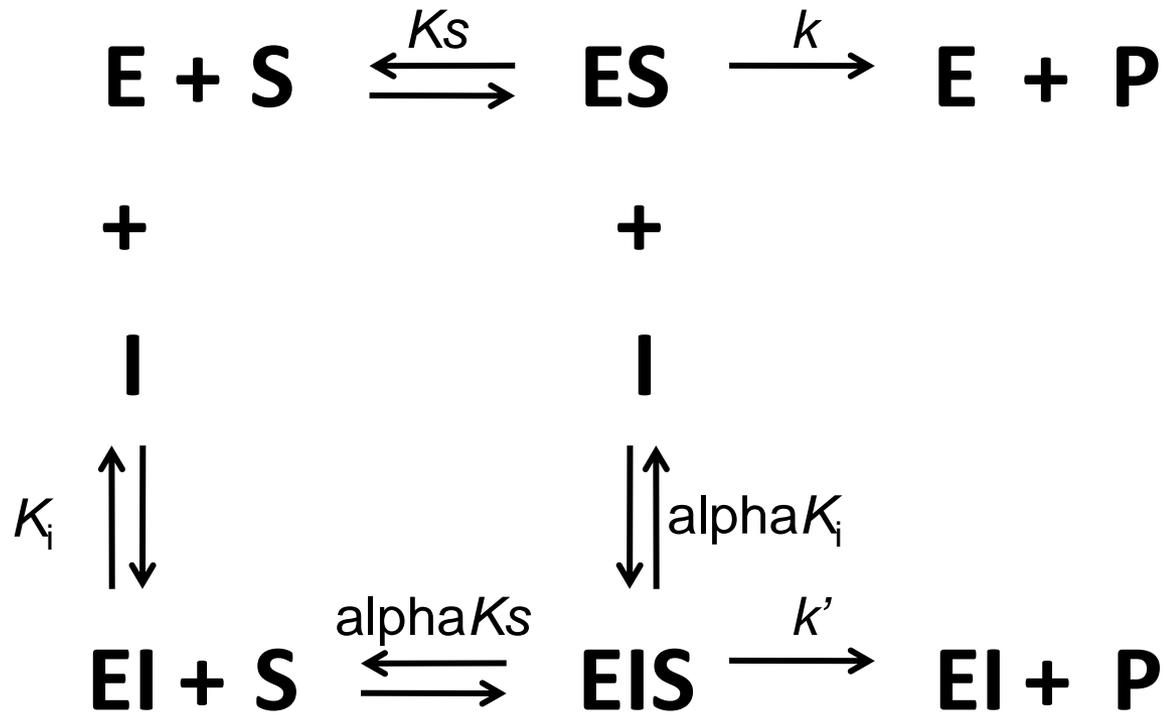


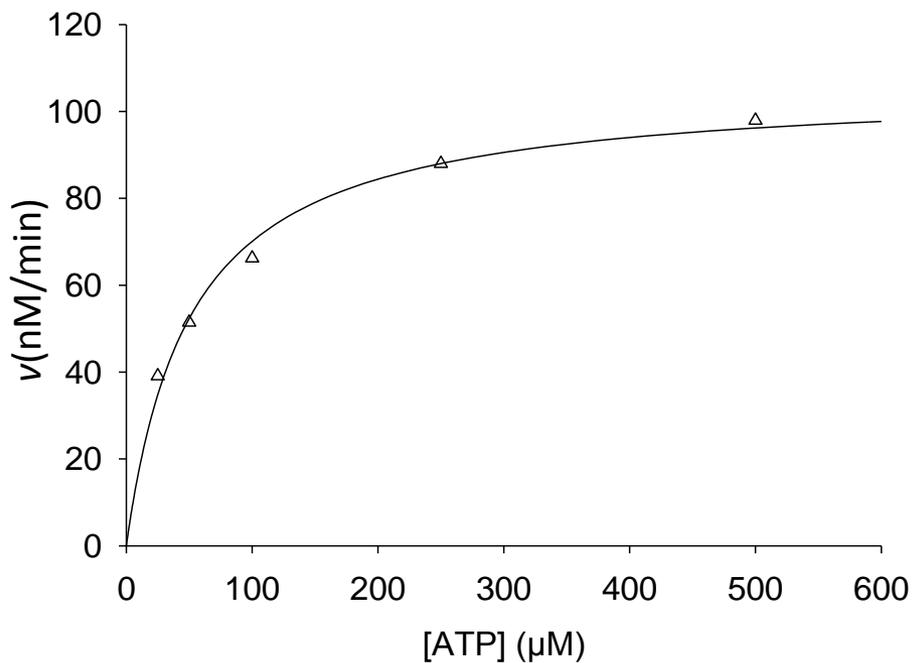
Supporting Information 1.



## Supporting Information 2.

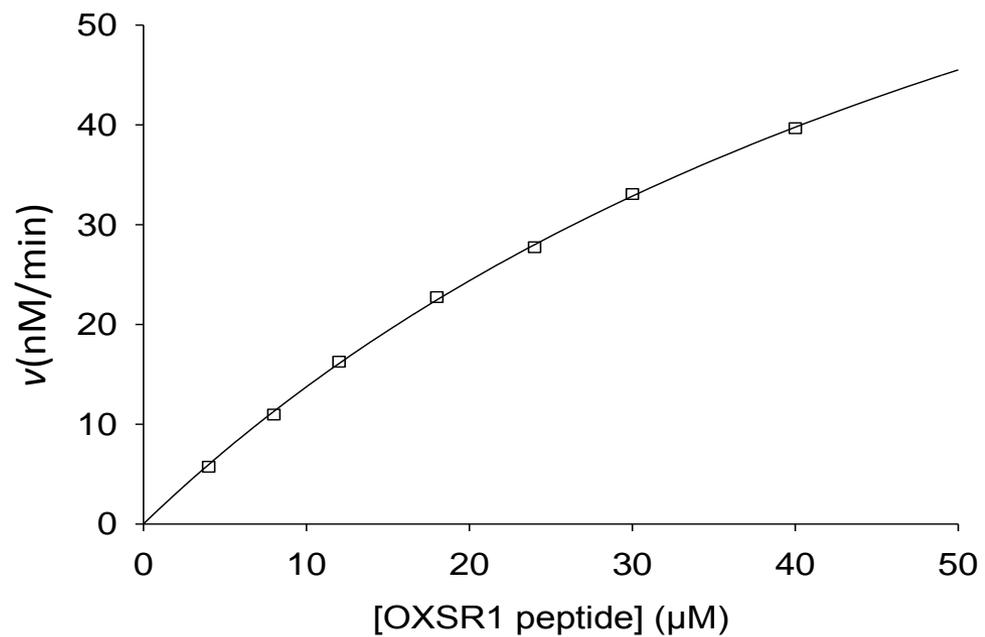
(A)

$K_m$  value for ATP = 52.0  $\mu\text{M}$



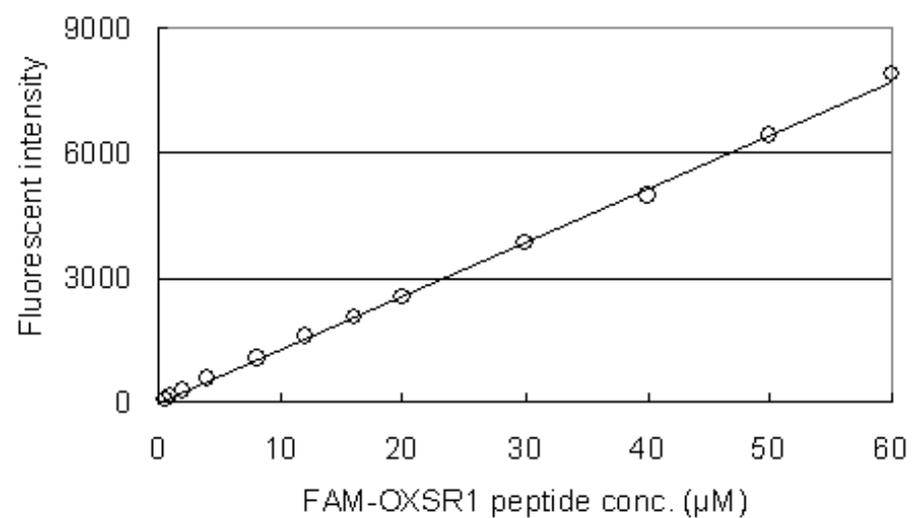
(B)

$K_m$  value for OXSR1 peptide = 68.4  $\mu\text{M}$

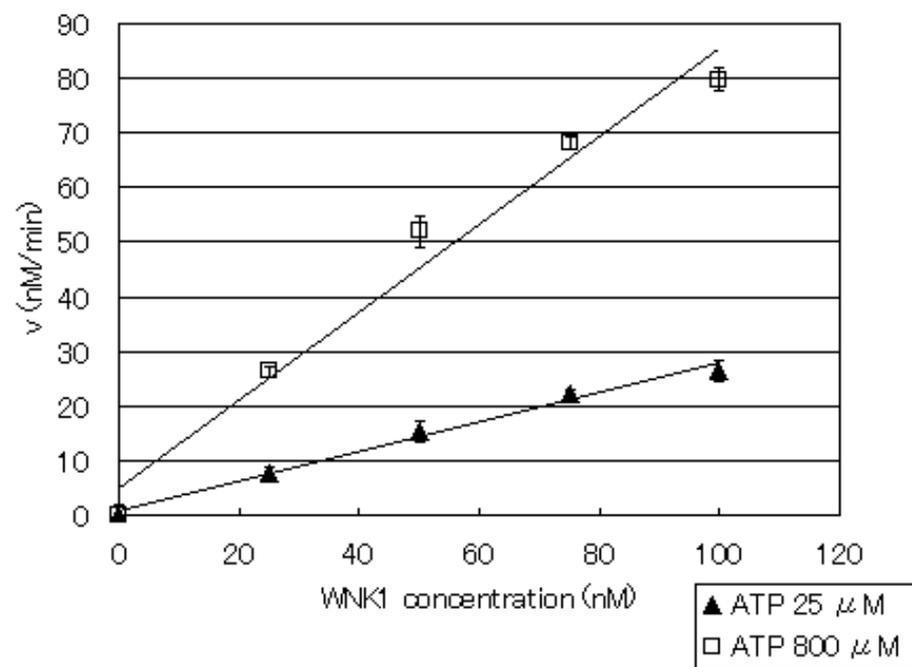


### Supporting Information 3.

(A)

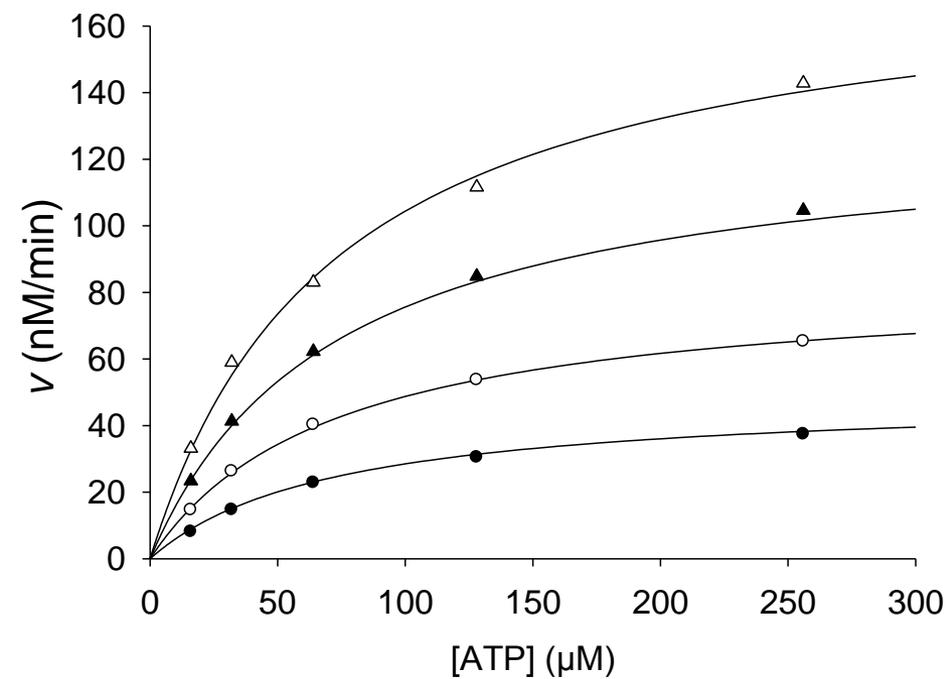


(B)



## Supporting Information 4.

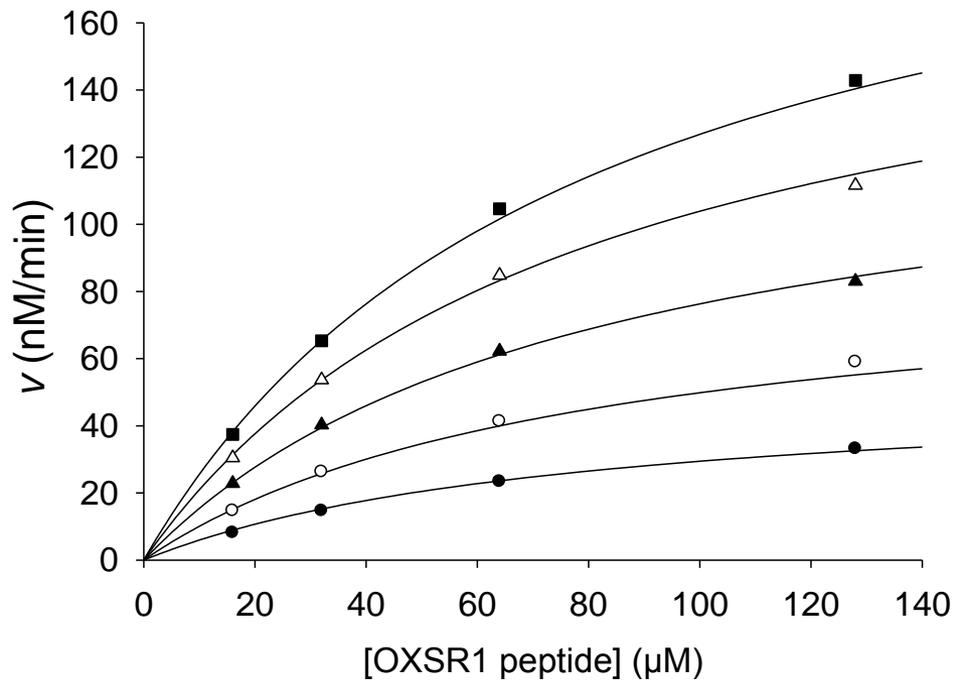
(A)



OXSR1 peptide ( $\mu\text{M}$ )

- B=16
- B=32
- ▲ B=64
- △ B=128

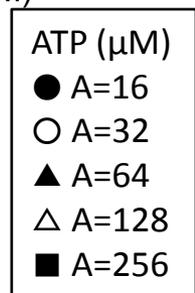
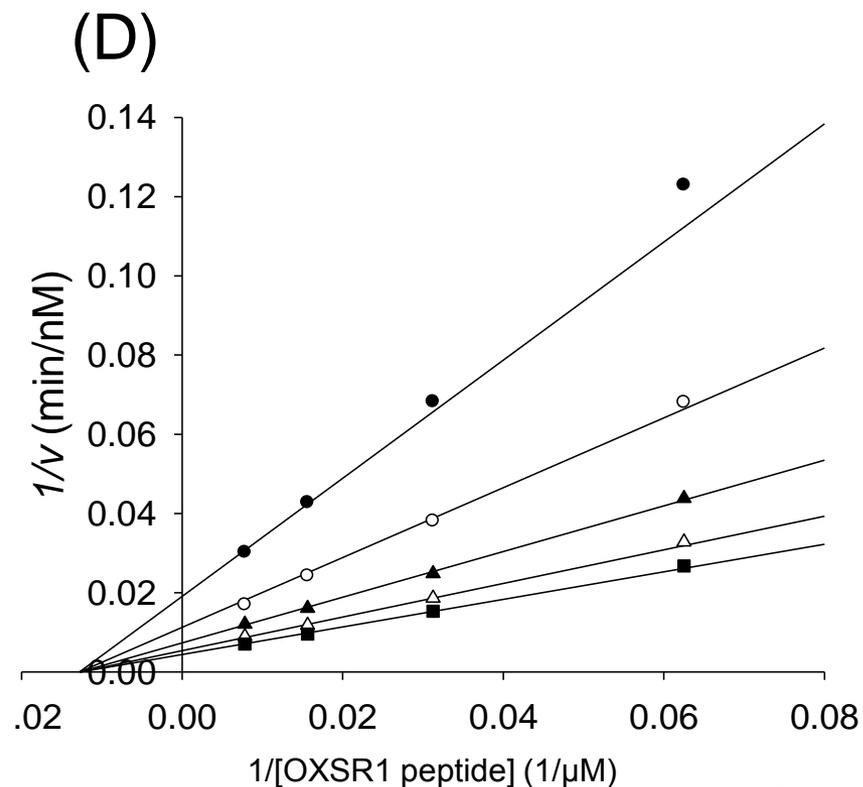
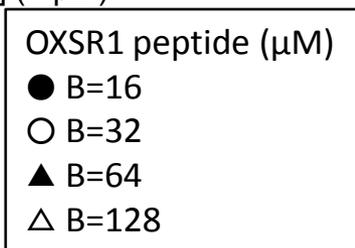
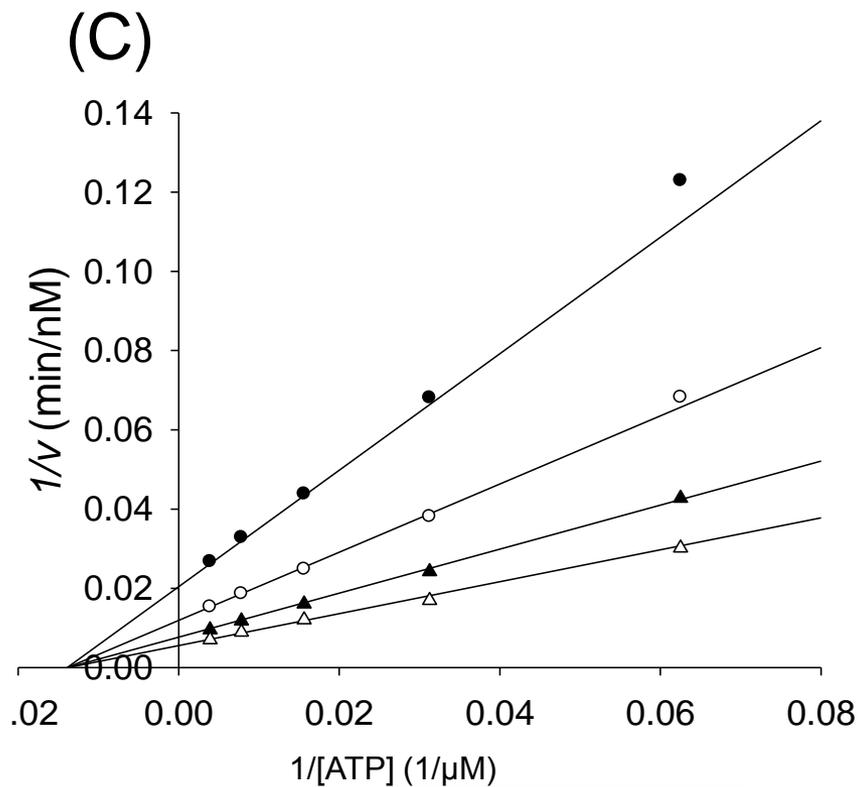
(B)



ATP ( $\mu\text{M}$ )

- A=16
- A=32
- ▲ A=64
- △ A=128
- A=256

## Supporting Information 4.



## Supporting Information 5.

	<b>FP assay</b>	<b>Mobility shift assay</b>
Enzyme	GST-WNK1(1-491)	GST-WNK1(1-491)
Enzyme conc.	0.07 nM	25 nM
Peptide substrate	RS tide FAM-XRSRSRSRSRSRSRSR (X: 6-aminocapric acid)	OXSR1 tide FAM-RVPGSSGRLHK-NH2
Peptide substrate conc.	100 nM	10 $\mu$ M
ATP conc.	25 $\mu$ M	25 $\mu$ M
ATP ( $K_m$ )	25 $\mu$ M	52 $\mu$ M
Upper limit of ATP	125 $\mu$ M	Unlimited
Reaction time	2 hours at 25°C	3 hours at 25°C
Staurosporine	IC <sub>50</sub> = 23.1 $\mu$ M	IC <sub>50</sub> = 30.2 $\mu$ M
PP1	IC <sub>50</sub> = 11.1 $\mu$ M	IC <sub>50</sub> = 16.4 $\mu$ M
PP2	IC <sub>50</sub> = 14.2 $\mu$ M	IC <sub>50</sub> = 14.6 $\mu$ M