



Univerzita Karlova v Praze, Přírodovědecká fakulta

Katedra organické a jaderné chemie
zve všechny zájemce na přednášku z cyklu

Quo Vadis Chemie

Furan Modified Amino Acids and Nucleosides:

A Toolbox for Crosslinking, Labeling and Secondary Structure Analysis of Biomacromolecules



kterou přednese

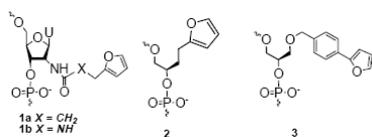
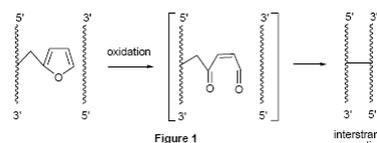
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dne 15.11. 2010 v 14:00 hod.
v posluchárně CH2, v budově chemických kateder PŘF UK
Hlavova 8, Praha 2

Abstrakt:

Recently, a new method for DNA cross-linking has been developed in our laboratory, which relies on the incorporation of a furan modified nucleoside building block into a DNA strand. This furan ring can be oxidized into a very reactive enal species, which reacts with the free amino functions of the complementary strand (Figure 1). The strategy is based on the known oxidative ring opening of furan under the influence of Cytochrome P450 and the reaction of the resulting cisbutene-1,4-dial with free amino and sulfhydryl functions of biomolecules.



A toolbox of furan-modified building blocks (**1**, **2**, **3**) have been developed and used for various crosslinking studies, in a DNA/DNA and DNA/2'-OMe RNA duplex and triplex context.

We have further applied the same strategy on peptides consisting of natural amino acids. On-bead oxidation and subsequent labeling with a fluorescent amine in the presence of sodium cyanoborohydride yields fluorescently labeled peptides.

