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| **Table S10**: Protein features and regulation of lytic polysaccharide monooxygenases (LPMO) in *Phlebiopsis gigantea* |
| Protein ID | PredictedSignal peptidase cleavage site | Detected Domains1 | Peptide Detected | Significant Regulation2 |
| ELP/Glu | NELP/Glu | ELP/NELP |
| 227588 | TSA-HT | LPMO | yes | yes | yes | no |
| 20470 | VAA-HY | LPMO | no | no | no | no |
| 72251 | VTA-HT | LPMO | no | no | no | no |
| 227560 | SSA-HT | LPMO/CBM1 | yes | yes | yes | no |
| 27670 | VVA-HG | LPMO/CBM1 | no | no | no | no |
| 35240 | VSA-HG | LPMO | no | no | no | no |
| 37310 | VAG-HG | LPMO | yes | no3 | no3 | no3 |
| 118444 | ALA-HY | LPMO | yes | no | no | no |
| 112944 | VAA-HG | LPMO | no | no | no | yes - down |
| 18264 | VLA-HG | LPMO/CBM1 | no | yes | yes | no |
| 112087 | AAA-HY | LPMO | no | no | no | no |
| 79150 | AHA-TF4 | LPMO/CBM1tr5 | no | yes (p=0.021)6 | yes | no |
| 79143 | none | trLPMO | no | no | no | no |
| 125213 | VEG-HG | LPMOtr | no | no | yes | yes - down |
| 64774 | none | trLPMO | no | no | no | Yes - down |

2 Significant regulation (p≤0.01) is assumed to be ‘up’ unless otherwise stated.

3 Transcript is abundant on all substrates tested (RPKM values >1200).

4 The predicted Signal-P cleavage site would remove the family conserved N-terminal histidine (underlined).

1 Domains appended with a ‘tr’ designation indicates a truncation and its relative position.

5 Sequence alignments indicate that C-terminal CBM1 is truncated.

6 Although the p-value was slightly higher than the 0.01 threshold, a 26-fold increase was observed at p=0.02.