

Chemical Tools for Elusive Protein Phosphorylations

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Despite the well-recognized biological importance of protein phosphorylation, non-conventional forms of phosphorylation on histidine and arginine residues have evaded our attention and scrutiny for a long time. This gap in our understanding stems from the inherent chemical instability of phosphohistidine (pHis) and phosphoarginine (pArg), making the investigation of these forms of phosphorylation notoriously challenging.¹

Here we present novel chemical tools to tackle these historically elusive protein modifications. In particular, we describe convenient activity assays to monitor the phosphorylation/dephosphorylation in real time. Our assays were successfully employed for the biochemical characterization and inhibitor discovery of the corresponding kinases and phosphatases, providing novel mechanistic insights into the enzymes. We also report our progress on the development of chemoproteomic probes for these enzymes.

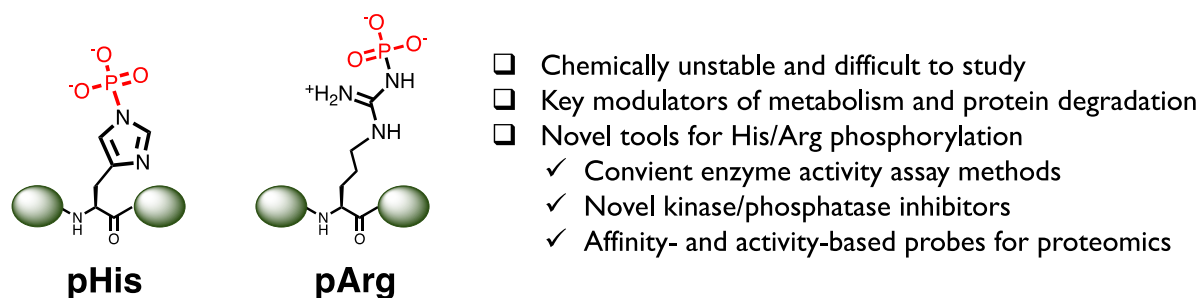


Figure 1. Your figure caption may be placed here. Delete this text box if not used.

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