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# Bacillus subtilis chassis strains suitable for screens or production.

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## Abstract

*Bacillus subtilis* is the gram positive model for which we have many genetic tools, a wealth of transcriptomic and post-transcriptomic data, is recognized as GRAS and is capable of secreting large amount of products. These properties support the development of *B. subtilis* as a good platform for activity screens or production.

We have developed tools to make unmarked deletions and insertions in the *B. subtilis* chromosome which are useful in modifying strains in order to remove or introduce specific functions and thereby construct chassis strains adapted to specific purposes.

In this study, we present preliminary data concerning a fit for purpose *B. subtilis* chassis strain conceived and constructed initially as a secondary screen suitable for the screening of metagenomic DNA fragments encoding carbohydrate active enzymes (CAzymes). The unexpectedly strong expression of CAzymes in this host suggests it has considerable potential for the heterologous expression and secretion of potentially commercially exploitable enzymatic activities. Furthermore, this study highlights the potential of exploiting various metagenomes as sources of engineerable metabolic parts and perhaps entire pathways, in support of synthetic biology.

**Keywords:** genome engineering, tools

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