Crystallization of two alpha-glucosidases found in ***Bacteroides thetaiotaomicron***

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Bacteroides thetaiotaomicron is a dominant member of the colon microbiota that has been used as a model organism of the symbiotic host-organism relationship and the digestive breakdown potential of digested plants. The primary responsibility of *B. thetaiotaomicron* is the hydrolysis of digested polysaccharides. Two enzymes that are crucial in this process are BT_0339 and BT_3299. BT_0339 and BT_3299 are alpha-glucosidases that belong to the glycoside hydrolase family 31 (GH31). GH31 is a large group of enzymes that hydrolyze the glycosidic bond between two or more carbohydrates or a carbohydrate and a non-carbohydrate moiety. GH31 is one of two major enzyme families (the other being GH13) that contain alpha-glucosidases. Many different enzymes originating from *B. thetaiotaomicron* have been historically crystallized. The focus of this project is to study the crystalline structures of BT_0339 and BT_3299 to gain insight regarding enzyme-substrate interactions. Preliminary crystallization conditions have been determined and are currently being manipulated to permit analysis of the enzyme-to-substrate interactions.

References

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