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**Figure S9.** TLC analysis of the reactions betweenGlcN and DPPD analogues such as 1,3-dipyridin-2-ylpropane-1,3-dione, dibenzoylmethane, ethyl benzoylacetate or 1-benzoyl-3,3,3-trifluoroacetone. (**a**) DPPD analogues which were used for the labeling. (**b**) TLC of the labeling reactions analyzed at 254 nm. (**c**) TLC of the labeling reactions analyzed at 362 nm. 1 and 1’ correspond to 1,3-dipyridin-2-ylpropane-1,3-dione. 2 and 2’ correspond to the reaction between GlcN and 1,3-dipyridin-2-ylpropane-1,3-dione. 3 and 3’ correspond to dibenzoylmethane. 4 and 4’ correspond to the reaction between GlcN and dibenzoylmethane. 5 and 5’ correspond to ethyl benzoylacetate. 6 and 6’ correspond to the reaction between GlcN and ethyl benzoylacetate. 7 and 7’ correspond to 1-benzoyl-3,3,3-trifluoroacetone. 8 and 8’ correspond to the reaction between GlcN and 1-benzoyl-3,3,3-trifluoroacetone.

Procedure: To a reaction containing GlcN (100 nmol) in 5 μL of water and 5 μL of 0.16 M NaHCO3, 30 μL of a 0.1 M solution of DPPD analogues in methanol were added. The reaction was performed at 110 °C overnight.