



**Figure S1.** Titration of IC<sub>50</sub> for PEP-1. The IC<sub>50</sub> of peptide inhibition is measured at a substrate concentration of 100 μM RBG (resorufin β-D-galactopyranoside) and β-Gal concentration of 150 μg/L, 25 °C. All tests included three replicates. Error bar: range of data.

The IC<sub>50</sub> of each inhibitor was determined by fitting the concentration vs. inhibition curve to the function 'Fit LogIC50' as defined in the program GraphPad Prism 7 using the fitting equation " $Y=Bottom+(Top-Bottom)/(1+10^{(X-LogIC50)})$ ". The "Bottom" term was constrained to 1, which represents the maximal inhibition of 100%. The "Top" term was constrained to 0, which represents the minimal inhibition of 0%.

The enzyme inhibition was also quantitatively characterized using the inhibition percentage that was calculated using the following equation:

$$\text{Inhibition Percentage} = (\text{Activity}_{\text{uninhibited}} - \text{Activity}_{\text{inhibited}}) / \text{Activity}_{\text{uninhibited}} \times 100\%$$