Singlet oxygen mediated mechanism
\[ ^3RB + O_2 \rightarrow RB + ^1O_2 \]  \hspace{1cm} (1)
\[ ^1O_2 + \text{histidine} \rightarrow \text{oxidized histidine} \] \hspace{1cm} (2)
\[ \text{oxidized histidine} + \text{lysine} \rightarrow \text{protein-protein crosslink} \] \hspace{1cm} (3)

Oxygen-independent, radical coupling mechanism
\[ ^3RB + \text{AA} \rightarrow RB^+ + \text{AA}^- \] \hspace{1cm} (4)
\[ 2\text{AA}^- + 2H^+ \rightarrow 2\text{HAA}^- \rightarrow \text{protein-protein crosslink} \] \hspace{1cm} (5)

Oxygen-requiring radical mechanism
\[ \text{AA}^- + O_2 \rightarrow \text{oxidized AA} \] \hspace{1cm} (6)
\[ \text{oxidized AA} + \text{AA} \rightarrow \text{protein-protein crosslink} \] \hspace{1cm} (7)

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