

## LENScience Senior Biology Seminar Series

### Student Update Number 10 – August 21<sup>st</sup> 2009

#### In this issue:

- ✗ Seminar 5—Questions and Challenges

#### Seminar 5—Questions

Questions, questions and more questions!

Well done team!

You had the wiki-chat team going flat out with your questions at the end of the session and have really impressed the scientists with your thinking skills!



Not on wiki-chat—it's as easy as twittering!

Forgotten how to login to the wikisite? - Instructions are on [student-update 3](#)

UNIVERSITY HOME > LIGGINS INSTITUTE > LENSCIENCE


**THE LIGGINS INSTITUTE**  
 THE UNIVERSITY OF AUCKLAND  
 Te Whare Wananga o Tamaki Makaurau

<b>Views</b>	<b>Return to 2009 S</b>
<ul style="list-style-type: none"> <li>» Page</li> <li>» Discussion</li> <li>» View source</li> <li>» History</li> </ul>	
<b>Personal tools</b>	
<ul style="list-style-type: none"> <li>» 130.216.141.16</li> <li>» Talk for this IP</li> <li>» Log in / create account</li> </ul>	
<b>Toolbox</b>	
<ul style="list-style-type: none"> <li>» What links here</li> <li>» Upload file</li> <li>» Special pages</li> </ul>	

**Contents**  
[show]

[How Do Plants Grow? Mechanisms](#)  
[The Seminar Paper and Questions](#)

This is where you login.....

Your teacher was sent a login and password for your school at the beginning of the year.....

**Take up the challenge!**

## Seminar 5 Challenges

Choose your challenge and post your ideas about how to answer the questions to the [Plant Growth Discussion Page](#) .....

[http://lens.auckland.ac.nz/index.php/Plant\\_Growth\\_Discussion\\_Page](http://lens.auckland.ac.nz/index.php/Plant_Growth_Discussion_Page)

### Challenge 1

By creating a transgenic plant where a gene or protein could be turned on or off, the scientific team worked out what that gene did in the cell.  
Explain how a transgenic plant is created and how gene expression can be (a) turned on and off and (b) observed.

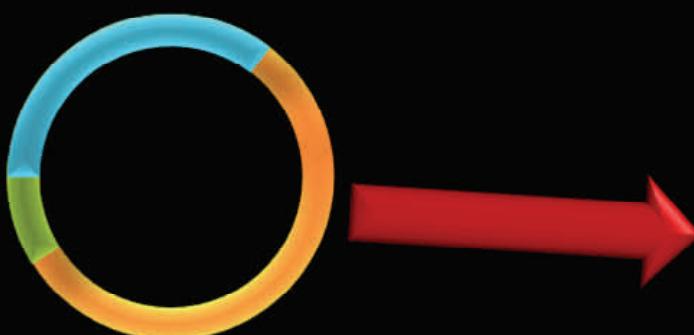
### Unpack....

What is a transgenic plant?

What did the science team do to find out how the protein behaved?

How would you create and then test your model?

- A transgenic plant is created



## Challenge 2

## Unpack

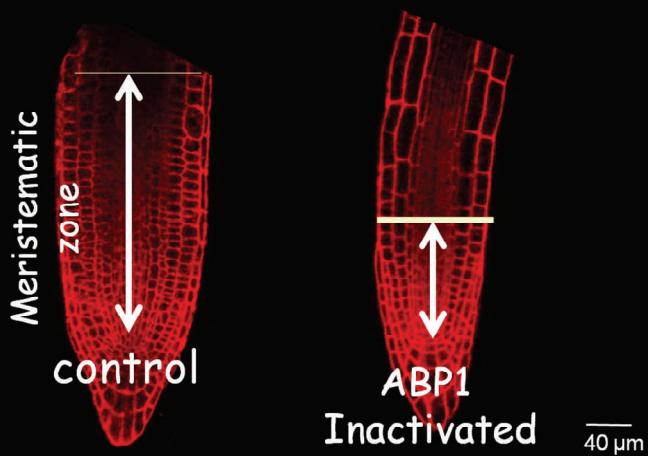
2. The scientific team found that as well as affecting shoots and leaves, inhibiting Auxin Binding Protein affected the growth of roots.

As with the shoots they ran tests with and without ethylene to check that the gene was being turned off.

2. ....

- We know that when ABP1 was inactive the roots did not grow.
- What does the information in the micrographs above tell us about the role of ABP1 in root growth?
- Why did having ABP1 turned off stop the roots from growing?

### What role does ABP1 play in root growth?



Meristematic tissue is the place in the plant where new growth takes place.

Meristematic cells are undifferentiated – they are still capable of cell division

### When ABP1 is turned off, roots do not grow

