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|  |  | LAB -7- |

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| |  | | --- | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | **Mitosis in *Allium cepa*  root tips**   |  |  |  | | --- | --- | --- | | http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ss_gifs/17.1.gif | http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ss_gifs/17.2.gif | http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ss_gifs/17.3.gif |   **1.** Support a Allium cepa over water. Leave until the roots develop, (3 - 4 days).  **2.** Cut off the root tips 1 - 2 cm long. Put them in a small volume of [acetic alcohol](http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ssheet17.htm#acetic) for 10 minutes.  **3.** Wash root tips in ice cold water for 4 - 5 minutes, then dry them on filter paper.   |  |  |  | | --- | --- | --- | | http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ss_gifs/17.4.gif | http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ss_gifs/17.5.gif | http://www-saps.plantsci.cam.ac.uk/worksheets/ssheets/ss_gifs/17.6.gif |   **4.** Transfer root tips 1M hydrochloric acid for 5 minutes. Repeat step 3. Take care - they will be very fragile.  **5.** Transfer two root tips to a clean microscope slide. Cut each root tip about 2 mm from the growing tip. Keep the tips, discard the rest.  **6.** Macerate the root tips with a mounted needle. Add one small drop of Geimza stain for 2 minutes.  **7.** Cover with a cover slip.  **8.** View under the microscope (x400 magnification is adequate) and look for cells with chromosomes.  **5.** Calculate the mitotic index.  **Mitotic index = number of cells containing visible chromosomes divided by the total number of cells in field of view**  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------- |