

Article

Isolation of a new *Acetobacter pasteurianus* strain from spontaneous wine fermentations and evaluation of its bacterial cellulose production capacity on natural agrifood sidestreams

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Supplementary material

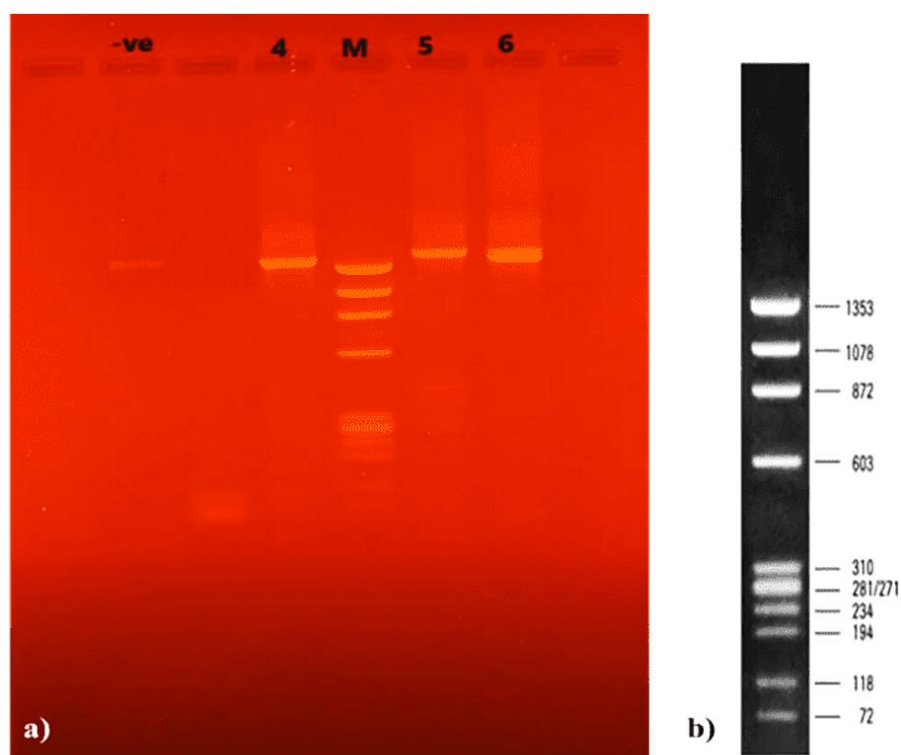


Figure S1. Electrophoresis results: a) New strain (*A. pasteurianus* ABBA). b) Base pair range of the DNA molecular marker (M). -ve: negative sample (IT and NL primers). 4,5,6: New strain sample with the 16Sd-16Sr primers, respectively.

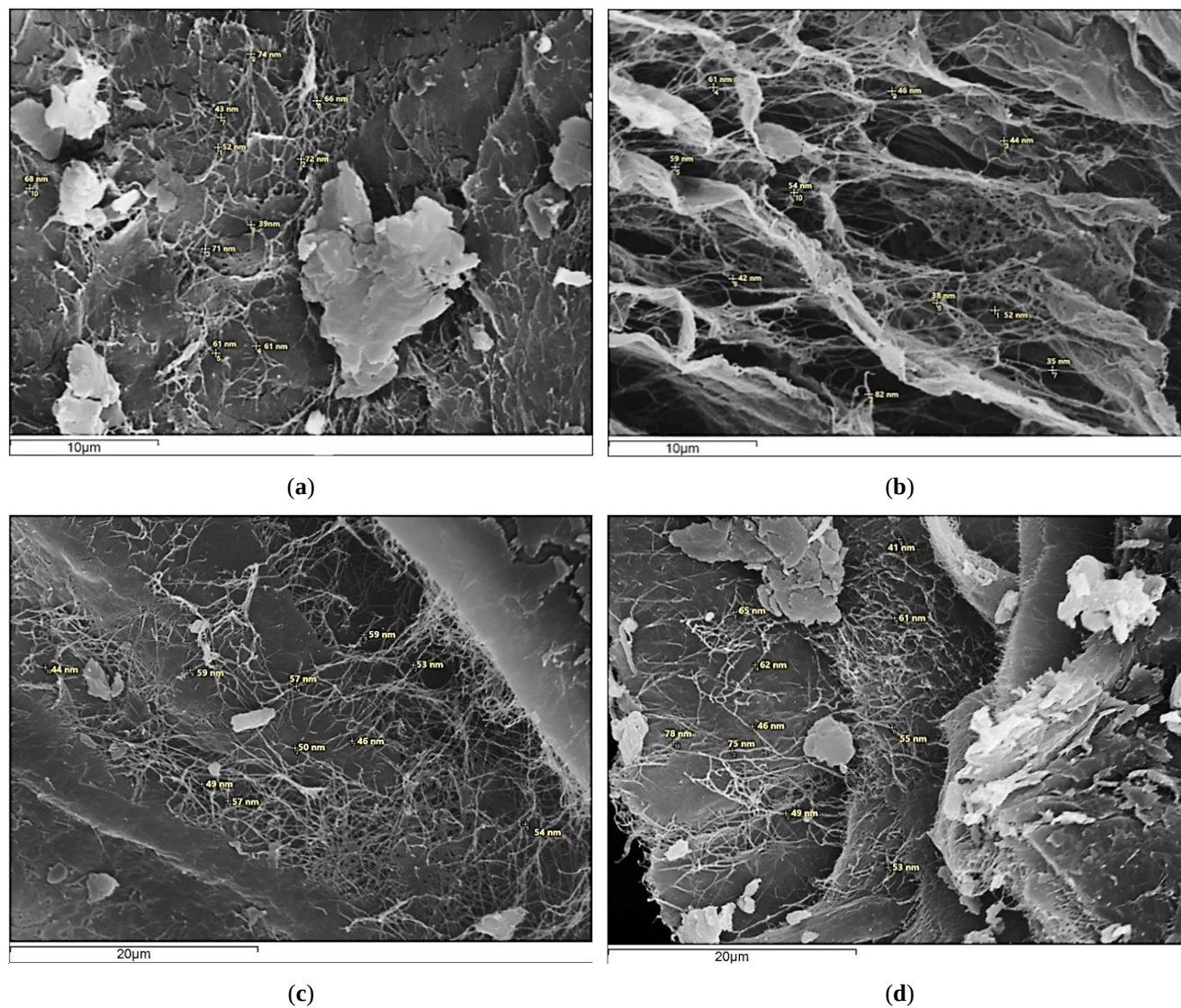


Figure S2. SEM images of dried BC films by *A. pasteurianus* ABBA produced in HS medium, (a) OD ($\times 3000$), and (b) FD ($\times 3000$), and in a mixture of OJ-SRE-GTE, (c) OD ($\times 2500$) and (d) FD ($\times 2500$).

Table S1. Independent variables, their coded and actual values, for the RSM/CCD optimization of BC production, under static conditions, in OJ.

Independent variable	Symbol	Coded values		
		-1	0	1
SRE	%v/v	X ₁	0.00	10.00
GTE	%v/v	X ₂	0.00	30.00

SRE: Substandard raisins extract. GTE: Green tea extract. OJ: Orange juice. RSM/CCD: Response Surface Methodology/Central Composite Design.

Table S2. Results of sequencing with the Sanger method.

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GCGGACSACKCTAGTCGGCTGCGTCTTGMGGTTCGCTMCCGRCTTARGGTSWACCAACTCCCATGGTGTGACGGGCGGT
GTGTACAAGGCCCGGAACGTATTACCGCGGCATGCTGATCCSCGATTACTARCGATTCCACCTTCMTGCACTCSAATT
GCARASTGMAATCCSAACTGARACRGCTTTTTRAGATAAKCATGGTGTGCWCCACCTATCTTCCCACTGTCACCGCCMTTG
TAKCACGTGTGTAKCCASGAGATAARGGGCATGAGGACATGACATCWTCACCTTCCTCCGGCTGTGCWCCGGSRSST
CTCTCWASAGAGYCCMCMCCWMMTGATGGCAACTAAWRATARGGTTGCGCTCGTTGCGGGACTTAACCCAACATCTCA
CGACACGAGCTGACGACARCCATGCASCACCTGTGTYMRAGGTCCCTTGCGGAAAATMWACATCTCTGCATGCGSCCTCT
ACGTTCAAACCCGGGWAAGGTTTTGCCGKATGYTTCAAATTAACCCAWGGCCCCACCKTTGGGGGGGGCCCCSYMAAT
TCCTTTTAWTTTTMAACCTTGGGGCKWAWCCCCAGGGGGTGGGGTTAAGCGTTTCTGASAACTGAAAGGARKAAACMC
CCAACATCTYAGCAYTCATCGTTTACGGYRTGGACTACCAGGTATCTAATCCTGTTTGCTMCCCATACTTTTCGMGCCTCA
GCGTCAGTWAYGAGACCAGAYWGCGCCTTCGCCACTGGTGTCTTCCAATATCTACGMATTTACCKCTACACTKGGAG
TTCCACWGYCTCTTCASMCTCTAGTCTGCAMGTWTCAGATGCACTCCTMGGTTTRAGCCGRGGATTTACATCWGACTGTA
CAAACGCTRMGCKCCCTTTACGCCAGTCAATCGAGCACGCTTGCCCCTACGTATACGCGGCTGCTGGCACGWAGTAGCGK
GCTTCTTYKRYGRTACCGTCATCATCCKKMCAGYGAACGTGCATACGATCTGATACCTCCTMCTCTACGACCTGAYTSAT
CATGCTGGCGCATGTSCATATCCAMTGCKCATCGGTAGATYCGACKGTCATCAGWGTYGACKGCGYACAGWGCATGCTG
AGCTACTACATACGTTACGTAGTCCAAGCATGTCTGACCCTAGGTCWGCSAWGC

R: A or G. Y: C, T or U. K: G, T or U. M: A or C. S: C or G. W: A, T or U

Table S3. ANOVA of the RSM/CCD model for optimizing BC production in a mixture of orange juice with independent variables: raisins extract and green tea extract.

Source	Sum of Squares	Degrees of freedom	Mean square	F-Value	Probability (P)>F
Model	236.37	5	47.27	3.35	0.0073
Residual	8.84	7	0.42		
Lack of fit	3.17	3	1.39	0.89	0.0205
Pure error	1.67	4	0.42		
Total	250.05	12			

R²=0.71, CV=4.38%, RAdj²=0.89, Pred R²=0.72