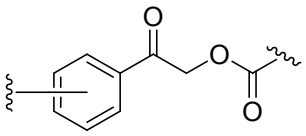
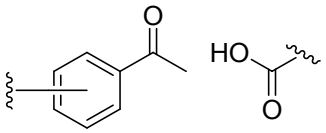
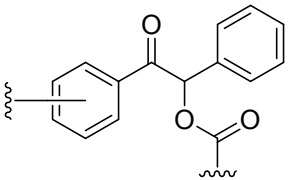
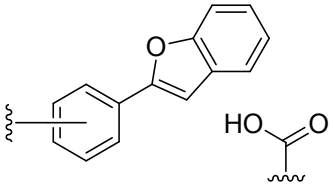
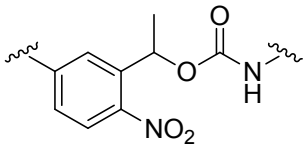
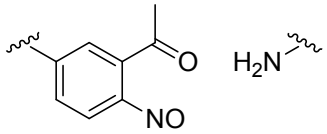
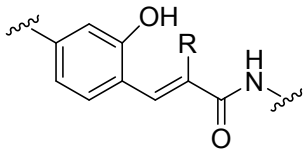
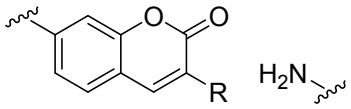
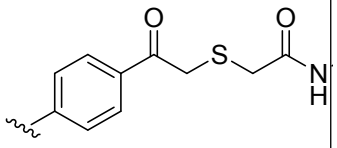
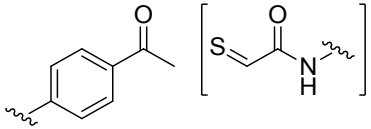
Electronic Supplementary Material (ESI) for Molecular Omics.

TABLE S2: Photocleavable linkers

Cleavable linker	Structure	Cleavage products	Cleavage Conditions	Advantages	Disadvantages
Phenacyl ester[1]			254 nm	Stable under variety of chemical conditions.[a] Also no additional reagents needed which might affect system under study	Short wavelengths potentially damaging to proteins and nucleic acids
Benzoin ester[2]			365 nm	Longer wavelengths not damaging to proteins.[b] Stable to visible light, stable to CuAAC conditions	But not orthogonal to PAL groups e.g. BP, diazirine[c]
O-nitrobenzyl carbamate[3, 4 5,6] (also amides, esters)			365 nm		Produces reactive nitrosobenzene derivative following cleavage

[a] True for all photocleavable linkers.

[b,c] True for all photocleavable linkers that require 365 nm hv for cleavage.

o-hydroxycinnamate[7]	 R = CH_2Cl_3, CD_2CD_3	 R = CH_2Cl_3, CD_2CD_3	365 nm	Coumarin fluorophore is produced upon cleavage = FL-tagged target Isotope-coded FL tag aids ID of labeled peptides	
α-thioacetophenone[8]			365 nm	Longer wavelengths not damaging to proteins/ nucleic acids	Produces thial, which may further react

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