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## **AZIDE-TETRAZOLE EQUILIBRIUM IN PYRIDO[2,3-d]PYRIMIDINES**

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Azido groups in nitrogen heterocycles, if adjacent to annular nitrogen, can spontaneously cyclize to fused tetrazole or at least persist in azide-tetrazole equilibrium [1]. Azide-tetrazole valance tautomerism is considered as a reversible intramolecular 1,5-dipolar cycloaddition with azide tautomer being thermodynamically more stable. However, azide formation is endothermic process, thus azide tautomer is favored at higher temperatures and tetrazole in lower temperatures. The main tautomeric form and equilibrium constant essentially depends on substituents, temperature and solvent polarity. Thus, one can steer azide-tetrazole equilibrium with careful choice of reaction conditions.

While tetrazole tautomer as a fused cycle is unreactive, the open chain azido tautomer can be functionalized as a classical azide. This concept can be used for masking azido functional group [2] and regioselectivity induction in compounds with more than one tautomeric azide [3].

The present study discusses regioselectivity of azido group functionalization in 2,4-diazidopyrido[2,3-d]pyrimidine, reactivity of substituted tetrazolo[1,5-a]pyrido[3,2-e]pyrimidine and equilibrium constants thereof.

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