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SYNTHESIS OF PURINE-THIAZOLOPYRIMIDINE CONJUGATES

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Purine derivatives have been studied not only as biologically active compounds but also as scaffolds for OLED materials. Recently, purine based derivatives have shown promising results as TADF (thermally activated delayed fluorescence) materials [1].
In this study we have designed new purine-thiazolopyrimidine conjugates A and E containing phenylanthracene moiety, later to be studied as TADF materials [2,3]. Firstly, Negishi cross-coupling between thiazolopyrimide C and purine D and subsequent SNAr reaction with NaN3 will provide compound B. Then CuAAC reaction between B and phenylanthracenyl moiety containing alkyne will provide target derivative A. On the other hand, Stille cross-coupling between purine H and 9-bromo-10-phenylanthracene, and following Negishi cross-coupling with thiazolopyrimidine F will be used for the synthesis of conjugate E. The progress towards conjugates A and E will be discussed.

Scheme 1. Retrosynthetic analysis of target compounds A and E

Primary authors: KRIĶIS, Kārlis (Student); Mr ZIGFRĪDS, Kapilinskis (scientific assistant)

Presenter: KRIĶIS, Kārlis (Student)

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