Synthesis of Conformationally Restricted Glycoamino Acids using Fluorinating Agents

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R = H, OH

A route for the preparation of five- and six-membered ring α/β- and α/γ-glycoamino acids (GAAs) starting from D-Glucose is described

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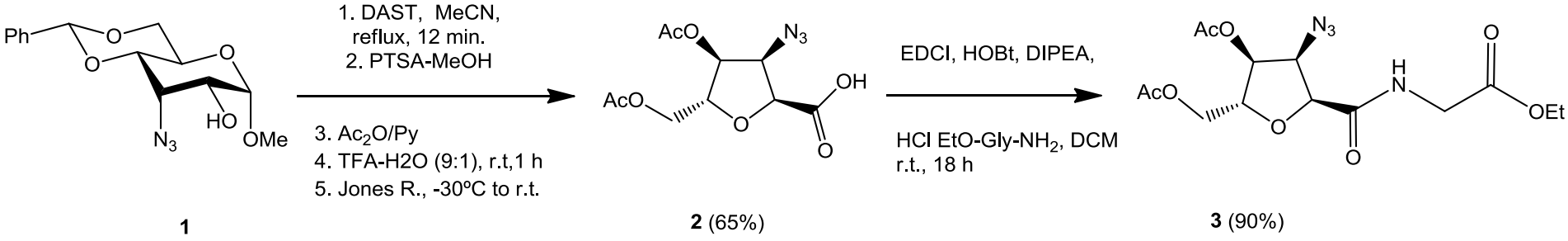
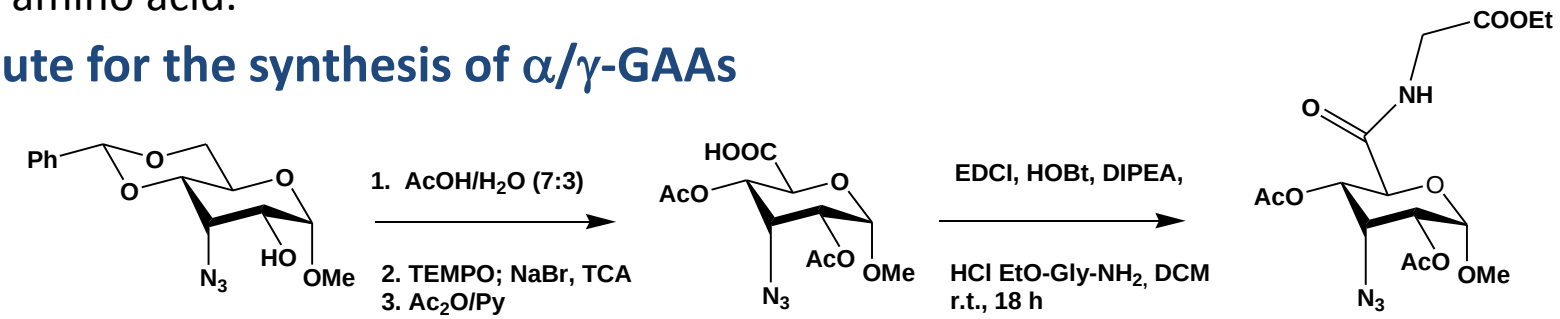
1. Route for the synthesis of α/β-GAAs



1 **2** (65%) **3** (90%)

The α/β-glycoamino acids (e.g., **3**) were synthesized using a *DAST*-promoted ring contraction as a key step followed by hydrolysis, acetylation, oxidation and attachment of the α-amino acid.[1]

2. Route for the synthesis of α/γ-GAAs



1 **4** (87%) **5** (67%)

The α/γ-glycoamino acids (e.g., **5**) were synthesized by cleavage of the benzylidene protecting group as the first step, accompanied with subsequent oxidation, acetylation and attachment of the α-amino acid.[1]

[1] All new compounds were characterized by their IR, ^{1}H-NMR (500 MHz), ^{13}C-NMR (125.7 MHz), and HRMS spectral data.