

Title: Supplementary Data 1.

Description: Analysis of Photoswitching. This table provides estimates of dynamic range, including error and sample sizes, for the activity of PTP-LOV2 chimeras on 4MUP, pNPP, and a phosphopeptide substrate.

Title: Supplementary Data 2.

Description: Analysis of kinetics. This table provides initial rates of pNPP hydrolysis, including error and sample sizes, used to construct Michaelis-Menten curves.

Title: Supplementary Data 3.

Description: Analysis of reversibility. This table provides initial rates of pNPP hydrolysis, including error and sample sizes, used to examine the reversibility of photomodulation.

Title: Supplementary Data 4.

Description: Circular dichroism spectroscopy. This table provides CD-based estimates of light-induced changes in α -helical content, including error and sample sizes, used to construct Figures 2c and 2g.

Title: Supplementary Data 5.

Description: Fluorescence spectroscopy. This table provides fluorescence-based measurements of tryptophan fluorescence, including error and sample sizes, used to construct Figure 2g.

Title: Supplementary Data 6.

Description: In vitro analysis of FRET-based biosensor. This table provides discrete measurements of donor/acceptor emission ratio, including error and sample sizes, used to construct Figures 4b and 4c.

Title: Supplementary Data 7.

Description: Whole-cell imaging studies. This table provides live-cell FRET measurements used to construct Figure 4c.

Title: Supplementary Data 8.

Description: Enzyme-linked immunosorbent assay (ELISA). This table provides ELISA-based measurements of insulin receptor phosphorylation.