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Supporting information for article:

Structural insights into the interaction of the conserved mammalian proteins GAPR-1 and Beclin 1, a key autophagy protein

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Table S1 Concentrations of eluate fractions from SEC-SAXS

Fraction #	Fraction concentration (μM)	
	WT GAPR-1	Pentad Mutant GAPR-1
6	1	2
7	2	41
8	42	31
9	28	23
10	9	5
11	2	2

1 mL fractions were collected in each case. For pentad mutant GAPR-1, fractions 7-8 correspond to the ~20 Å peak part and factions 9-11 correspond to the ~16 Å peak part.

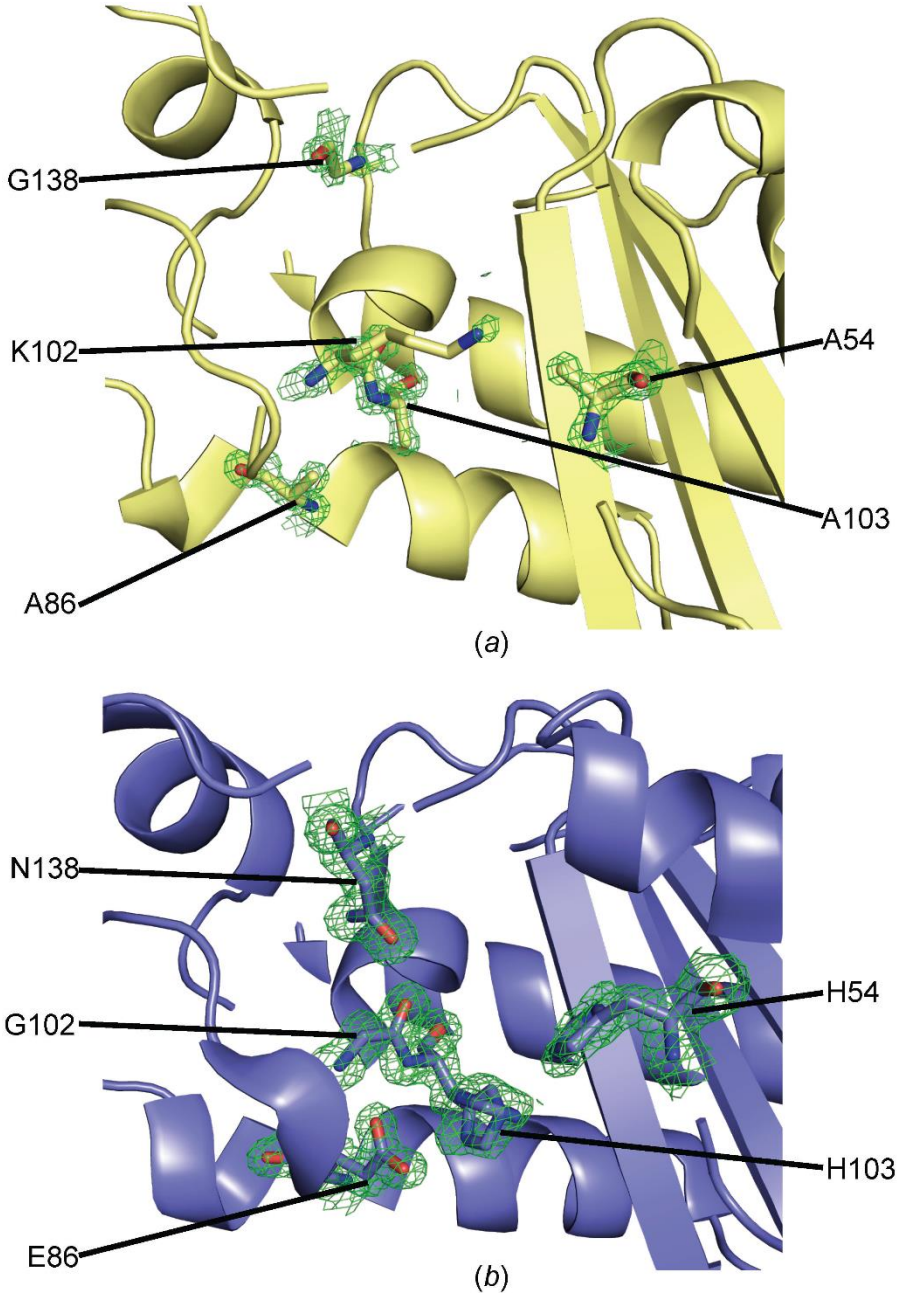

Figure S1 $2F_o$-F_c electron density displayed at contour levels of 1.0 σ around the mutated/WT GAPR-1 residues. Mutant or WT residues are shown as sticks and electron density is shown as green mesh. (*a*) Pentad GAPR-1. (*b*) WT GAPR-1.

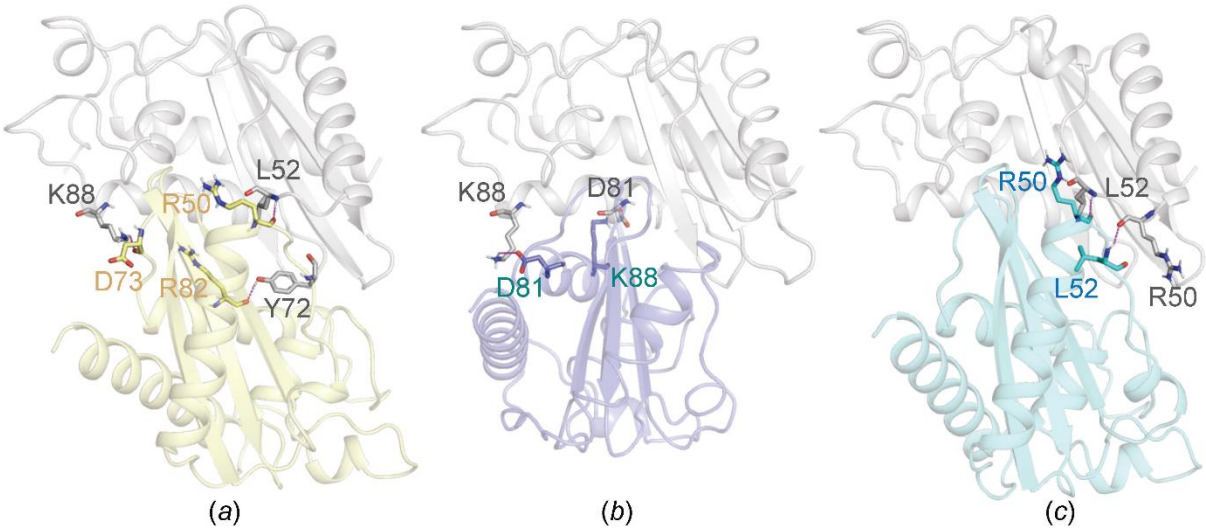

Figure S2 The dimer interface varies in the different GAPR-1 dimers. The grey subunit of each dimer is in a superimposable orientation. One set of symmetry-related pairs of hydrogen bonds and salt bridges across the dimer interface are shown for each structure. (*a*) Pentad mutant. (*b*) WT. (*c*) WTinIP6.

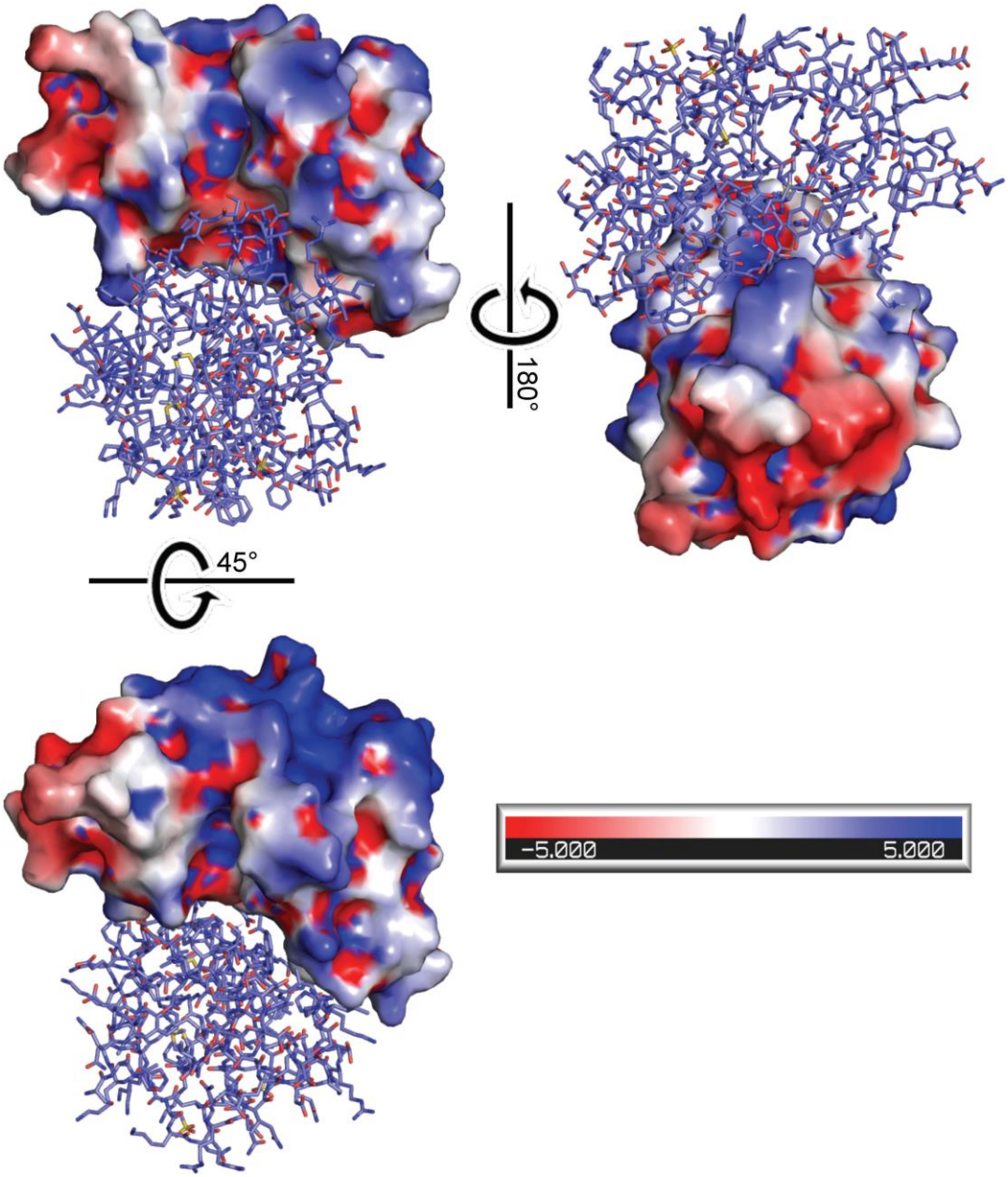

Figure S3 WT GAPR-1 dimerization occludes the equatorial groove. Electrostatic potential surface of one subunit of the homodimer is shown, while the partner subunit is displayed in stick, with atoms colored by atom type: oxygen, red; nitrogen, blue; and carbon, violet. The electrostatic potential surface of the same subunit of the homodimer is shown in the top left and bottom panels, while in the right panel that subunit is shown in stick, with the partner subunit shown in electrostatic potential surface. Rotations representing the different views in each panel are indicated.

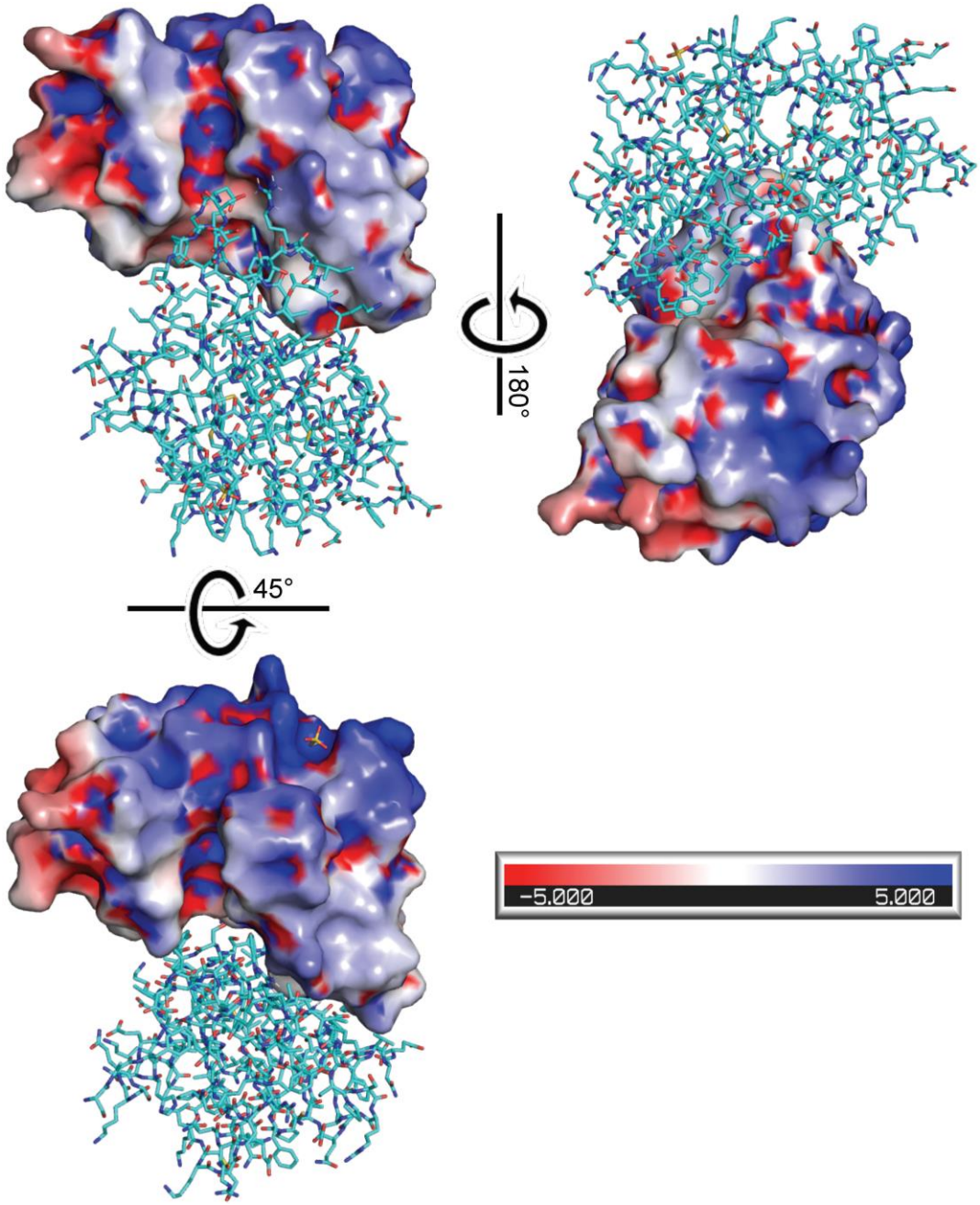

Figure S4 WTinIP6 GAPR-1 dimerization occludes the equatorial groove. Electrostatic potential surface of one subunit of the homodimer is shown, while the partner subunit is displayed in stick, with atoms colored by atom type: oxygen, red; nitrogen, blue; and carbon, cyan. The electrostatic potential surface of the same subunit of the homodimer is shown in the top left and bottom panels, while in the right panel that subunit is shown in stick, with the partner subunit shown in electrostatic potential surface. Rotations representing the different views in each panel are indicated.

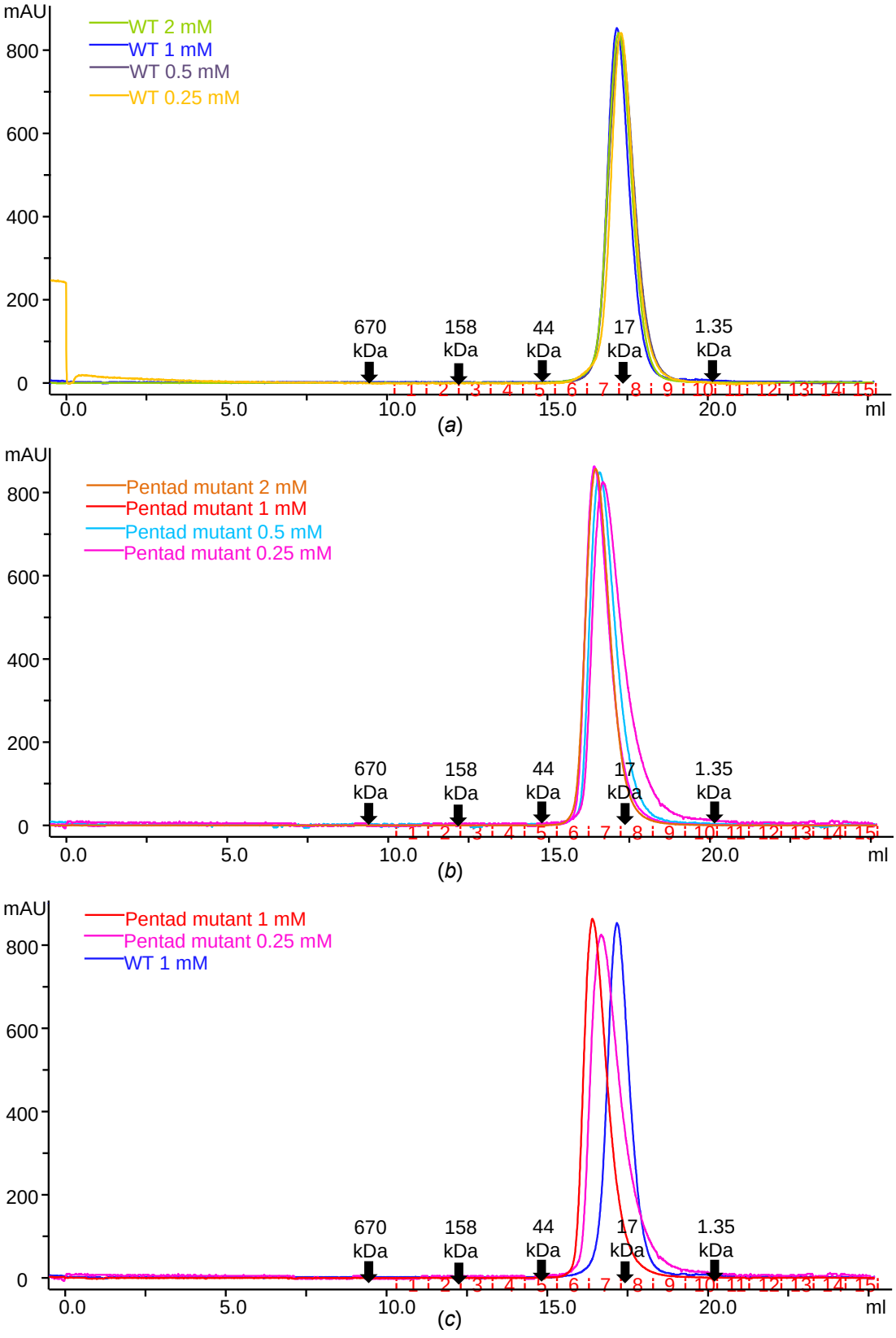

Figure S5 Analytical SEC elution profile of GAPR-1. Superimposed profiles for different concentration of samples injected as indicated for (*a*) WT. (*b*) Pentad mutant. (*c*) WT and pentad mutant GAPR-1.

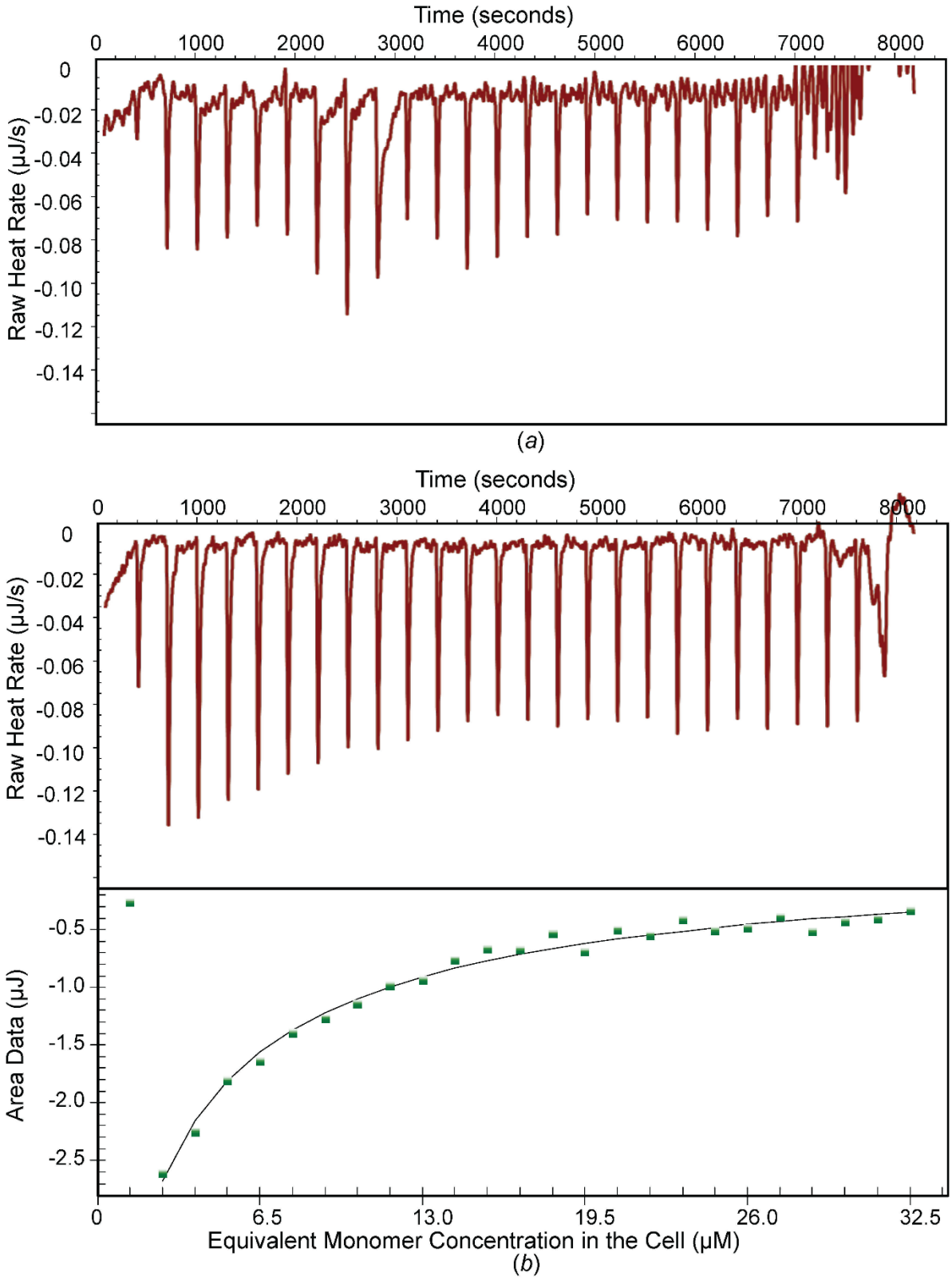

Figure S6 ITC quantification of GAPR-1 self-dissociation. (a) WT. (b) Pentad mutant.

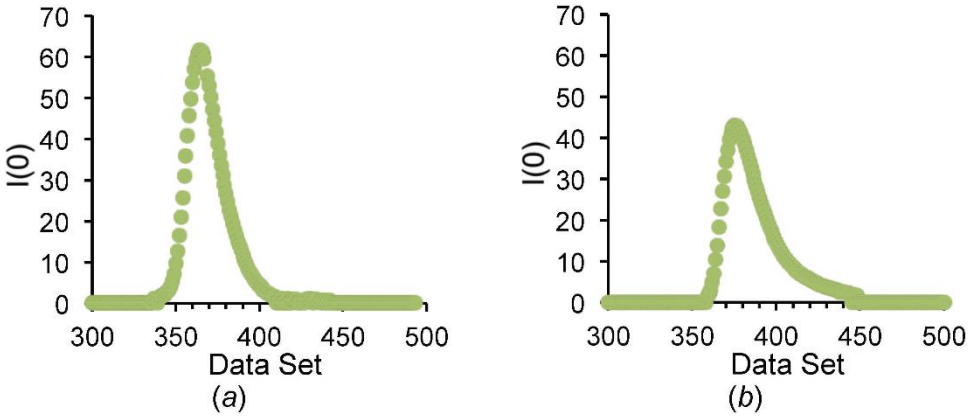

Figure S7 I_0 distribution across the GAPR-1 scattering peak. (*a*) WT. (*b*) Pentad mutant.