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In a Glycosylation Reaction How Does a Hydroxylic Nucleophile Find the Activated Anomeric Carbon?

Dennis M. Whitfield

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## **ACCEPTED MANUSCRIPT**

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National Research Council, Human Health Therapeutics, 100 Sussex Drive, Ottawa, ON CANADA K1A 0R6

Orientation by the entiperiplenar lone pair of N leading to this apparent TS PO $O_{T}$ $CF_{a}$ $CF_{a}$ $O_{P}$ $O_{P}$ $N-C-1-O_{n} = 2.409$ $N-C-1-O_{n} = 151.5$ C-1-N = 2.152	Orientation by the antiperiplanar lone pair of O leading to this apparent TS $PO$ $O_{\pi}$ $CF_{s}$ $PO$ $O_{\pi}$ $C-1-O_{\pi} = 2.100$ Alkyl Oxonium lon $O_{\mu}$ $C-1-O_{\pi} = 162.4$ $O_{\mu}$ $C-1-O_{\pi} = 162.4$
CH <sub>3</sub> Orientation by the entinerintener lone	Orientation by the antinazialaner land

Highlights:

1) Further examples of the lone pairs of  $\alpha$ -face nucleophiles acting as antiperiplanar lone pairs

2) A possible example of  $\beta$ -face nucleophiles using orbital interactions

3) Computational evidence for hydroxylic nucleophile acetonitrile Hydrogen bonding activating glycosyl acceptors

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E-mail: dennis.whitfield@nrc-cnrc.gc.ca Ph 613-993-5265 Fax 613-952-9092

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