Supplement for "Divergent Oriented Synthesis For the Design of Reagents for Protein Conjugation"

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## Synthesis of CYAL-5.5

$$\begin{array}{c} \text{CO}_2\text{H} \\ \text{CO}_2\text{H} \\ \text{CO}_3\text{S} \\ \text{PhHN} \\ \text{NHPh} \\ \\ \text{1} \\ \text{2} \\ \end{array} \begin{array}{c} \oplus \\ \text{O}_3\text{S} \\ \text{CyAL-5.5} \\ \end{array} \begin{array}{c} \text{CO}_2\text{H} \\ \\ \text{O}_3\text{S} \\ \text{CyAL-5.5} \\ \end{array}$$

Briefly, CyAL-5.5 is prepared as follows: Malonaldehyde intermediate 1 was synthesized by the Vilsmeier-Haack-Arnold aminoformylation of methyl 7,7-dimethoxyheptanoate followed by treatment with aniline during workup. Intermediate 1 was then allowed to react with two equivalents of 3-ethyl-1,1,2-trimethyl-1*H*-benzo[*e*]indolium-7-sulfonate (2) in a 5:5:1 mixture of acetic acid/acetic anhydride/triethylamine to generate CyAl-5.5, which was purified by reverse phase chromatography eluting with acetonitrile in water.