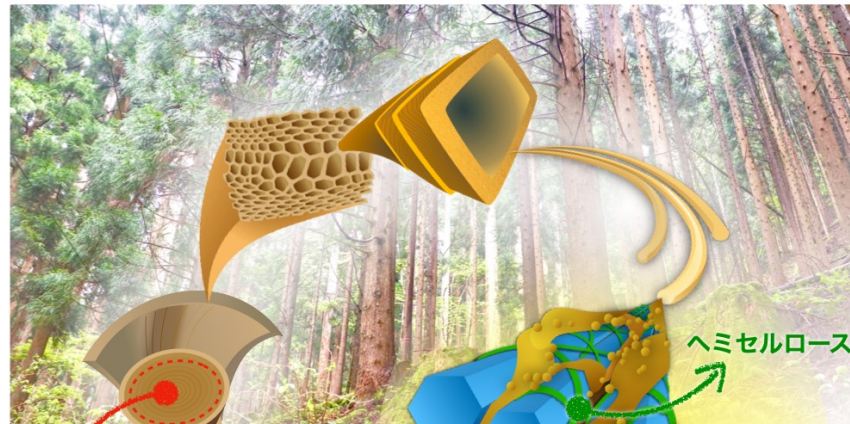




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森林植物由来有用成分の生合成機構の解明と それら成分の有効利用

[キーワード:心材成分, 心材形成, 有用成分利用] 准教授 山村 正臣



心材

- ・腐朽されにくい
- ・建材などに利用
- ・心材形成機構は未解明

心材成分

- ・抗菌活性を示す物質が多く存在

木質成分

- (1) 生合成機構の解明
- (2) 心材形成に関わる遺伝子情報の取得

- (3) 耐腐朽性の高い木質材料の開発

内容:

植物はさまざまな有用成分を生産しています。しかし、それら有用成分の多くが植物体内でどのように生合成され、そこにはどのような酵素や遺伝子が関わっているのか未だに解明されていません。

そこで私たちは森林植物が生産する特定の有用成分に注目し、その生合成機構解明、またそれら成分の活用を試みています。具体的には以下のような内容です。

- (1) 針葉樹心材部に特異的に蓄積し抗菌活性を示すノルリグナン類の生合成遺伝子の同定
- (2) 未だ謎が多い心材形成に関与する遺伝子発現情報の取得
- (3) 心材成分及び木質成分を利用した耐腐朽性の高い木質材料の開発に向けた基礎研究

分野: 森林圏科学

専門: 木質科学

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Elucidation of biosynthetic mechanism of useful compounds from forest plants and effective utilization of those compounds

Associate Professor Masaomi Yamamura



Heartwood

- Great durability
- Use as building materials
- The mechanism of heartwood formation is still unknown

Heartwood components

- Many compounds with high antibacterial and fungal activities are existed

Lignocellulosic components

- (1) Elucidation of biosynthetic mechanism
- (2) Collection of gene expression data regarding to heartwood formation
- (3) Development of woody materials with great durability

Content:

Plants produce various useful compounds. However, how many of these compounds are biosynthesized in plants and what enzymes and genes are involved in their biosynthesis have not been elucidated.

Therefore, we are focusing on some compounds produced by forest plants and trying to elucidate their biosynthetic mechanisms and to utilize them. The details are as follows.

- (1) Identification of genes involved in the biosynthesis of norlignans, which accumulate specifically in heartwood of conifers and show antimicrobial activity.
- (2) Collection of gene expression data regarding to heartwood formation.
- (3) Fundamental research for development of woody materials with great durability by utilizing heartwood components and lignocellulosic components.

Keywords:

Heartwood components,
Heartwood formation,
Utilization of useful compounds

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