

LENScience Senior Biology Seminar Series

Teacher Update Number 12 – August 21st 2009

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Seminar 5 Questions

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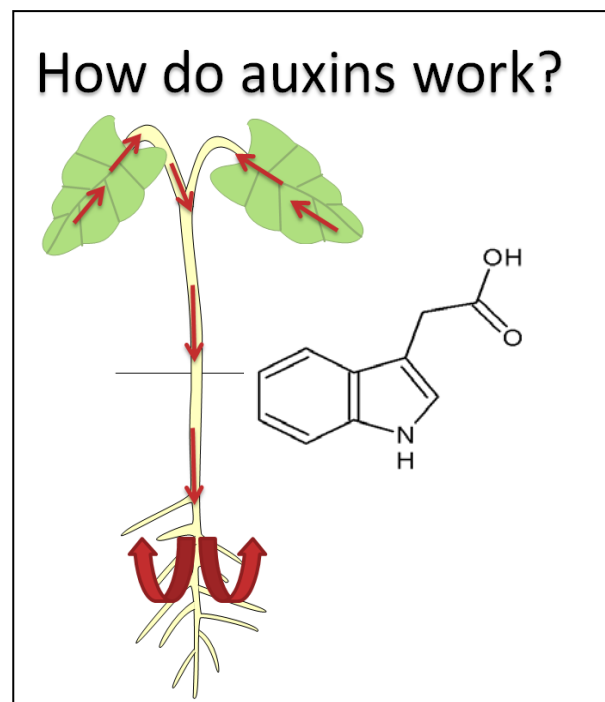
We were pleased with the number of searching questions that came through during seminar 5. **Thanks to those teachers who are actively supporting questioning from their group.** If your group's question did not get through to the live seminar, we apologise. There were so many questions coming through to the wiki in the last 5 minutes of the seminar that Helen and Anna has to do some quick selection. Please be assured that all the questions that came through via wiki-chat will go up between now and early next week – keep an eye out for the answers and share this with your students.

Seminar 5 – Student Challenge

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There is no doubt that seminar 5 offered quite a strong academic challenge in itself for Year 13 students. The challenge questions are designed to help students look (a) at another aspect of uses of biotechnologies and (b) to have some more experience in interpreting data and discussions around the nature of science. We hope that this extension of the concepts of auxin action from the curriculum will have created opportunity to review the basics of auxin action and also stimulated thinking and discussion in your groups. Today's student update provides a template for discussion around those challenges for your in-school workshops.

Remember - If your students are working on these in class, we would be interested to read copies of their work. Please email ligginsinfo@auckland.ac.nz to discuss.



LENScience Connect wins a KAREN Capability Fund Grant

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We are pleased to announce that LENSscience Connect has been the recipient of a [REANNZ KAREN Capability Grant](#). This grant will enable the funding of a significant proportion of this year's productions and contribute to the cost of research into the educational value of the programme. In addition, the grant will cover the cost of installing video-conference capability to allow the trial of video conference connection to selected centres in the final two seminars of the year. LENSscience would like to thank REANNZ for this opportunity and look forward to exploring this new and exciting addition to the seminar series.



Student Lists

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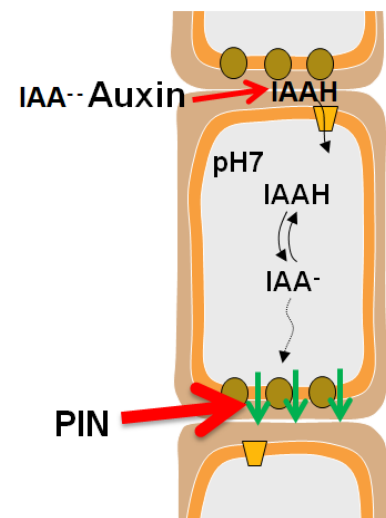
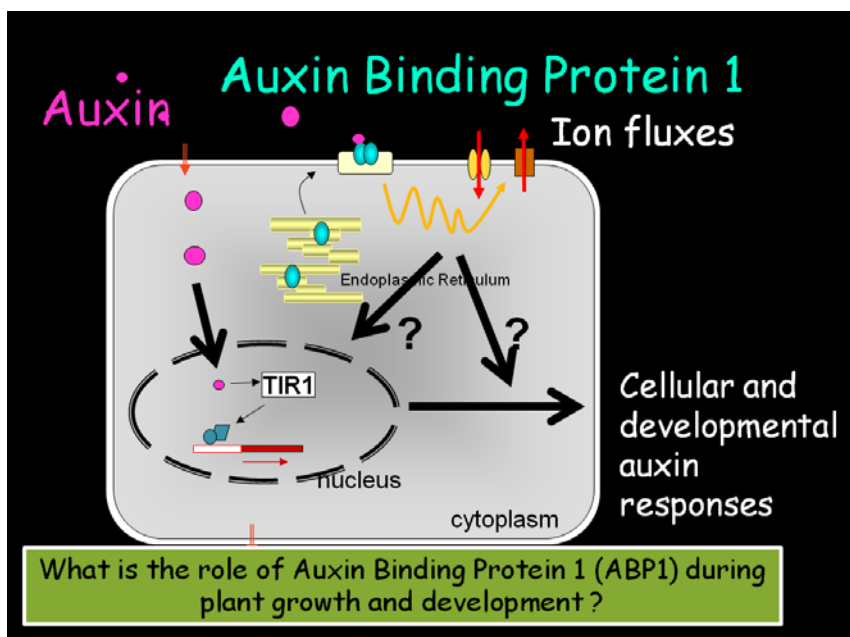
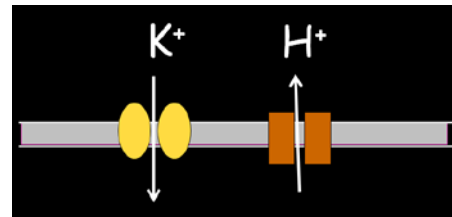
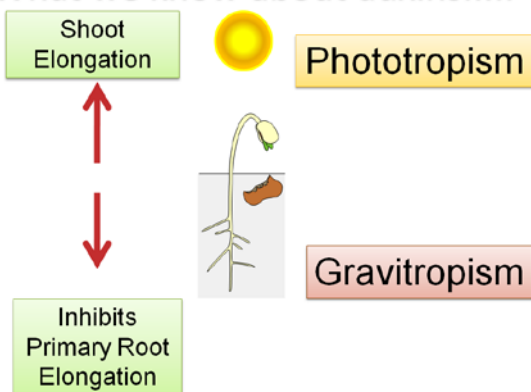
A reminder that if you would like your students to be sent the student updates directly via email, please send an excel spreadsheet list of students to ligginsinfo@auckland.ac.nz using the following format: surname | Name |email

Useful diagrams

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I have included a couple of diagrams that could be useful for your teaching / post seminar workshops. These diagrams are all drawn by either Karine or I so do not have copyright issues associated with them.

What we know about auxins.....



The *Agrobacterium tumefaciens* pictures are from wikicommons so are copyright free. The one to the left is bacteria on a carrot. To the right is the tumor that forms in the plant.
<http://commons.wikimedia.org/w/index.php?title=Special%3ASearch&search=agrobacterium>



Model Plants: the plant that Karine uses most often is *Arabidopsis*. Here is a photo courtesy of Karine's research group.



Note the TIR1 diagram which nicely demonstrates how auxin removes the repressor in an operon is courtesy of the National Science Foundation and can be used in education with this copyright statement. A copy of this is on the student worksheet.

Courtesy: National Science Foundation. www.nsf.gov
Nicolle Rager Fuller, National Science Foundation

If you are interested in using the maps that were presented in the seminar, these are all accessible as teaching tools from the website here. Note that the copyright requirement on use of these maps is stated on the web site that they must be used with acknowledgement and the copyright stated as below.

www.worldmapper.org © Copyright 2006 SASI Group (University of Sheffield) and Mark Newman (University of Michigan)

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