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Postia placenta gene expression during growth in furfurylated wood

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Background

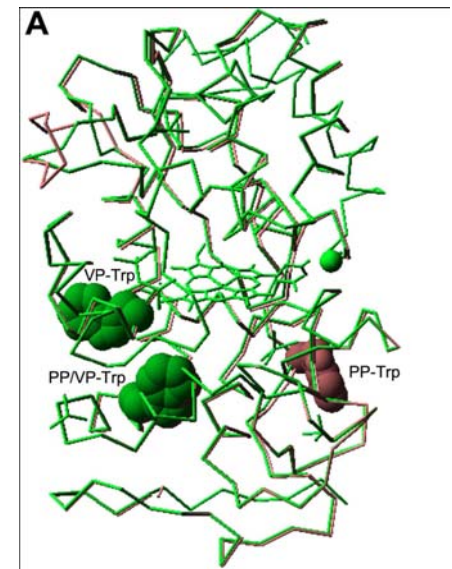
- > modified wood should itself be non-toxic
- > *why* does modified wood work?
- > mode of action

- > brown rot - common and destructive
- > brown rot decay still is hypothetical and controversial
- > genes involved?



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Hypothesis

Oxidative mechanisms become increasingly important on the expense of carbohydrate breakdown related expression in furfurylated wood compared to untreated wood?



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Aim

- > Present preliminary results targeting gene products from *P. placenta* during colonization of furfurylated and untreated wood



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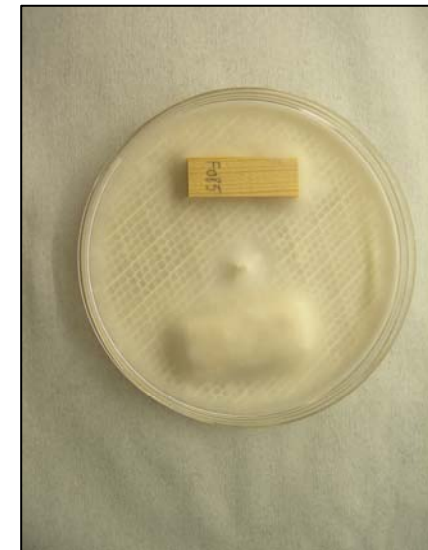
M & M

- > Scots pine sapwood:
 - > untreated control
 - > furfurylated
- > miniblock samples
- > *Postia placenta*
- > 2, 4 and 8 weeks
- > qRT-PCR on cDNA samples
- > 32 different genes + endogenous controls



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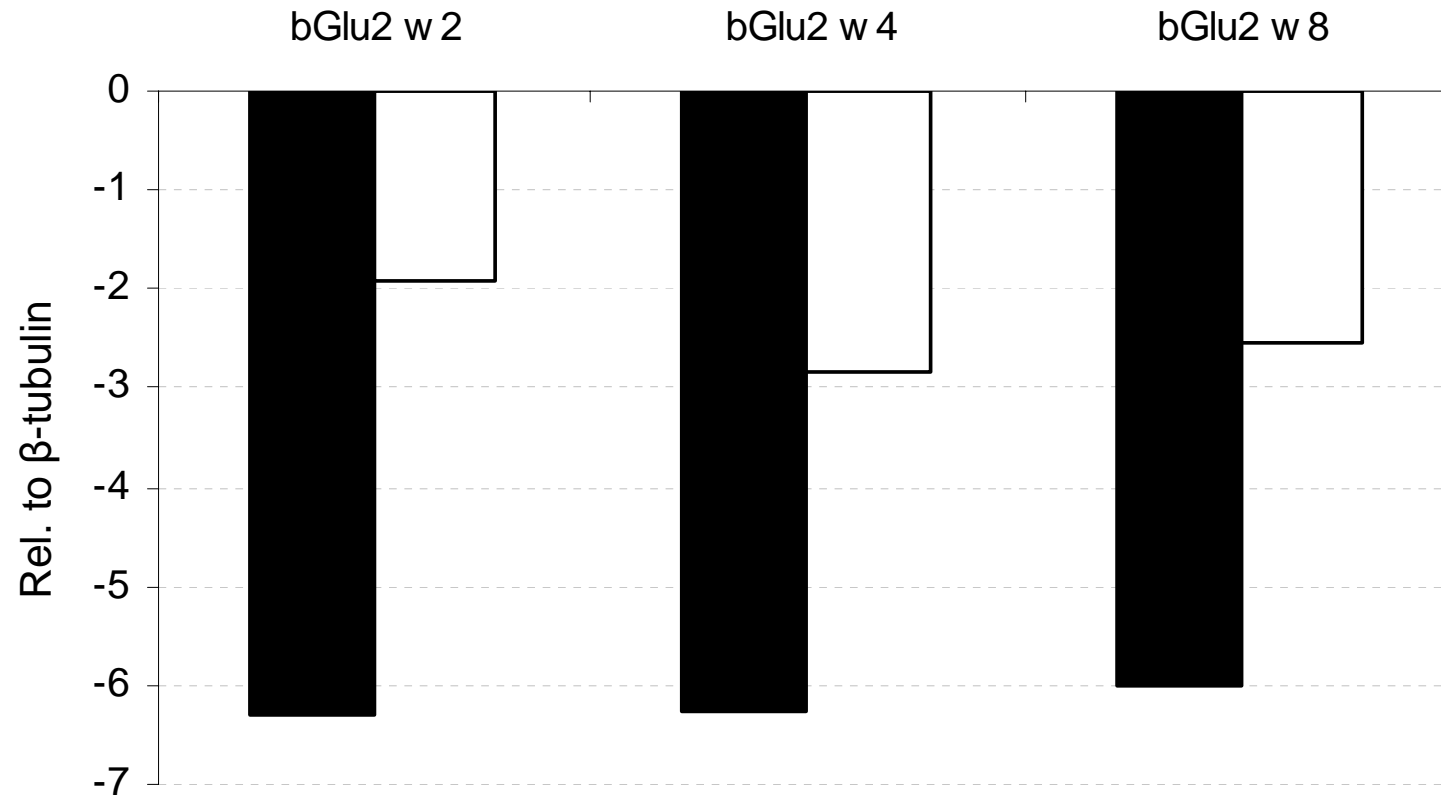
Furfurylated < Control

- > Endo-glucanase/GH5
- > β -glucosidase/GH3
- > Phenylalanine ammonia lyase
- > Cytosolic oxaloacetase



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■ Furfurylated

□ Control

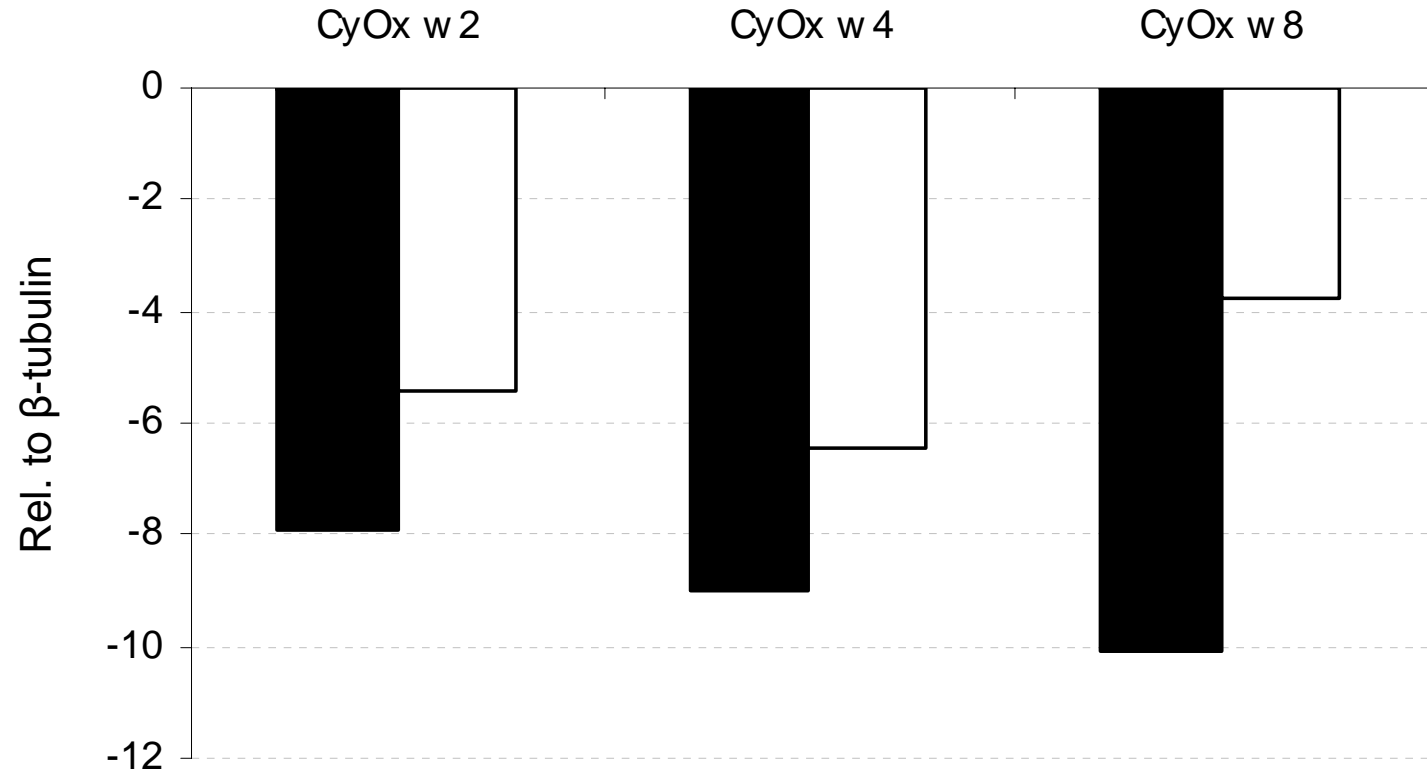


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■ Furfurylated
□ Control

Furfurylated > Control

- > Peroxidase-like
- > Alcohol oxidase
- > Laccase-like
- > Monophenol oxidase
- > NADH-quinone oxidoreductase
- > E-class P450 group I
- > Glucoamylase
- > Glucan 1,3b Glucosidase

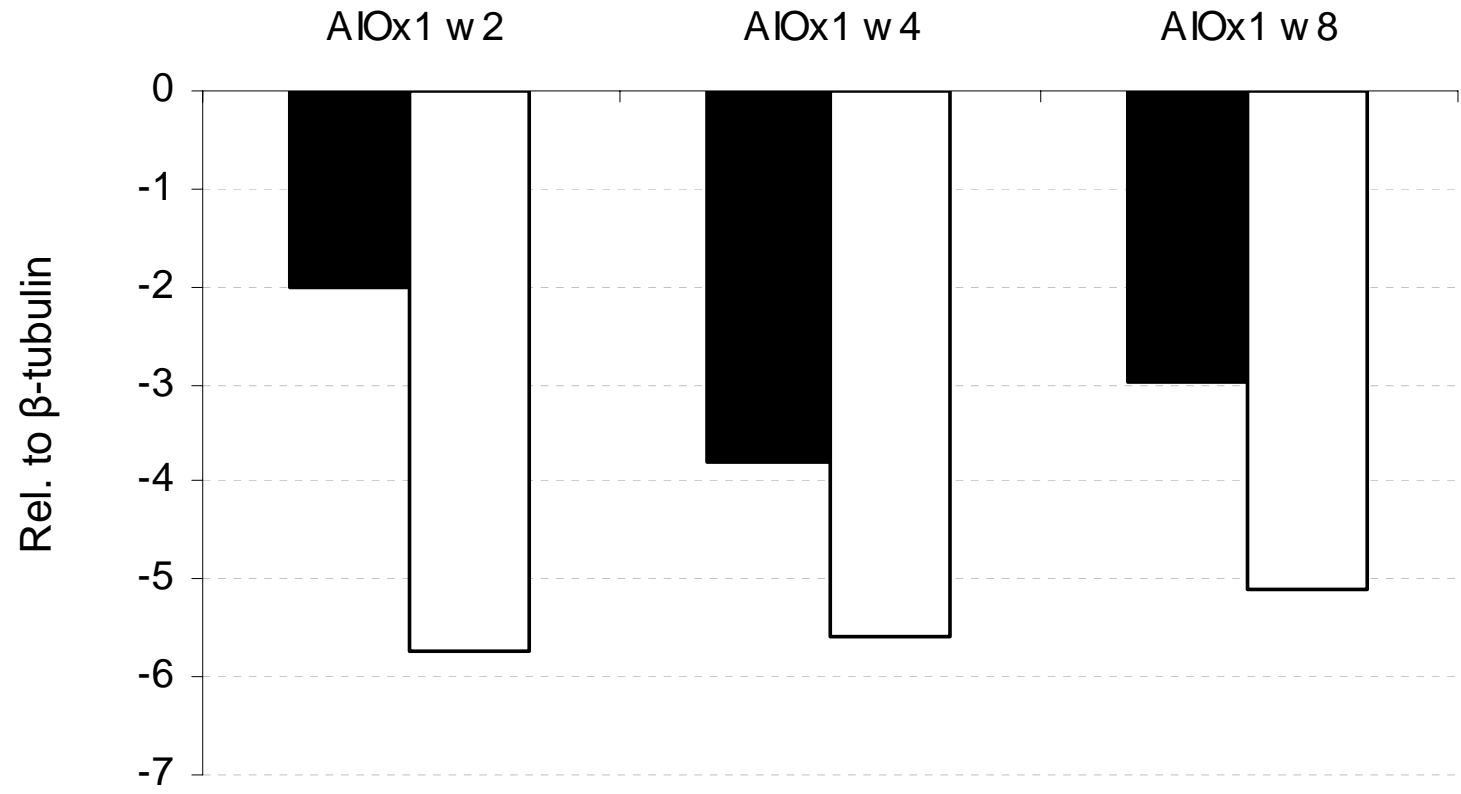


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■ Furfurylated
□ Control



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Conclusions

- > Increased oxidative metabolic gene activity
- > Genes related to carbohydrate metabolism related expression varied, but some central ones are down regulated
- > The cytochrome P450 tested were differentially regulated, suggesting versatility of roles for the different P450s during growth on modified and unmodified wood



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