

**Table S2. Data collection and refinement statistics**

	SeMet SVBP <sub>1-66</sub> - VASH1 <sub>70-306</sub>	SVBP <sub>1-66</sub> -VASH1 <sub>70-306</sub>	SVBP <sub>1-66</sub> - VASH1 C169A <sub>70-306</sub>	SVBP <sub>3-49</sub> -VASH1 <sub>70-306</sub> - GEEEGECY	SVBP <sub>1-52</sub> - VASH1 <sub>57-306</sub> -epoY
<b>PDB Accession code</b>	6J9I	6J9H	6J8N	6J8F	6J7B
<b>Data collection</b>					
Radiation wavelength (Å)	0.9793	0.9792	0.9792	0.9792	0.9785
Space group	I 2 2 2	P 2 <sub>1</sub> 2 <sub>1</sub> 2 <sub>1</sub>	P 2 <sub>1</sub> 2 <sub>1</sub> 2 <sub>1</sub>	P 2 <sub>1</sub> 2 <sub>1</sub> 2	P 2 2 <sub>1</sub> 2 <sub>1</sub>
<b>Cell dimensions</b>					
<i>a</i> , <i>b</i> , <i>c</i> (Å)	68.23, 123.363, 129.52	71.52, 93.37, 126.04	70.02, 90.08, 124.50	66.95, 108.38, 46.90	44.31, 70.92, 128.13
$\alpha$ , $\beta$ , $\gamma$ (°)	90, 90, 90	90, 90, 90	90, 90, 90	90, 90, 90	90, 90, 90
Resolution (Å)	50-3.50(3.56-3.50)	75.03-2.31(2.43-2.31)	50-1.95(2.02-1.95)	54.19-2.28(2.41-2.28)	70.92-1.62(1.71-1.62)
<i>R</i> <sub>merge</sub>	0.288(0.719)	0.241(1.486)	0.166(1.006)	0.190(1.697)	0.130(1.326)
<i>I</i> / $\sigma$ <i>I</i>	18.9(6.0)	8.8(3.4)	18(3)	10.9(2.2)	12.8(2.4)
CC1/2	0.995(0.958)	0.990(0.895)	1.000(0.853)	0.997(0.726)	0.998(0.686)
Completeness (%)	100(100)	99.9(99.9)	100(99.9)	99.9(100.0)	100(100)
Redundancy	30.3(30.1)	12.6(13.3)	12.8(12.6)	12.5(12.9)	12.0(12.3)
<b>Refinement</b>					
Resolution (Å)	44.67-3.50	62.20-2.31	33.70-1.95	54.19-2.28	44.31-1.62
No. of unique reflections	6832	37795	57964	16109	52437
<i>R</i> <sub>work</sub> / <i>R</i> <sub>free</sub>	0.232/0.258	0.248/0.271	0.185/0.210	0.199/0.241	0.177/0.197
<b>Number of atoms/B-factor (Å<sup>2</sup>)</b>					
VASH1(VASH1-EpoY)	1917/55.2	3850/54.8	3857/23.7	1917/51.9	2053/27.2
SVBP	200/78.6	459/63.4	400/26.6	183/58.3	265/34.6
Peptide	N/A	N/A	N/A	41/59.0	N/A
solvent	N/A	127/49.4	649/33.7	47/45.3	382/39.2
RMSD bonds (Å)/angles (°)	0.002/0.6	0.007/1.4	0.005/0.9	0.003/0.6	0.007/0.9
<b>Ramachandran Plot</b>					
favored/allowed/outliers (%)	97.2/2.8/0	96.1/3.9/0	97.6/2.4/0	96.9/3.1/0	98.9/1.1/0

Values in parentheses are for highest-resolution shell.