

Carbohydrate Active Enzymes from Gut Microbes and Their Activity on Dietary and Host Glycans

Guest Editors:



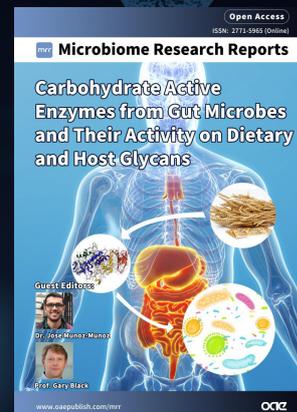
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Special Issue Introduction:

Human gut microbiota encoded many genes for carbohydrate metabolism. In fact, we rely on those microorganisms to fully metabolize dietary and host glycans because we lack the enzymes required to degrade those glycans. In return, the bacteria ecosystem obtains the carbon source needed for its growth. Because of the diverse range and type of polysaccharides in the human diet and hosts, they represent an excellent source to find new activities and expand our knowledge of these enzymes with potential biotechnological applications. Depending on the activity, carbohydrate-active enzymes or CAZymes are classified into glycosyl transferases (GT) for the synthesis of oligo and polysaccharides, glycoside hydrolases (GH) for the breakdown of glycans with the help of water, polysaccharide lyases (PL) if this degradation is in absence of water, carbohydrate esterases (CE), if the linkage broken is an ester group and auxiliary activities (AA) which are enzymes helping others to act. These CAZymes are classified into different families according to the aminoacidic homology, catalytic fold and mechanism in the CAZY database. So far, according to the enzymatic activity, this database has been classified more than 170 GHs, 100 GTs, 40 PLs, 20 CEs and 17 AAs. However, the field is rapidly expanding with numerous new families discovered every year.

The aim of this special issue is to highlight innovative and emerging new enzymes with novel mechanisms from gut microbes that act on dietary or host glycans as substrates. In addition, we would like to discuss novel families and activities within existing ones that recently has been established in the field.

We welcome original or review manuscripts, perspectives, opinions, and commentaries on different aspects of this special issue, including but not limited to:

Innovative approaches to discover and study CAZymes:

- OMICs to discover new enzymes/activities;
- Emergent CAZymes families;
- Characterization of new and existing CAZymes;
- Structural Biology of CAZymes;
- Enzymatic synergy for complex glycan degradation.

Innovative approaches to engineer/improve CAZymes:

- Protein engineering of CAZymes;
- Directed evolution;
- Catalytic mechanism.

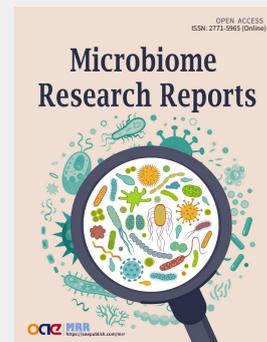
Submission Deadline: 31 Dec 2022

Benefits to Authors:

- The APCs (\$600) will be WAIVED;
- Enjoy faster publication than regular submissions;
- Authors will be invited as Guest Speakers to our journal webinars. The webinar will be held via Zoom and it will also be broadcast live on Youtube and the Chinese WeChat Official Account, Video Account, Bilibili;
- A special interview will be provided to authors and will be promoted on the journal homepage and all media promotion platforms of both via the journal and publisher.

Journal Introduction:

Microbiome Research Reports (MRR) is an international peer-reviewed, open access journal. The overall aim of *MRR* is to publish high quality researches from scientists with a common interest in microbiome/microbiota research in all its multidisciplinary aspects. The journal is founded by OAE Publishing Inc., under the guidance of our Editor-in-Chief Professor Marco Ventura (University of Parma, Italy). *MRR* was officially launched on July 26 2021. Looking forward to your attention and cooperation! Welcome to contact the editorial office for details, editorialoffice@mrrjournal.net.



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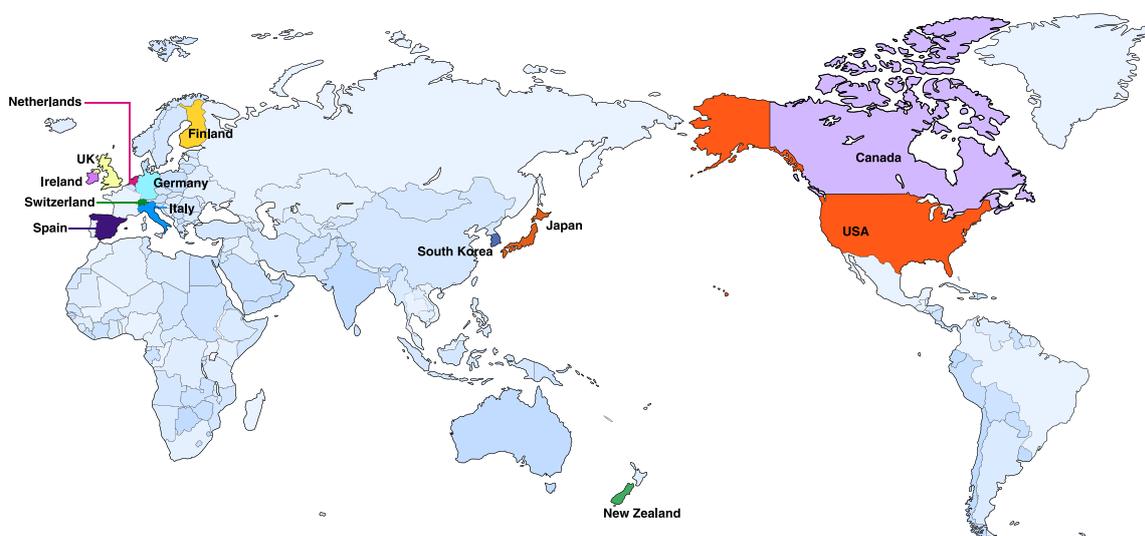
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