Synthesis and Biological Activity of Lupane Triterpenoid-Triazole Conjugates

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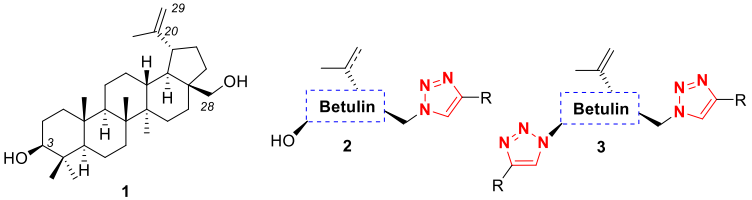
Betulin (**1**) is an abundant naturally occurring triterpene, most commonly found in birch bark. Betulin and its derivatives possess wide spectrum of biological activities such as anti-HIV, andiinflammatory and anticancer properties [1]. To improve the latter, structural modifications with new biological activity are being made [2].
The synthesis of triterpenoid-triazole monoconjugates (**2**) was initiated by C(28)-chemoselective primary alcohol oxidation. Obtained aldehyde was treated with hydroxylamine hydrochloride, followed by catalytic hydrogenation, that under certain conditions gave amines with or without reduced C(20)-C(29) double bond. Combination of TfN_3 and primary amine produced azide compound. The latter was employed in CuAAC to obtain desired monoconjugates.
To obtain betulin-triazole diconjugates (**3**), betulin was oxidized under Swern conditions to yield corresponding ketoaldehyde. The latter was treated with hydroxylamine hydrochloride followed by reductive amination with $NaCNBH_3$ to obtain corresponding diamine. From the obtained diamine respective diazide and the following bistriazole was easily created similarly to monoconjugate synthesis.
Novel triterpene-1,2,3-triazole conjugates were tested on rare cancer cell lines and observed cytotoxicity will be reported.



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