Galactofuranose-related enzymes: challenges and hopes

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Specific targeting of viral and bacterial infections is of major importance for early diagnosis of many diseases. Galactofuranose (Gal\(^\beta\)) is absent in humans but is found as glycoconjugate moiety in a large number of human pathogens (Aspergillus, Leishmania, Trypanosoma, Mycobacterium) thus offering possibilities to target this carbohydrate in biotechnological applications using enzymes involved in its metabolism (UDP-galactopyranose mutase (UGM), Galactofuranosyl transferase (Gal\(^\beta\)T), Galactofuranosidase (Gal\(^\beta\)-ase)).

Recently, the first and only Gal\(^\beta\)-specific enzyme from Streptomyces spp. and gene encoding it has been reported. Our recent findings related to these 3 classes of CAZymes will be presented as well as innovative applications in chemistry and therapeutic fields.