

## **Design and synthesis of fluorescently labeled 6-substituted purine derivatives as markers of cytokinin perception**

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Cytokinins and their synthetic derivatives play crucial role in the regulation of plant growth. Therefore, it is very important to understand and visualise the process of cytokinin perception to the cells. We selected isopentenyladenine and benzylaminopurine molecules as an easily obtainable and well substitutable model compounds and we accompanied the molecules with various fluorescent probes such as dansyl chloride, fluorescein (FC), rhodamine B, coumarine, 7-(diethylamino)coumarine-3-carboxylic acid (7-DEAC) and others attached on 2 or 6-carbon spacers at C2 or N9 atoms of the purine moiety. Selected representatives of novel fluorescently labeled molecules maintained cytokinin activity and some of them were able to trigger signaling pathway *via* cytokin-sensitive receptors AHK3 and CRE/AHK4 from *Arabidopsis thaliana* and/or *via* ZmHK1 and ZmHK3a from *Zea mays*. Although structural changes in several cytokinin derivatives led to the loss of the ability to initiate the signal transduction through the receptors studied, some derivatives were still able to interact with the receptor binding site and partially blocked binding of radioactive labelled competitor<sup>3</sup>HtZ.