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Swenson/ARCS Award

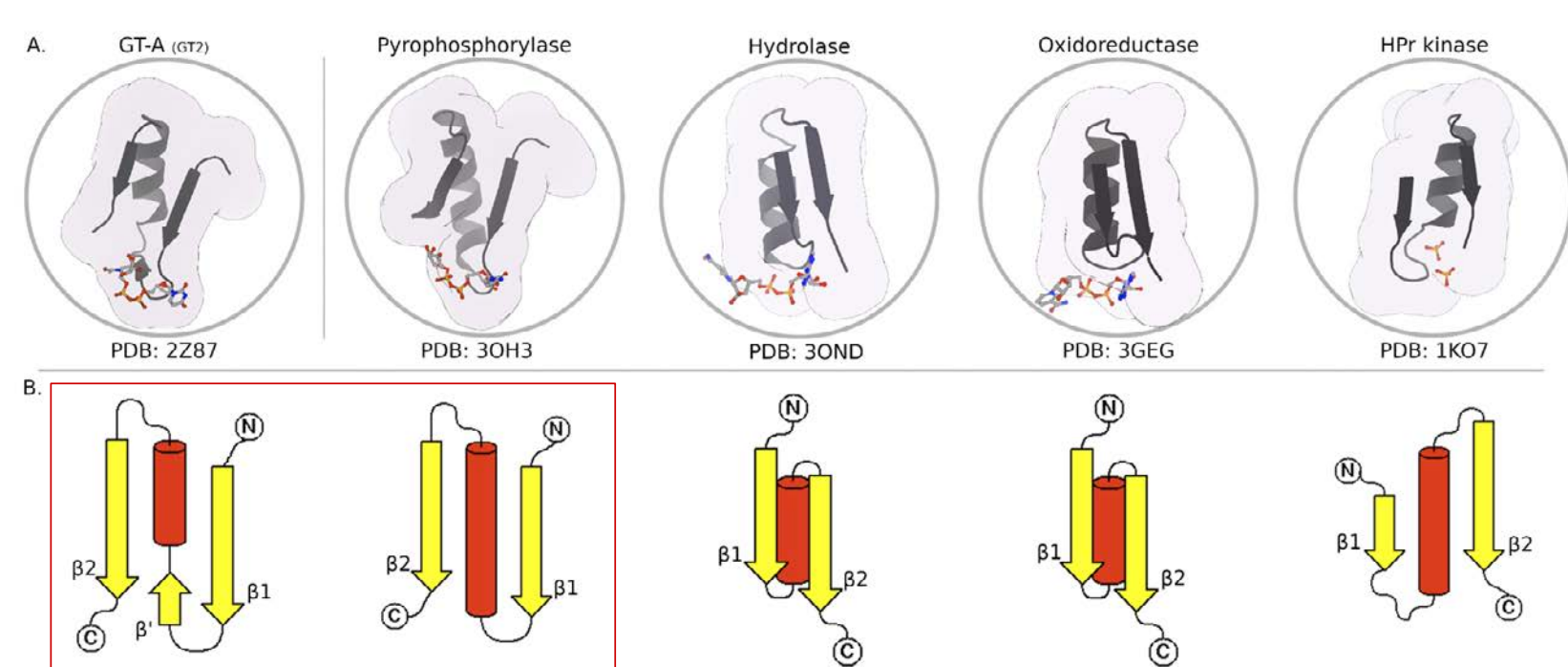


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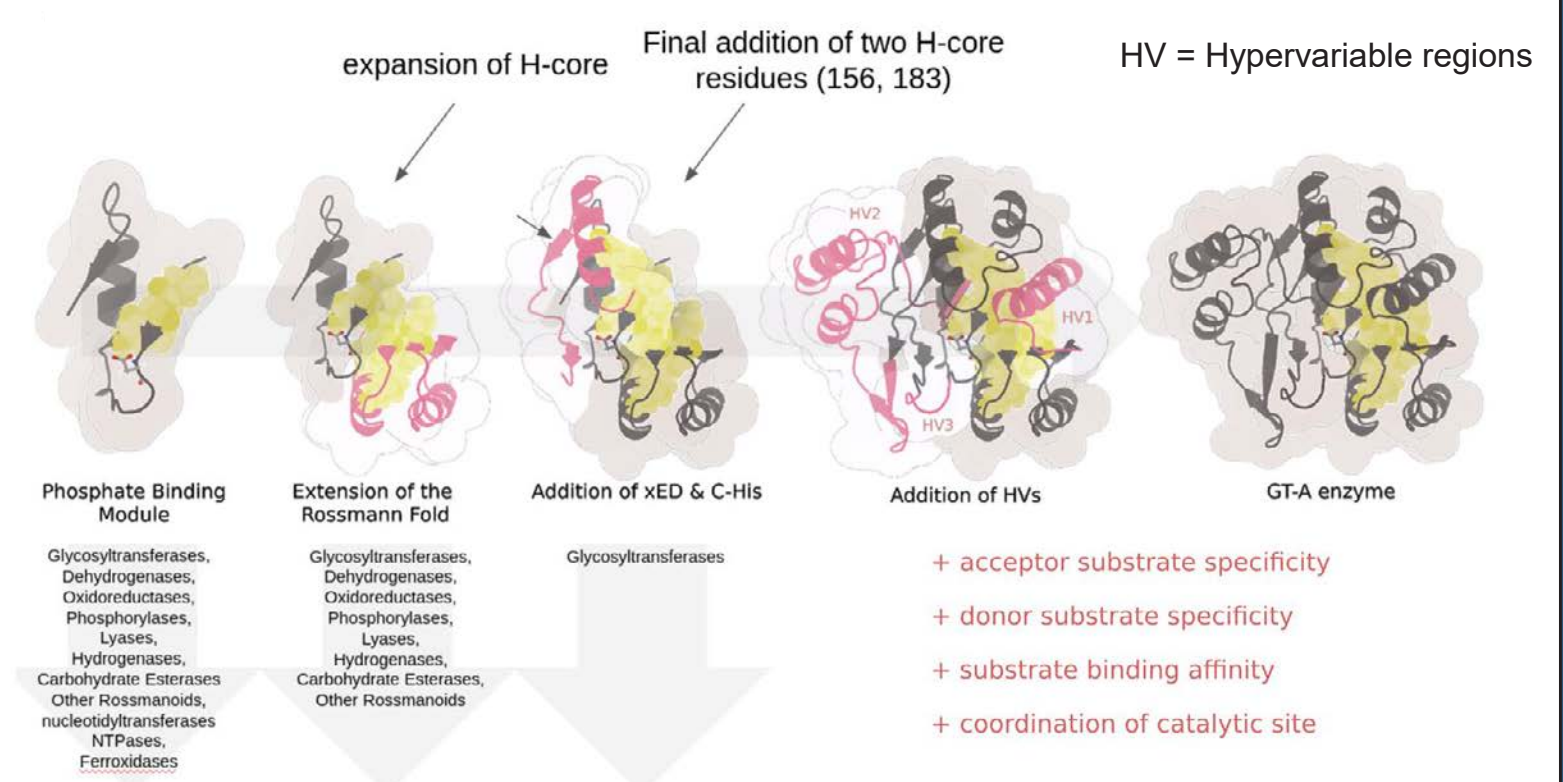
Modularity of the hydrophobic core and evolution of functional diversity in fold A glycosyltransferases

Glycosyltransferases (GTs) are an extraordinarily diverse class of sugar-transferring enzymes, involved in nearly all aspects of cellular function. We analyze sequence, structure-function, and dynamics to uncover the molecular origins of Glycosyltransferase evolution, guiding the engineering of new GTs.

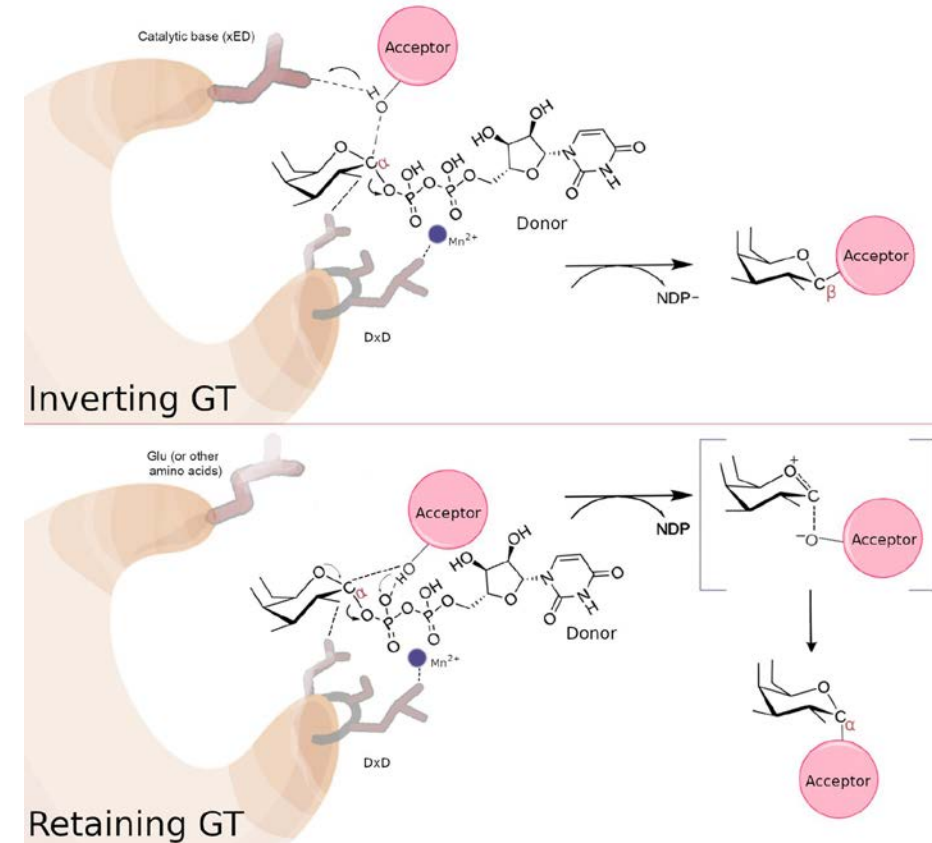
An ancestral fragment shared amongst diverse enzymes



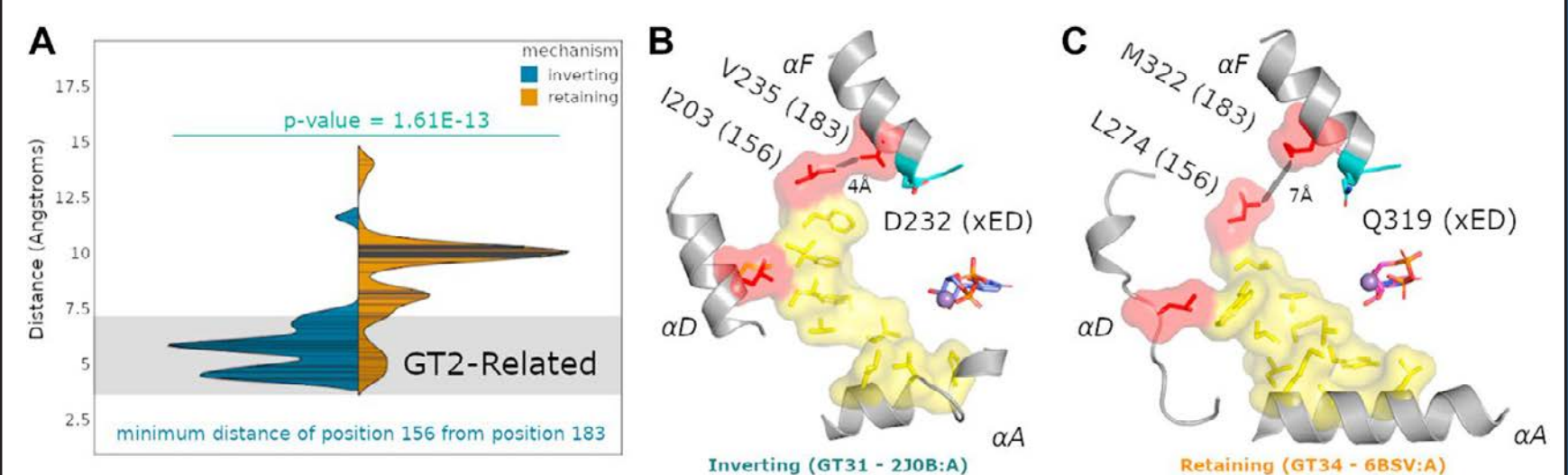
Small variations contribute to large functions over evolutionary time



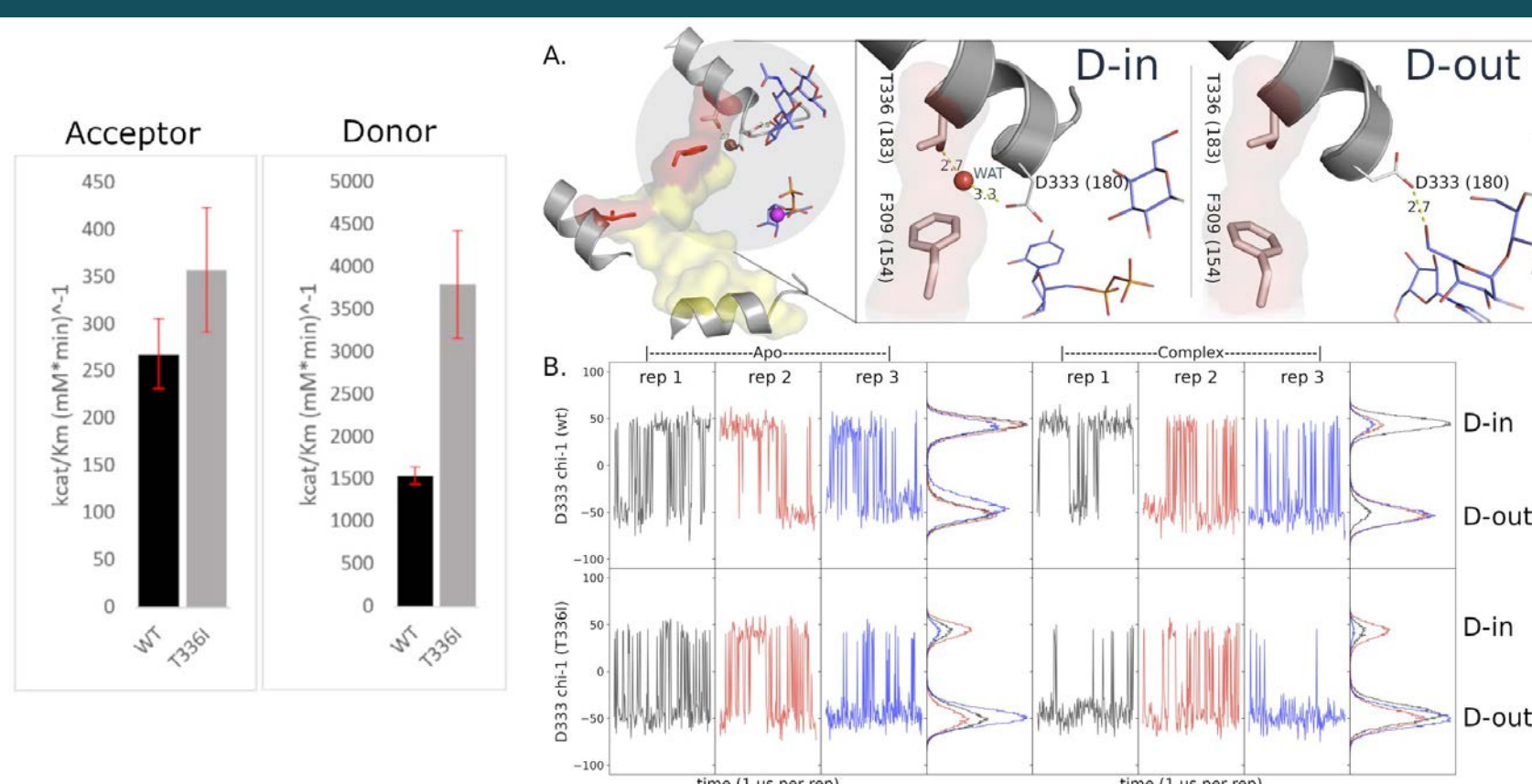
A cartoon depiction of glycosyltransferase function



Structural conservation and variability in the hydrophobic core



Does mutating the core correlate with changes in catalytic activity?



Acknowledgements

Kannan Lab

Nolan Kempinen
Maya Salcedo
Safal Shrestha
Zhongliang Zhou
Nathan Gravel
Brady O'Boyle
Claire Bunn
Priyanka Parikh
Grace Watterson
Wayland Yeung, PhD
George Benzenudis, PhD
Samiksha Kattiyar, PhD

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Venkat, A., Tehrani, D., Taujale, R., Yeung, W., Gravel, N., Moremen, K.W. and Kannan, N., 2022. Modularity of the hydrophobic core and evolution of functional diversity in fold A glycosyltransferases. *Journal of Biological Chemistry*, 298(8).