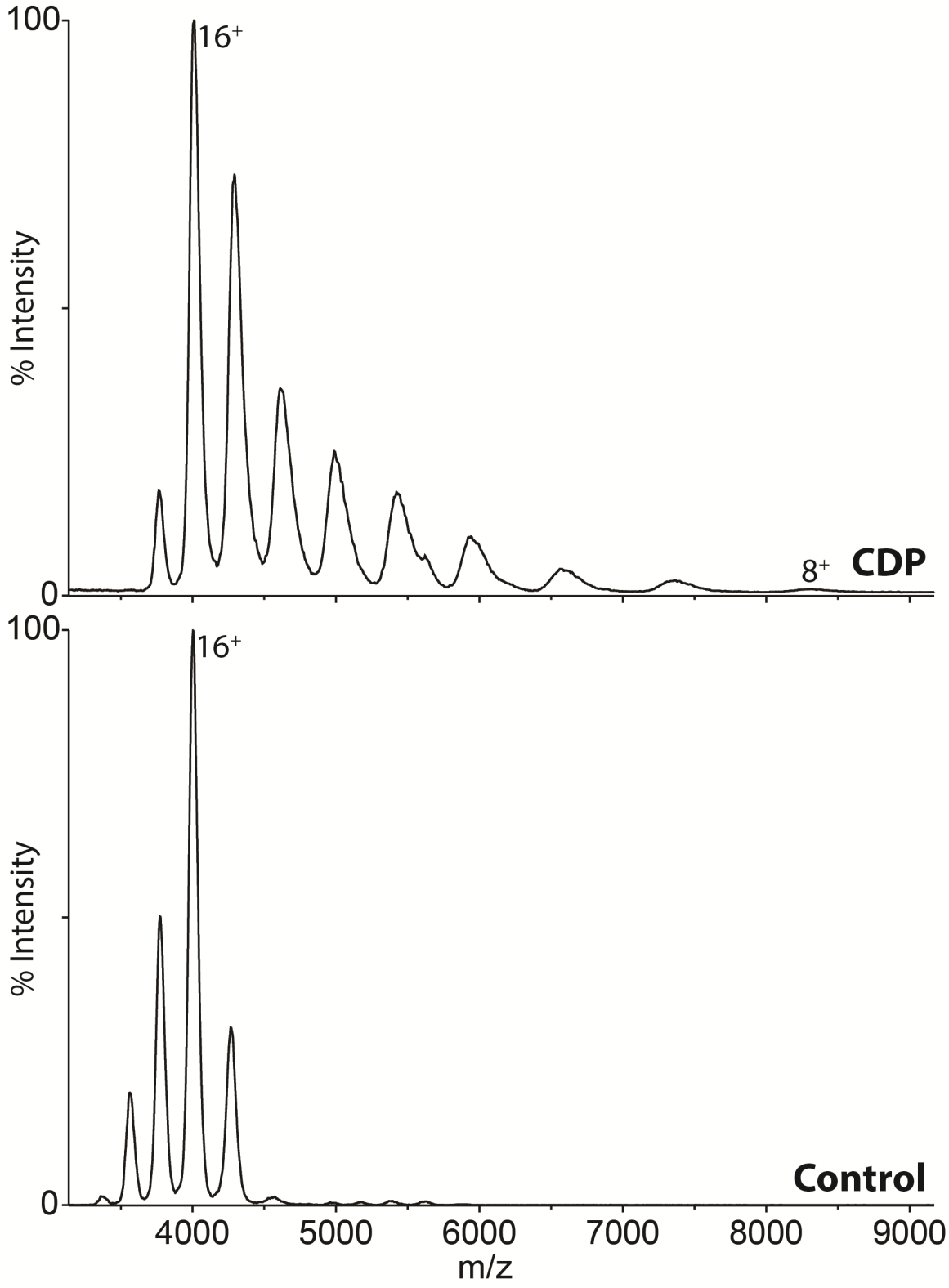

Figure S2. Avidin mass spectra with and without corona discharge charge reduction.

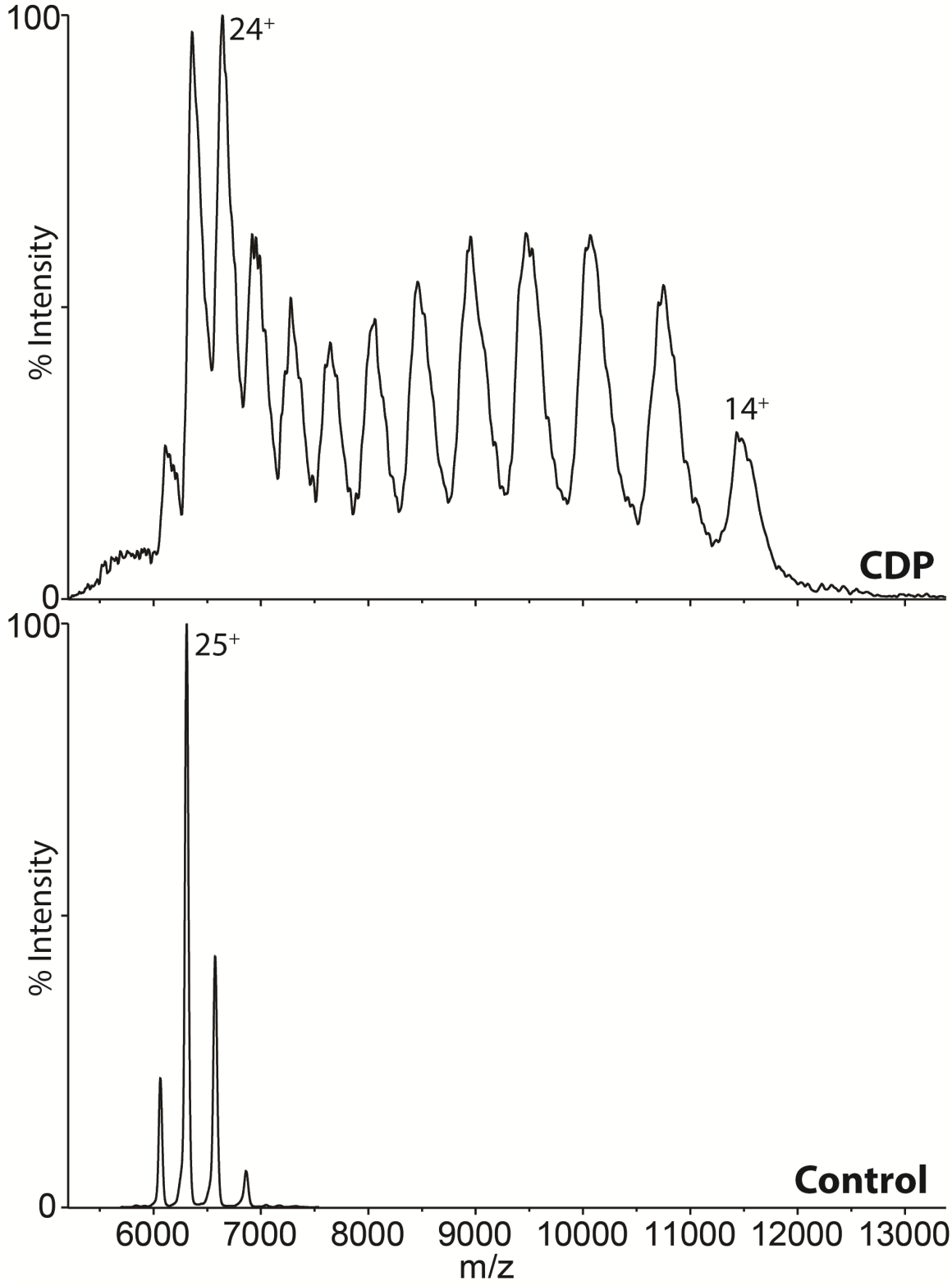

Figure S3. Aldolase mass spectra with and without corona discharge charge reduction.

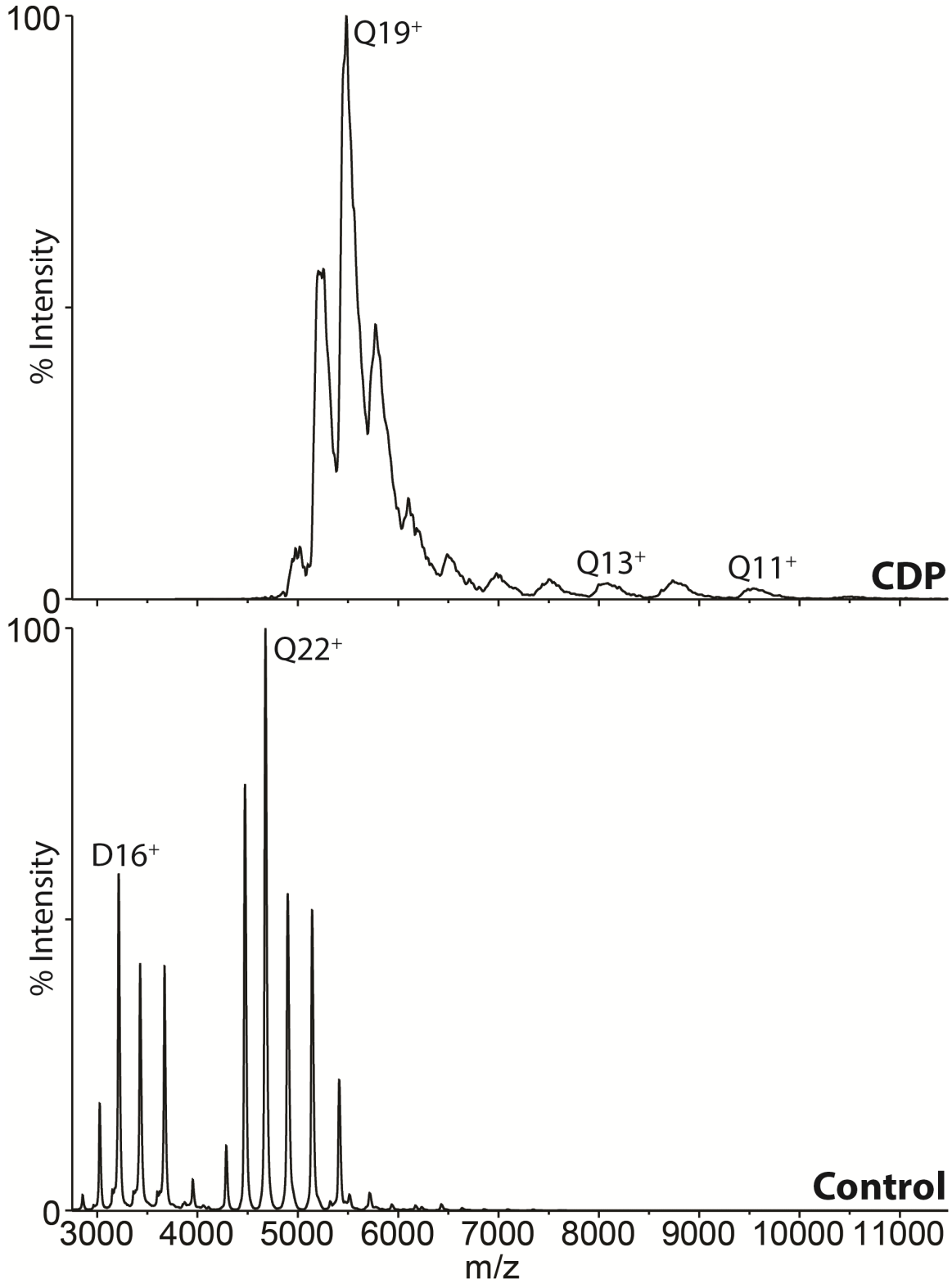

Figure S4. Concanavalin A mass spectra with and without corona discharge charge reduction.

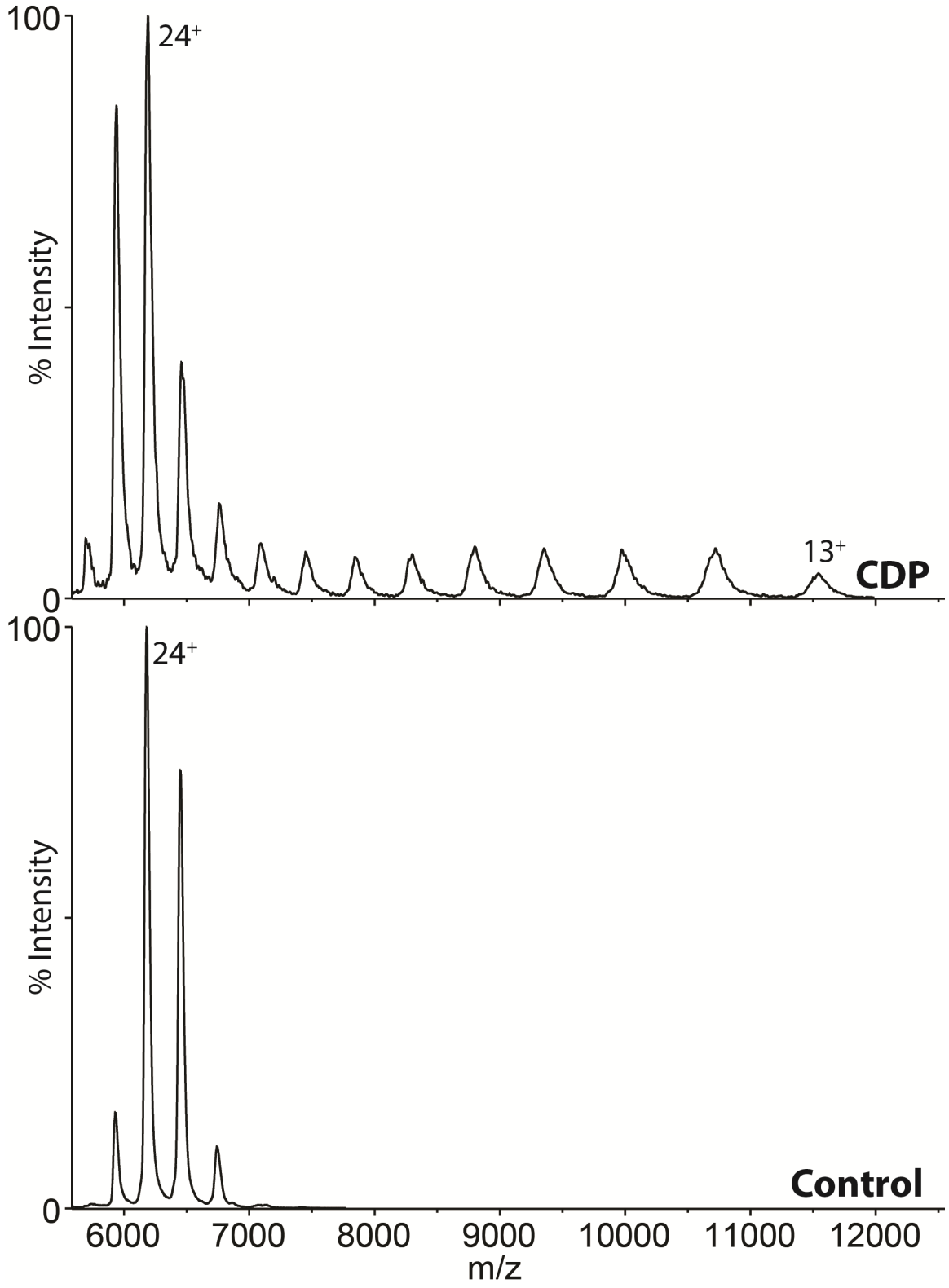

Figure S5. Alcohol dehydrogenase mass spectra with and without corona discharge charge reduction.

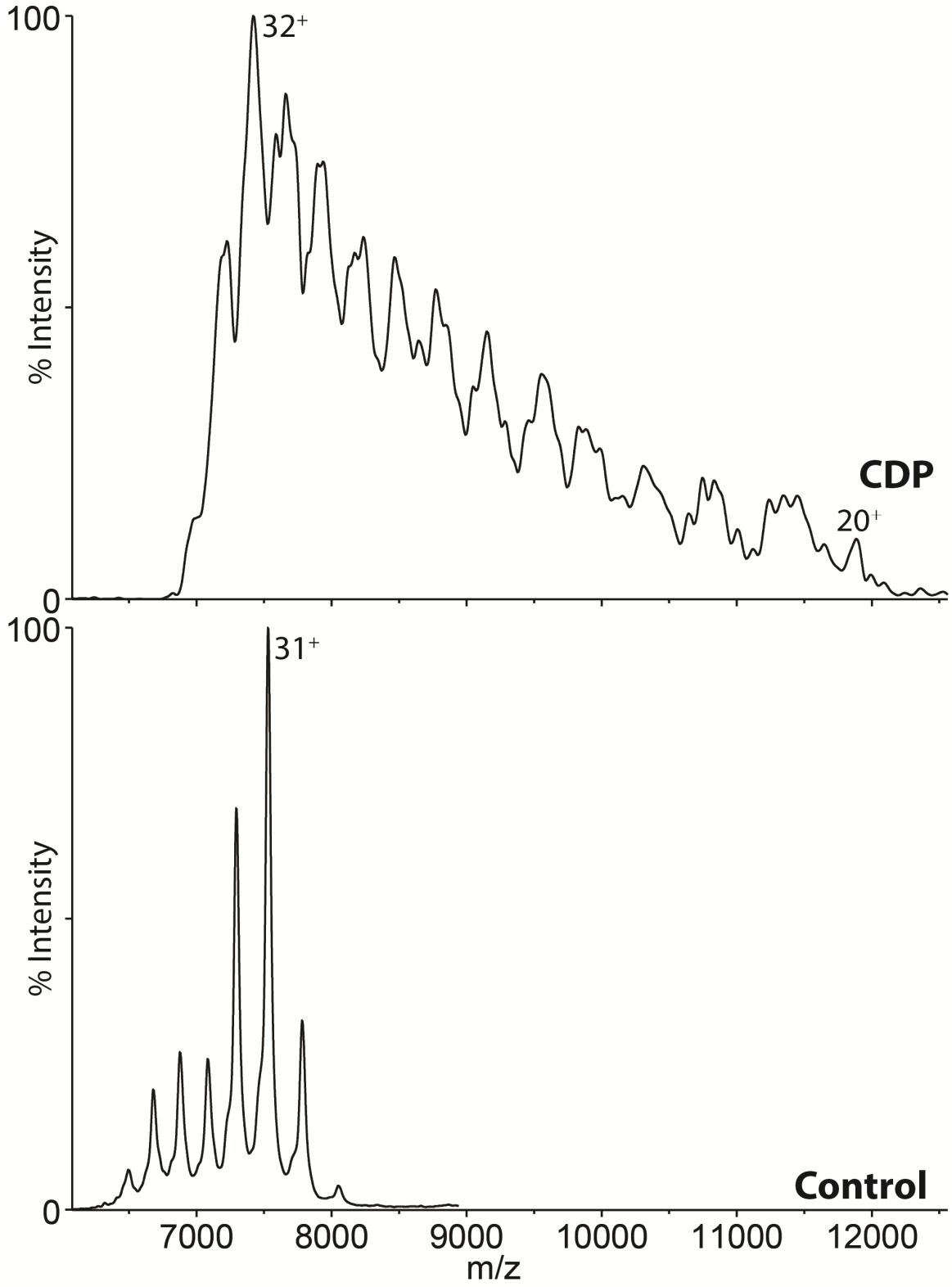

Figure S6. Pyruvate kinase mass spectra with and without corona discharge charge reduction.

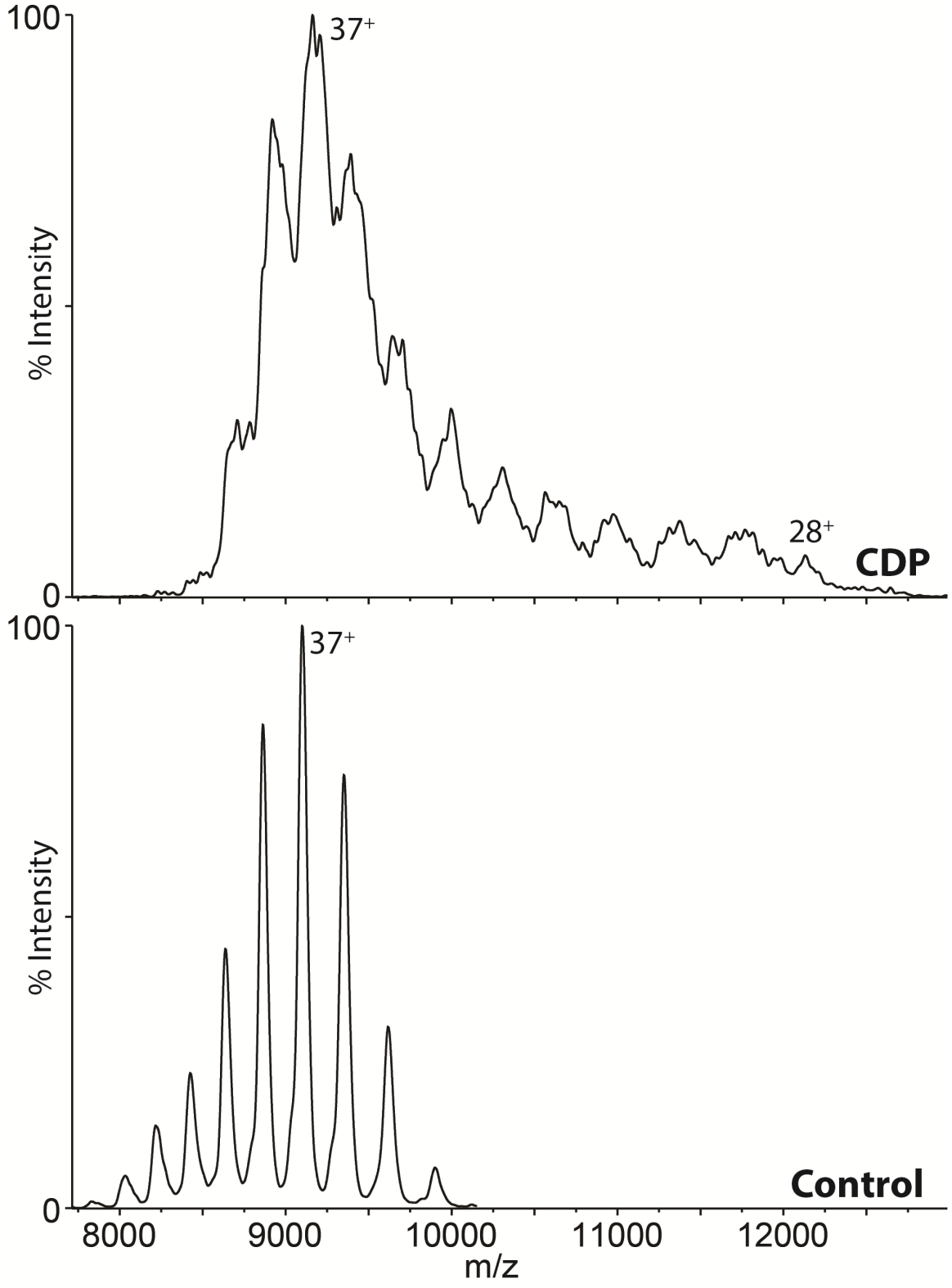

Figure S7. Glutamate dehydrogenase mass spectra with and without corona discharge charge reduction.

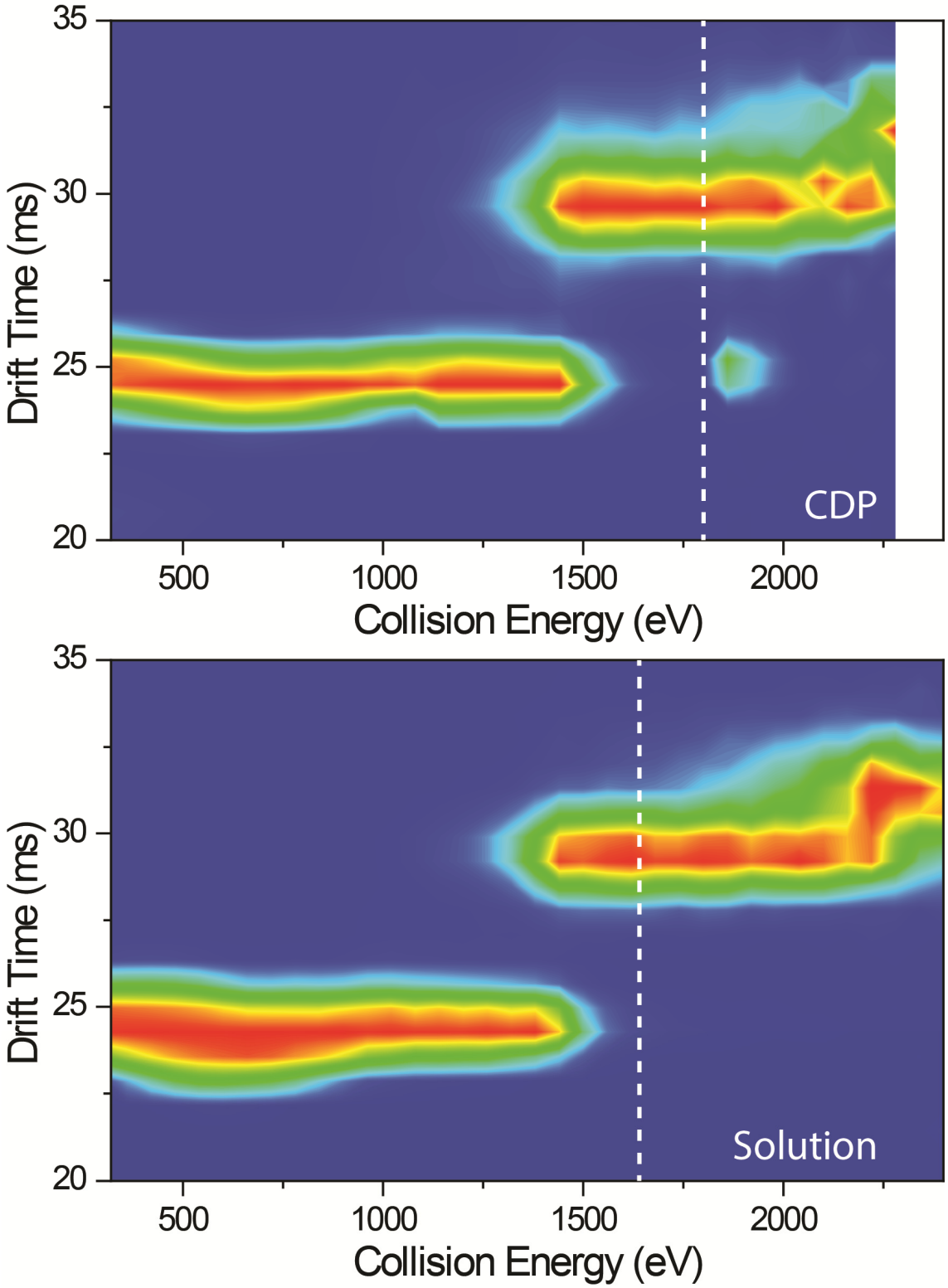

Figure S8. Avidin CIU fingerprints generated from the 12+ ion with solution based charge reduction (TEAA) and corona discharge charge reduction. Vertical dashed lines represent the threshold of dissociation.

Table S1. Measured CCS values for each observed charge state of β-Lac dimer, TPI, SAP, and β-Gal under control and CDP charge reduction. Charge states denoted with a star (∗) were observed in the mass spectrum but has low drift time intensity, preventing CCS measurement.

		Measured CCS (Å^2)							
		b-Lac dimer		TPI		SAP		b-Gal	
		Control	CDP	Control	CDP	Control	CDP	Control	CDP
Oligomer Charge State	4^+		*						
	5^+		*						
	6^+		2223						
	7^+		2301						
	8^+		2376		2801				
	9^+		2385		2896				
	10^+		2551		2986				
	11^+	2625	2623		3074		*		
	12^+	2723	2731		3159		*		
	13^+	2848		3236	3244		5821		
	14^+			3316	3328		5859		
	15^+			3382	3422		5906		
	16^+			3496	3542		5998		
	17^+						6088		
	18^+						6155		
	19^+						6244		
	20^+						6290		
	21^+						6380		
	22^+					6496	6437		
	23^+					6580	6568		
	24^+					6600	6620		
	25^+					6658	6704		
	26^+					6687	6765		
	27^+					6774			
	28^+					6887			
	29^+								
	30^+								
	31^+								

	32^+								
	33^+								
	34^+								
	35^+								
	36^+								*
	37^+								17306
	38^+								17368
	39^+								17580
	40^+								17471
	41^+								17435
	42^+								17494
	43^+								17621
	44^+							*	17726
	45^+							17810	17646
	46^+							17981	17637
	47^+							17565	17780
	48^+							17520	17779
	49^+							17544	17681
	50^+							17543	17688
	51^+							17591	17668
	52^+							17620	17699