2002 carbohydrates

carbohydrates

U 0500 03 - 204 Synthetic Explorations Towards 3-Deoxy-3-fluoro Derivatives of D-Perosamine. — The approach towards substances related to 3-deoxy-3-fluoro-D-perosamine involves fluorination with inversion at C-3 [(III) \rightarrow (IV)] as well as inversion of configuration at C-2 [(VII) \rightarrow (VIII)] via a nucleophilic S_N2 displacement reaction. Additionally, the 2-O-methyl analogue of (VIII), mannopyranoside (XIII), is prepared. The latter compounds are converted into the 3-fluoro analogues [(XI) and (XVI)] of the terminal determinants of the O-PS of Vibrio cholerae 0:1, serotype Inaba and Ogawa, respectively. — (POIROT, EMMANUEL; CHANG, ALEX H. C.; HORTON, DEREK; KOVAC, PAVOL; Carbohydr. Res. 334 (2001) 3, 195-205; Natl. Inst. Diab. Dig. Kidney Dis., NIH, Bethesda, MD 20892, USA; EN)

$$(+) - V^* \xrightarrow{Tf_2O \ (VI)} P_{y, \ CH_2Cl_2, \ 0^{\circ}C} \blacktriangleright N_3 \xrightarrow{M_{\bullet}} N_3 \xrightarrow{Me} \xrightarrow{NaNO_2} N_3 \xrightarrow{M_{\bullet}} N_3 \xrightarrow{Me} N_$$

$$(+)-VIII* \xrightarrow{\text{Pd-C }(\circ \text{at.})} \text{H}_2 \\ \underset{\text{EtOH}}{\text{H}_2} \text{H}_2 \\ \underset{\text{F } \text{OH}}{\text{IX*}} \text{ 93\%} \xrightarrow{\text{2 equiv.}} \overset{\text{HO}}{\underset{\text{O}}{\text{O}}} \overset{\text{O}}{\underset{\text{((s)-x)}}{\text{((s)-x)}}} \text{HO} \\ \underset{\text{OH}}{\overset{\text{Me}}{\underset{\text{OH}}{\text{OH}}}} \overset{\text{Me}}{\underset{\text{OH}}{\text{OH}}} \overset{\text{Me}}{\underset{\text{OH}}} \overset{\text{Me}}{\underset{\text{OH}}{\text{OH}}} \overset{\text{Me}}{\underset{\text{OH}}} \overset{\text{Me}}{\underset{\text{$$

$$(+)-\text{VIII*} \xrightarrow{\text{MeI (XII)}} \text{NoH, DMF} \xrightarrow{\text{N}_3 \text{III}} \text{N}_3 \text{III} \xrightarrow{\text{Me}} \frac{\text{Me}}{\text{EtOH}} \xrightarrow{\text{EtOH}} \text{H}_2 \text{N}_2 \text{N}_3 \text{III} \xrightarrow{\text{Me}} \frac{\text{Me}}{\text{N}_2 \text{N}_3 \text{III}} \xrightarrow{\text{Me}} \frac{\text{Me}}{\text{EtOH}} \xrightarrow{\text{Me}} \text{N}_2 \text{N}_3 \text{III} \xrightarrow{\text{N}_2 \text{N}_3 \text{III}} \xrightarrow{\text{N}_3 \text{III}} \text{N}_3 \text{N}$$

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