

# Histology Basics and Cell Death Detection in Honeybee Tissue

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jove.com/video/64141

## Materials

| Name  | Company            | Catalog Number | Comments   |
|---|--------------------|----------------|--|
| 2-Propanol  |                    |                |  |
| ApopTag Peroxidase kit (ApopTag Peroxidase In Situ Apoptosis Detection) | Sigma-Aldrich      | S7100          | Assay B, <a href="https://www.sigmaaldrich.com/SI/en/product/mm/s7100?gclid=CjwKCAjw7vuUBhBUeIwAEdu2pPanl9SEj81ZTI-nLHEoxXAv7ViKwPA_QRxH7fciMRNcYwR7lbPQbhoCqcQQA vD_BwE">https://www.sigmaaldrich.com/SI/en/product/mm/s7100?gclid=CjwKCAjw7vuUBhBUeIwAEdu2pPanl9SEj81ZTI-nLHEoxXAv7ViKwPA_QRxH7fciMRNcYwR7lbPQbhoCqcQQA vD_BwE</a> ; Positive controls included in S7101 |
| Covers  |                    |                |  |
| DeadEnd Colorimetric TUNEL system                                       | Promega            | G7360          | Assay A, <a href="https://worldwide.promega.com/products/cell-health-assays/apoptosis-assays/deadend-colorimetric-tunel-system/?catNum=G7360">https://worldwide.promega.com/products/cell-health-assays/apoptosis-assays/deadend-colorimetric-tunel-system/?catNum=G7360</a>   |
| Dissecting microscope (for bee dissection)                              | Zeiss              |                |  |
| Distilled water   |                    |                |  |
| Embedding cassette  |                    |                |  |
| EnVision System alkaline phosphatase kit                                | Dako               |                |  |
| Eosin Y Solution  | Sigma-Aldrich      |                | alcoholic  |
| Ethanol   |                    |                | 95% (or less pure), 90%, 80%   |
| Faramount mounting medium, aqueous                                      | Dako               |                | mounting medium  |
| Flattening table  | Leica              | HI1220         |  |
| Forceps (for bee dissection)  | Fine science tools | 11294-00       | Standard #4  |
| Formalin 10%  |                    |                | Formaldehyde   |
| Hematoxylin   | Sigma-Aldrich      |                |  |
| HistoChoice Clearing Agent  | Sigma-Aldrich      |                | clearing agent   |
| Hydrogen peroxidase 3%  |                    |                |  |
| Incubator   | BioRad             |                |  |

|   |                    |                   |  |
|---|--------------------|-------------------|--|
| Insect pins (for bee dissection)                                    | Entosphinx         | 44594             | Insect pins stainless steel – white, size 2  |
| ISCDDK, AP (In Situ Cell Death Detection Kit, Alkaline Phosphatase) | Roche              | 11684809910       | Assay C, <a href="https://www.sigmaaldrich.com/deepweb/assets/sigmaaldrich/product/documents/362/737/11684809910bul.pdf">https://www.sigmaaldrich.com/deepweb/assets/sigmaaldrich/product/documents/362/737/11684809910bul.pdf</a> |
| KH <sub>2</sub> PO <sub>4</sub>                                     |                    |                   |  |
| Lab clock   |                    |                   |  |
| Light microscope  | Leica              |                   |  |
| Microscope slides   |                    |                   | Box with the slides must be preserved in a plastic wrap to prevent dust  |
| Microtome   | Leica              |                   |  |
| Modular tissue embedding station                                    | Leica              |                   |  |
| Na <sub>2</sub> HPO <sub>4</sub>                                    |                    |                   |  |
| NaCl  |                    |                   |  |
| Paraformaldehyde 4%   |                    |                   |  |
| Paraplast   | Leica              |                   |  |
| Pasteur pipettes  |                    |                   | 1.5 mL; 3 mL   |
| PBS   |                    |                   |  |
| Petri dish (for bee dissection)                                     |                    |                   | Filled with condensation silicon (Xantoprene L blue and Universal liquid plus activator)   |
| Proteinase K  | Merck              | 21627             |  |
| Ringers' solution (for bee dissection)                              |                    |                   | 7.5 g NaCl, 2.38 g Na <sub>2</sub> HPO <sub>4</sub> , 2.72 g KH <sub>2</sub> PO <sub>4</sub> , 1 L distilled water   |
| Scissors (for bee dissection)                                       | Fine science tools | 1406-09, 14061-09 | Straight and curved, 9 cm  |
| Universal liquid plus activator (for bee dissection)                | Kulzer             |                   |  |
| Watchmaker's forceps (for bee dissection)                           | Fine science tools | 91100-12          |  |
| Water bath  | Leica              |                   |  |
| Watercolor brush  |                    |                   | 2x   |
| Xantoprene L blue (for bee dissection)                              | Kulzer             |                   |  |