Propositions associated with the PhD thesis

Mutational and biochemical analysis
***Lactobacillus reuteri* glucansucrase enzymes**

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1. Detailed structural analysis of the products synthesized by glucansucrases from sucrose is key to understand the enzyme mechanism. (*This thesis*)

2. The alternating (α1→6) and (α1→4) linkages in the products synthesized from sucrose by GTFA of *Lactobacillus reuteri* 121 reflect the alternating binding of acceptor substrates in two different ways. (*Chapter 2*)

3. The structural basis for polysaccharide synthesis by GTF180-ΔN lies in both domain V and acceptor substrate binding subsites, representing remote and close binding sites for the growing polysaccharide chains. (*Chapter 4*)

4. A single point mutation (L940W) in GTF180-ΔN causes a significant change in product specificity. (*Chapter 5*)

5. Do not be disappointed with the first-sight results, their more detailed analysis may yield a surprise. Although the ratios of (α1→6) and (α1→3) linkages in the α-glucan products of some GTF180-ΔN mutant enzymes showed no significant changes compared to wild-type, however, their branching degrees displayed significant differences. (*Chapter 6 and 7*)

6. Although enzyme engineering has proven to be an effective tool in creating novel enzymes, nature still represents an irreplaceable source for novel enzyme discovery.

7. "Two heads are always better than one (三人行必有我师)"--The Analects of Confucius. Learning from colleagues is one of the best ways to enrich our knowledge.

8. "Taking something for granted" is the most dangerous mistake that one can make in scientific research. In this way one may also miss novel findings easily.

9. Making good choices at critical points in your life may avoid a large amount of unnecessary hard-work.