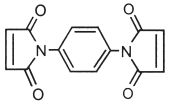
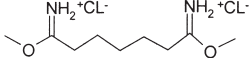
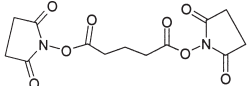
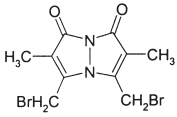
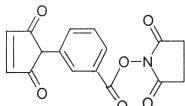
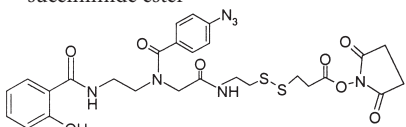
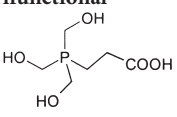
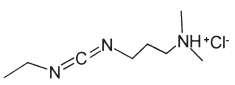


TABLE 1. Cross-linkers

Structure and Name	Abbreviation	Water-soluble	Reactive groups	Selectivity
Homobifunctional				
 <p>1. N,N'-p-phenylenebismaleimide</p>	p-PDM	no	maleimide	sulfhydryl
 <p>2. Dimethyl pimelidate•2HCl</p>	DMP	yes	imido ester	amine
 <p>3. Disuccinimidyl glutarate</p>	DSG	no	N-hydroxy succinimide/ maleimide	amine
 <p>4. 4,6-Dibromomethyl-3,7-dimethyl-1,5-diazabicyclo [3.3.0]octa-3,6-diene-2,8-dione</p>	bBBr (bromo-bimane)	moderately	alkyl halide	sulfhydryl
Heterobifunctional				
 <p>5. <i>m</i>-Maleimidobenzoyl-N-hydroxy-succinimide ester</p>	<i>m</i> -MBS	no	maleimide/N-hydroxy-succinimide ester	sulfhydryl/amine
 <p>6. Succinimidyl N-14-(2-hydroxybenzoyl)-N-11-(4-azido-benzoyl)-9-oxo-8,11,14-triaza-4,5-dithiatetradecanoate</p>	SHAD	no	aryl azide/N-hydroxy-succinimide ester	broad/amine
Trifunctional				
 <p>7. β-[Tris(hydroxymethyl)phosphino]propionic acid</p>	THPP	yes	hydroxymethyl phosphino	amine
Zero-length				
 <p>8. 1-Ethyl-3-[3-dimethylaminopropyl]carbodiimide hydrochloride</p>	EDC	yes	carbodiimide	carboxyl/amine