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Author	Gabriel Antonio Ascue Avalos	
Title (English)	Analysis of the response of <i>Lactococcus lactis</i> towards sub-lethal alcohol concentration	
Title (Swedish)		
Abstract	<p>In this study, I analyzed the <i>Lactococcus lactis</i> subspecies <i>cremoris</i> MG1363 stress response at sub-lethal alcohol levels during exponential growth phase at transcriptomics, proteomics, metabolomics levels. Ethanol, 1-butanol, 1-hexanol were the selected alcohols. Manganese-transporter- and arginine catabolic pathway genes were up-regulated by all alcohols suggesting they evoked oxidative and acidic stress. ATP manganese transporter genes, histidine- and galactose genes were also up-regulated. Purine- and pyrimidine synthesis genes were down-regulated. HPLC analysis displayed decreased biomass yield and glycolytic flux, suggesting increased glycolytic energy production and slowed down overall enzymatic rate. Proteomics analysis displayed differential expressed proteins associated with heat and oxidative stress.</p>	
Keywords	Lactococcus lactis, alcohol stress, oxidative stress, acidic stress, exponential growth, manganese transporter, arginine catabolism, purine genes, pyrimidine genes, biomass yield, flux.	
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