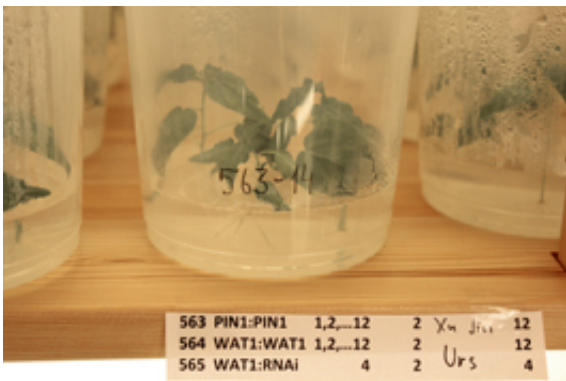


# Researchers find 'handle' with which to control wood growth, density

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Credit: Anna Strom

An international team of scientists have realised a breakthrough which paves the way for researchers to start controlling growth and density in trees bred for bioenergy production, such as hybrid aspen.

Bio4Energy researchers involved said the findings meant they now had a "handle" with which to manipulate the transport of the [plant hormone auxin](#) in [wood](#) producing cells found in the stem of trees. Their peer-reviewed work has been published in the well-respected scientific journal *Nature Communications* and was led by Deborah Goffner of the University of Toulouse.

There appears to be agreement in the scientific community involved in research focused on [plants](#) which have a similar make up to wood that

the hormone auxin is a regulator of [plant growth](#). Yet, the international research team says in its new article, so far all attempts at regulating the kind of auxin transport in wood that could influence the wood's make up have failed.

That may be about to change, however. The team succeeded in locating a protein which task is to transport the auxin through the growth stages of the model plant *Arabidopsis thaliana*. B4E researcher Urs Fischer said this WAT1 protein, as it has been named, could be a key to unlock the research community's past unfruitful attempts at inducing more rapid growth or further densification of wood.

"This plant hormone auxin regulates cell development and secondary walls in wood cells. We have found a transporter of this hormone... which is involved in the formation of the secondary cell wall. With this [new knowledge] we try to change wood properties", said Fischer of the Swedish University of Agricultural Sciences, who coordinated B4E's part of the work.

"Others have wanted to change the chemical properties of wood... since there are a lot of chemical hindrances to its break down, but here it is about changing growth characteristics", he explained.

"The next step will be to regulate the function of the [WAT1] gene in wood", Fischer said;

"Our ultimate goal is full growth and dense wood. This is long-term work, but now we have a gene to work on.

**More information:** Ranocha P, Dima O, Nagy R, Felten J, Corratgé-Faille C, Novák O, Morreel K, Lacombe B, Martinez Y, Pfrunder S, Jin X, Renou J-P, Thibaud J-B, Ljung K, Fischer U, Marinoja E, Boerjan W, Goffner D. 2013. Arabidopsis WAT1 is a vacuolar auxin transport

facilitator required for auxin homoeostasis. *Nature Communications*,  
[DOI: 10.1038/ncomms3625](https://doi.org/10.1038/ncomms3625)

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