Singlet oxygen mediated mechanism
\[ ^3\text{RB} + \text{O}_2 \rightarrow \text{RB} + ^1\text{O}_2 \] (1)
\[ ^1\text{O}_2 + \text{histidine} \rightarrow \text{oxidized histidine} \] (2)
\[ \text{oxidized histidine} + \text{lysine} \rightarrow \text{protein-protein crosslink} \] (3)

Oxygen-independent, radical coupling mechanism
\[ ^3\text{RB} + \text{AA} \rightarrow \text{RB}^\cdot + \text{AA}^- \] (4)
\[ 2\text{AA}^- + 2\text{H}^+ \rightarrow 2\text{HAA}^- \rightarrow \text{protein-protein crosslink} \] (5)

Oxygen-requiring radical mechanism
\[ \text{AA}^- + \text{O}_2 \rightarrow \text{oxidized AA} \] (6)
\[ \text{oxidized AA} + \text{AA} \rightarrow \text{protein-protein crosslink} \] (7)

Figure S3. Mechanistic steps leading from photoactivation of Rose Bengal to photo-crosslinks between proteins.