Supplementary material

Enhancing Xylanase Production from *Aspergillus tamarii* Kita and Its Application in the Bioconversion of Agro-Industrial Residues into Fermentable Sugars Using Factorial Design

Jose Carlos Santos Salgado [1,2], Paulo Ricardo Heinen [3], Josana Maria Messias [3], Lummy Maria Oliveira-Monteiro [3], Mariana Cereia [2], Carem Gledes Vargas Rechia [4], Alexandre Maller [5], Marina Kimiko Kadowaki [5], Richard John Ward [1,3] and Maria de Lourdes Teixeira de Moraes Polizeli [2,3,*]

[1] Department of Chemistry, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto (FFCLRP), University of São Paulo, 14040-900 Ribeirão Preto, São Paulo, Brazil; salgado@usp.br (J.C.S.S.); rjward@ffclrp.usp.br (R.J.W.)

[2] Department of Biology, Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto (FFCLRP), University of São Paulo, 14040-901 Ribeirão Preto, São Paulo, Brazil; macereia@ffclrp.usp.br

[3] Department of Biochemistry and Immunology, Faculdade de Medicina de Ribeirão Preto (FMRP), University of São Paulo, 14049-900 Ribeirão Preto, São Paulo, Brazil; prheinen@alumni.usp.br (P.R.H.); josana.messias@gmail.com (J.M.M.); lummy@udel.edu (L.M.O.-M.)

[4] Department of Biomolecular Sciences, Faculdade de Ciências Farmacêuticas de Ribeirão Preto (FCFRP), University of São Paulo, 14040-903 Ribeirão Preto, São Paulo, Brazil; cvrechia@fcfrp.usp.br

[5] Center of Medical Sciences and Pharmaceutical, Western Paraná State University, 85819-170 Cascavel, Paraná, Brazil; alexandre.maller@unioeste.br (A.M.); marina.kadowaki@unioeste.br (M.K.K.)

* Correspondence: polizeli@ffclrp.usp.br

Supplementary Table S1. Glucan, xylan, and Klason lignin relative composition

Residue	Glucan (%)		Xylan (%)		Klason lignin (%)		Reference
	Content	Removal after pretreatment	Content	Removal after pretreatment	Content	Removal after pretreatment	
In natura sugarcane bagasse	41.95	-	21.70	-	23.61	-	[58]
Steam-*exploded* sugar*cane bagasse*	63.12	11.16	6.49	82.35	23.07	42.31	[58]
In natura Barley bagasse	27.50	-	28.8	-	12.8	-	[59]

The residues were determined after the total removal of their components.

Supplementary Table S2. Enzyme activities present in the crude extract of *A. tamarii* Kita.

Enzyme activity	**Enzymatic activity (U mL^{-1})**	**Specific activity (U mg^{-1})**
Amylase	6.500 ± 0.158	73.034 ± 1.775
Endo-1,4-β-xylanase	23.122 ± 0.313	259.360 ± 3.955
1,4-β-xylosidase	0.025 ± 0.002	0.281 ± 0.022
α-L-arabinofuranosidase	0.243 ± 0.012	2.730 ± 0.135
Endo-1,4-β-glucanase	0.150 ± 0.014	1.685 ± 0.158
Cellobiohydrolase	0.255 ± 0.015	2.865 ± 0.169
1,4-β-glucosidase	0.040 ± 0.003	0.449 ± 0.034
Pectinase	0.191 ± 0.017	2.146 ± 0.191
Laccase	ND	ND

ND: not detected.