A new synergistic relationship between a xylan-active LPMO and xylobiohydrolase to tackle recalcitrant xylan

Anastasia Zerva\textsuperscript{1,2}, Christina Pentari\textsuperscript{1}, Sacha Grisel\textsuperscript{2}, Jean-Guy Berrin\textsuperscript{2}, Evangelos Topakas\textsuperscript{*}

\textsuperscript{1}Industrial Biotechnology & Biocatalysis Group, School of Chemical Engineering, National Technical University of Athens, 9 Iroon Polytechniou Str., Zografou Campus, Athens 15780, Greece

\textsuperscript{2}INRAE, Aix Marseille Univ., Biodiversité et Biotechnologie Fongiques (BBF), UMR1163, F-13009 Marseille, France

*Correspondence to: E. Topakas. Tel: +30-210-7723264; fax: +30-210-7723163; e-mail: vtopakas@chemeng.ntua.gr and J-G. Berrin. Tel: +33491828604; fax: +33491828601; jean-guy.berrin@inra.fr
**Table S1.** Xylo-oligosaccharide release from cellulosic fibers, after hydrolysis with *PcAA14B*, *TtXyn30A*, *AnXyn11* and their combinations, as shown in Fig. 1. Error bars represent the standard deviation from three independent experiments.

| Enzymes                  | Xylo-oligosaccharide concentration (µM) |
|--------------------------|----------------------------------------|
| *PcAA14B*                | 6.8 ± 0.3                              |
| *TtXyn30A*               | 20.2 ± 1.6                             |
| *TtXyn30A* + *PcAA14B*   | 88.6 ± 4.3                             |
| *AnXyn11*                | 162.5 ± 5.1                            |
| *AnXyn11* + *PcAA14B*    | 264.5 ± 5.1                            |

**Fig. S1.** Analysis of XOS release by *PcAA14B* and *TtXyn30A*, in different pretreated lignocellulosic substrates, as shown in Table 1; (a) Substrate 5, (b) substrate 2, (c) substrate 4. **Green line:** substrate only, **black line:** *PcAA14B*, **red line:** *TtXyn30A*, **blue line:** *PcAA14B* and *TtXyn30A*. DP2: xylobiose.
Fig. S2. Analysis of XOS release by TtXyn30A, in beechwood xylan (10X diluted, blue line: reaction, light blue line: substrate blank) and substrate 4 (2X diluted, green line: reaction, yellow line: substrate blank); red line: 23-(4-O-Methyl-α-D-Glucuronyl)-xylotriose, black line: XOS standards (DP 1-5).