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Biotechnology of Lactic Acid Bacteria *Life After Genomics*

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Lactic acid bacteria include a homogeneous group of low-GC gram-positive bacteria that efficiently convert sugars into lactic and other acids. Many of these are used as starter cultures for industrial food fermentations but their use as adjunct starters or probiotics is on the rise. While more than 25 genomes of lactic acid bacteria are available, their functional analysis is presently a limiting factor. In addition, there is considerable interest in developing genome-based metabolic models to predict their functionality. The use of high throughput screening at the level of single cells and strains, as well as mixed strain cultures are in rapid development to increase the biodiversity beyond what is presently used in industrial fermentations. Moreover, NGT sequencing technologies not only have dramatically accelerated the expansion of genomic information, but have also allowed for cost-effective strain-specific detection of genomic adaptations in derivatives with improved industrial characteristics. Finally, novel applications are evolving along with therapeutic delivery systems and hosts for white biotechnology. This special issue aims to address these new developments within the biotechnology of lactic acid bacteria in their post-genomics life, including:

- Adaptive evolution
- Functional and comparative genomics
- Single and mixed strain systems biology
- Screening for improved fermentation and starter strains
- Pangenome analysis
- Probiotic gene discovery
- Food, feed, non-food, health and pharma applications

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