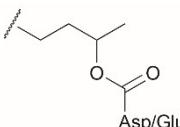
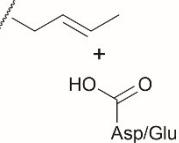
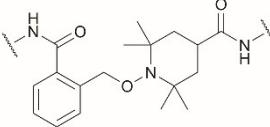
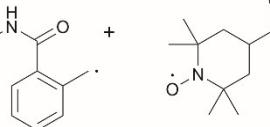
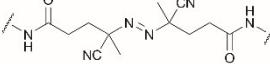
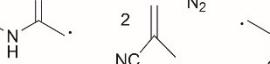
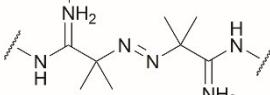
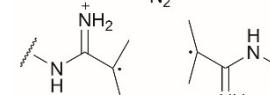
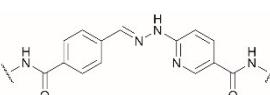
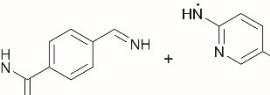
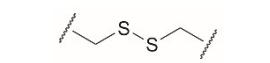
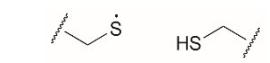
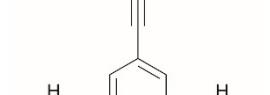
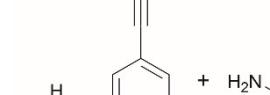
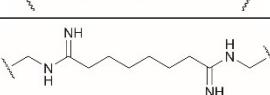
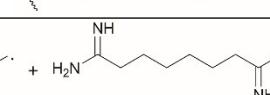


**TABLE S4: MS cleavable linkers**

Cleavable linker	Structure	Cleavage products	Cleavage Conditions	Advantages	Disadvantages
Di-succinimidyl sulfoxide <sup>1</sup>			CID	Commercial building block available	
Urea <sup>2</sup>			CID	Commercial building block available	
Quaternary ammonium <sup>3</sup>			CID		
Sulfonium <sup>4</sup>			CID		
Cyanuric acid derivative <sup>5,6</sup>			CID		
Asp-Pro <sup>7,8</sup>			CID	Easy to synthesise from amino acid building blocks	
Rink linker <sup>9,10</sup>			CID	Based on SPPS Rink linker; may also be chemically cleaved by TFA (application not yet reported in target ID-ing)	

Ester <sup>b</sup> of secondary alcohol <sup>11</sup>			CID		Not all diazirine is converted to a diazonium species, so this crosslinking phenomenon may vary in its efficiency
TEMPO-based <sup>12</sup>			CID <sup>a</sup>		
Azo <sup>13</sup>			CID <sup>a</sup>		
Azo-bis-imido <sup>14</sup>			CID/HCD <sup>a</sup>		
Bisaryl-hydrazone <sup>15</sup>			ETD	Can also be chemically cleaved (see Table S1)	
Disulfide <sup>16</sup>			ETD	Can also be chemically cleaved (see Table S1)	
Diformyl ethynyl-benzene <sup>17</sup>			ETD		
DEST <sup>c</sup> -derived <sup>18</sup>			ETD		

<sup>a</sup> This CID cleavage is also called FRIPS (for: free radical initiated peptide sequencing)

<sup>b</sup> This results from photoactivation of a diazirine, which partially rearranges to a diazonium ion, which then reacts with nucleophilic Asp or Glu side chains, forming an ester bond

<sup>c</sup> Resulting from amine crosslinking of diethyl-thiosubericthioimidate

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