

## **SUPPLEMENTAL FIGURE LEGENDS**

### **Figure S1 Autoradiography of MST1**

A and B) The activity of MST1-FL and MST1-KD towards FoxO1 is shown. The gel shows the incorporation of the  $\gamma$ P32 label as a function of concentration. All reactions were carried out for 15 minutes and then stopped with SDS loading buffer.

C and D) Autoradiography gel showing the activity of MST1-KD and MST1-FL towards histone H2B. The signal depicts the incorporation of the  $\gamma$ P32 label onto histone H2B. The autophosphorylation signal of MST1 is also visible as indicated.

E) Autoradiograph showing the phosphorylation of the C-terminal regulatory and dimerization domain (residues 338-end) at indicated concentrations using MST-FL as the enzyme.

F) Autoradiograph showing the autophosphorylation of the N-terminal kinase domain at indicated concentrations using MST-FL as the enzyme. A kinase dead form of the pseudosubstrate harboring mutation K59R was used to quantitatively measure the phosphorylation signal.

### **Figure S2 Autoradiography of mutant MST1 constructs**

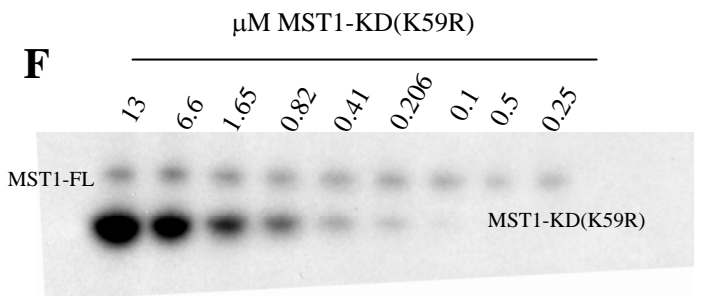
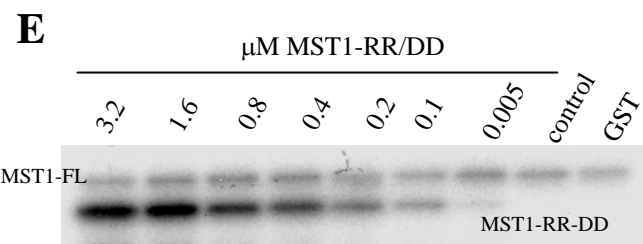
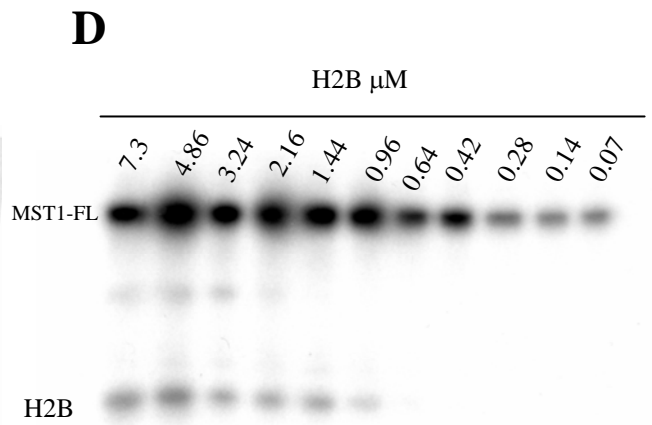
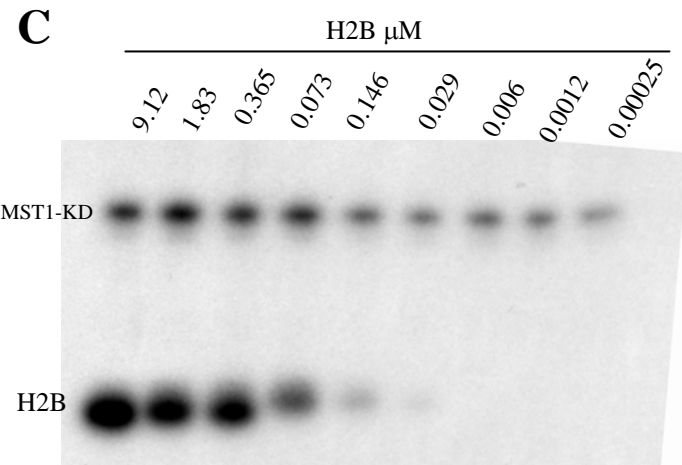
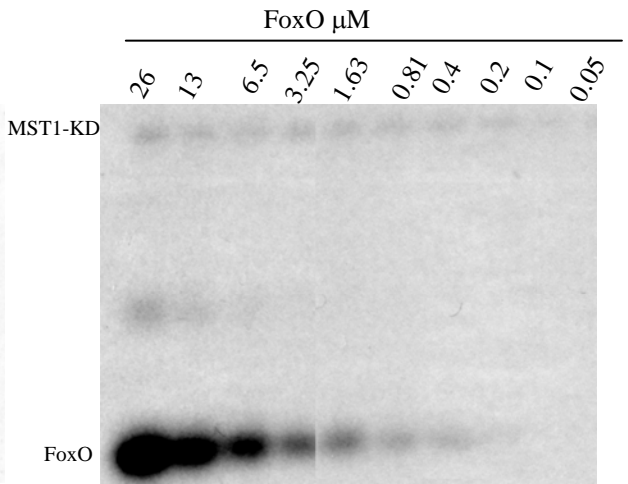
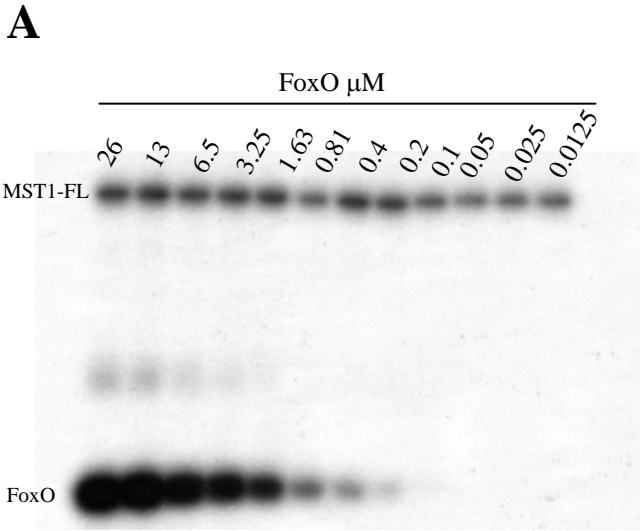
A) Phosphorylation of FoxO1 by the dimerization defective MST1 mutant encompassing residues 1-380 (MST-KD/RR) is shown. The gel shows the incorporation of the  $\gamma$ P32 label as a function of FoxO1 concentration.

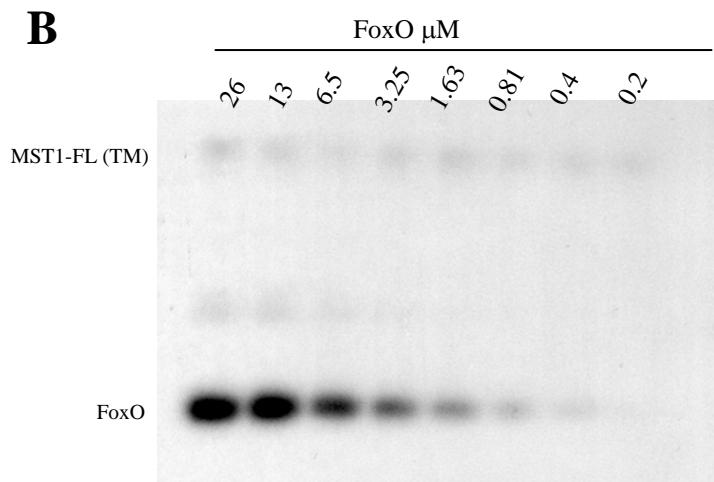
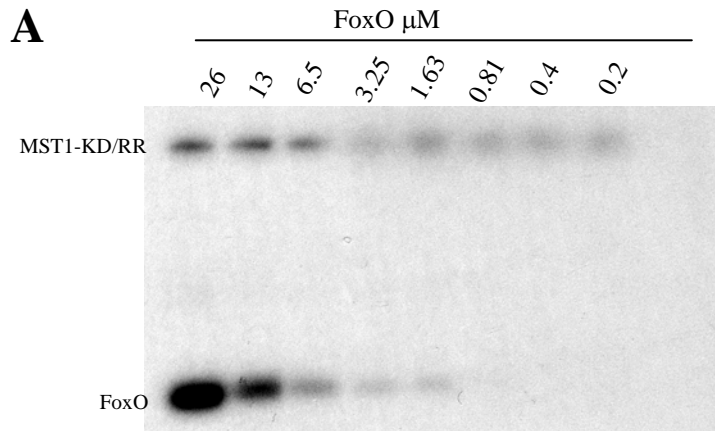
B) Autoradiograph gel depicting the activity of the MST1 phosphorylation defective triple mutant (MST1-TM ) towards FoxO1.

### **Figure S3 Phosphoactivation of activation loop threonine 183**

Western blot depicting the T183 phosphorylation status of the various MST1 constructs. The reaction was performed in duplicate. Equimolar amounts of enzyme was used for each reaction.

**Supplementary Figure 1**  
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**Supplementary Figure 3**

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