Table S1. Crystallization Data Collection and Refinement Statistics, Related to Figure 5 and 6

	OTUD1 OTU (287-437)	OTUD2 OTU (132-314)	OTUD3 cat (52-209)	OTUD2 OTU C160A (132-314) Lys11 diUb	OTUD2 OTU C160A (147-314) K11 peptide
Data collection statistics					
Beamline	ESRF ID23-1	ESRF ID23-1	ESRF ID29	Diamond I-03	Diamond I-04
Wavelength (Å)	0.9794	0.9792	0.97627	0.9763	0.9464
Space Group	*I*4	$P3_121$	$P3_212$	*C*2	*P*6
Unit Cell (Å)	*a* = 82.24 *b* = 82.24 *c* = 103.94	*a* = 60.67 *b* = 60.67 *c* = 86.18	*a* = 36.20 *b* = 36.20 *c* = 211.05	*a* = 174.79 *b* = 44.22 *c* = 84.95 β = 91.4º	*a* = 164.48 *b* = 164.48 *c* = 44.73
Resolution (Å)	52.0 – 2.10 (2.21 – 2.10)	33.3-1.47 (1.55-1.47)	42.21-1.55 (1.63-1.55)	50.0 - 3.03 (3.19 - 3.03)	53.84 - 2.35 (2.43 - 2.35)
Observed reflections	65317 (9688)	128709 (18568)	92022 (13007)	40480 (6177)	177275 (17419)
Unique reflections	20153 (2957)	30915 (4562)	23429 (3352)	12691 (1860)	29294 (2827)
Redundancy	3.2 (3.3)	4.2 (4.1)	3.9 (3.9)	3.2 (3.3)	6.1 (6.2)
Completeness (%)	99.8 (99.9)	97.2 (99.5)	98.9 (99.1)	97.9 (98.8)	100 (100)
R_{merge}	0.095 (0.530)	0.069 (0.623)	0.041 (0.477)	0.135 (0.441)	0.118 (0.887)
<I/σI>	8.9 (2.3)	10.5 (2.0)	14.9 (2.1)	7.1 (3.3)	10.0 (1.9)
Phasing statistics					
Molecular Replacement	Phaser	Phaser	Phaser	Phaser	Phaser
Search model	OTUD3 OTU	3by4 (yOtu1)	OTUD5 OTU (without N-terminal helix)	OTUD2 OTU, Ub	OTUD2 OTU, Ub
Refinement statistics					
Reflections in test set	1029	1554	1204	613	1487
R_{cryst}	16.2	17.9	17.5	19.4	18.7
R_{free}	20.2	19.5	22.9	25.4	23.7
Number of groups					
Protein residues	299	175	141	546	485
Ions and ligand atoms	10	24	0	2	5
Water	147	131	113	11	231
Wilson B-factor	25.7	18.3	23.66	42.89	37.2
RMSD from ideal geometry					
Bond length (Å)	0.007	0.020	0.005	0.009	0.009
Bond angles (°)	1.017	2.065	0.916	1.156	1.141
Ramachandran Plot Statistics					
In Favoured Regions (%)	292 (99.0)	192 (98.7)	140 (96.6)	516 (96.5)	456 (95.0)
In Allowed Regions (%)	3 (1.0)	2 (1.1%)	5 (3.5)	19 (3.5)	24 (5.0)
Outliers (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Values in parentheses are for the highest resolution shell.