



Christian
Doppler
Laboratory

for
Cardiac and Thoracic
Diagnosis & Regeneration



MEDIZINISCHE
UNIVERSITÄT
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Thymidine Incorporation Assays

Short Presentation

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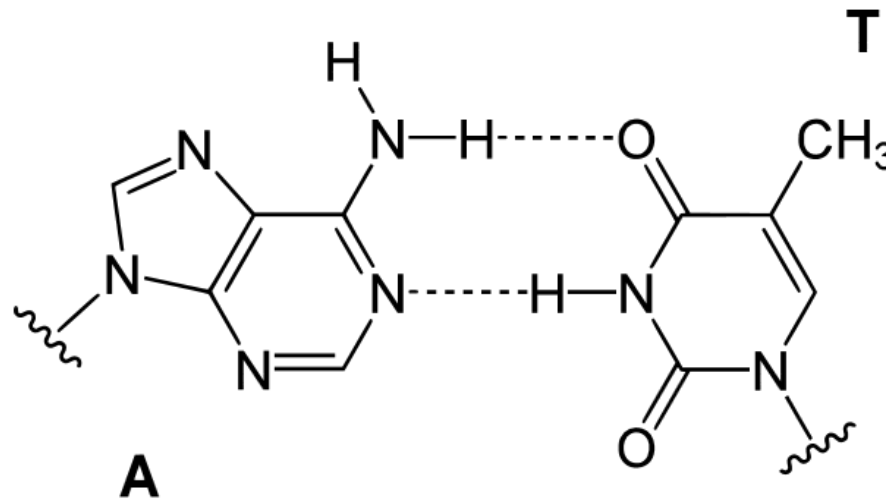
Christian Doppler Laboratory for Cardiac and Thoracic Diagnosis and Regeneration

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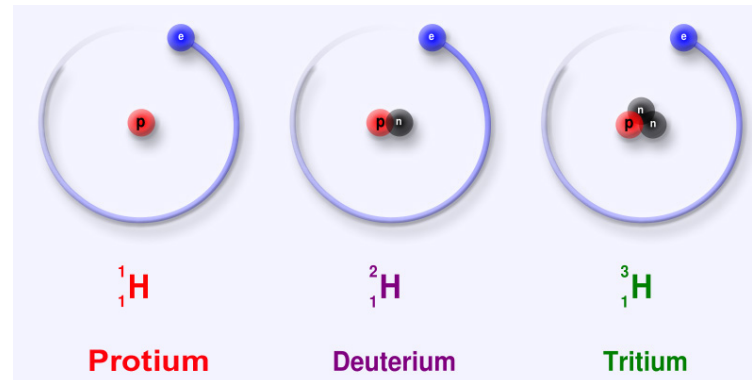
Thymidine

- other names: Deoxythymidine, Deoxyribosylthymine
- DNA nucleoside, pairs with deoxyadenosine



Assay

- Target cells are incubated with tritiated thymidine (^3H -thymidine, radioactive)



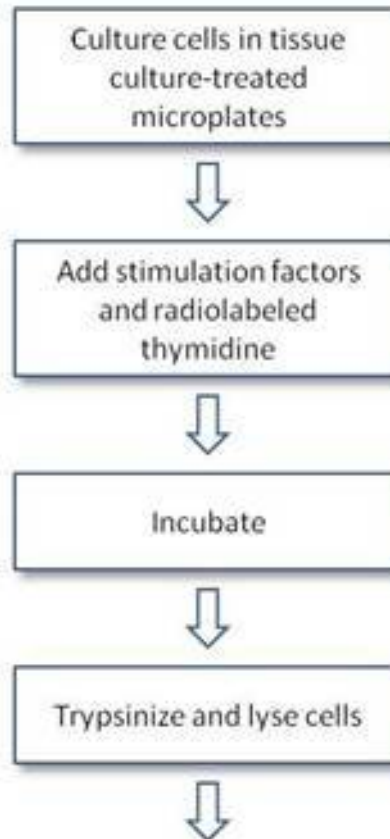
- During the S phase ^3H -thymidine is incorporated into new DNA strands
- The higher the proliferation rate, the more radioactivity is incorporated into DNA

Assay

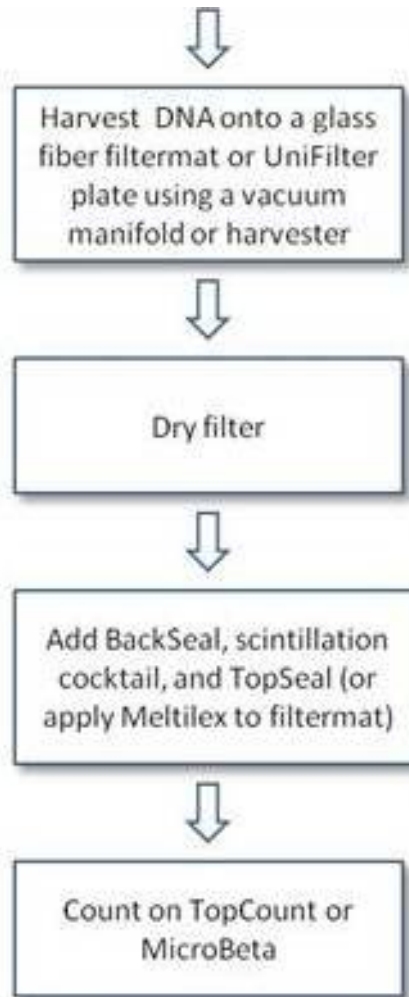
- After incubation DNA is harvested
- Radioactivity is measured via β -scintillation counting (cpm = counts per minute)
- Compare results with control cells

Procedure

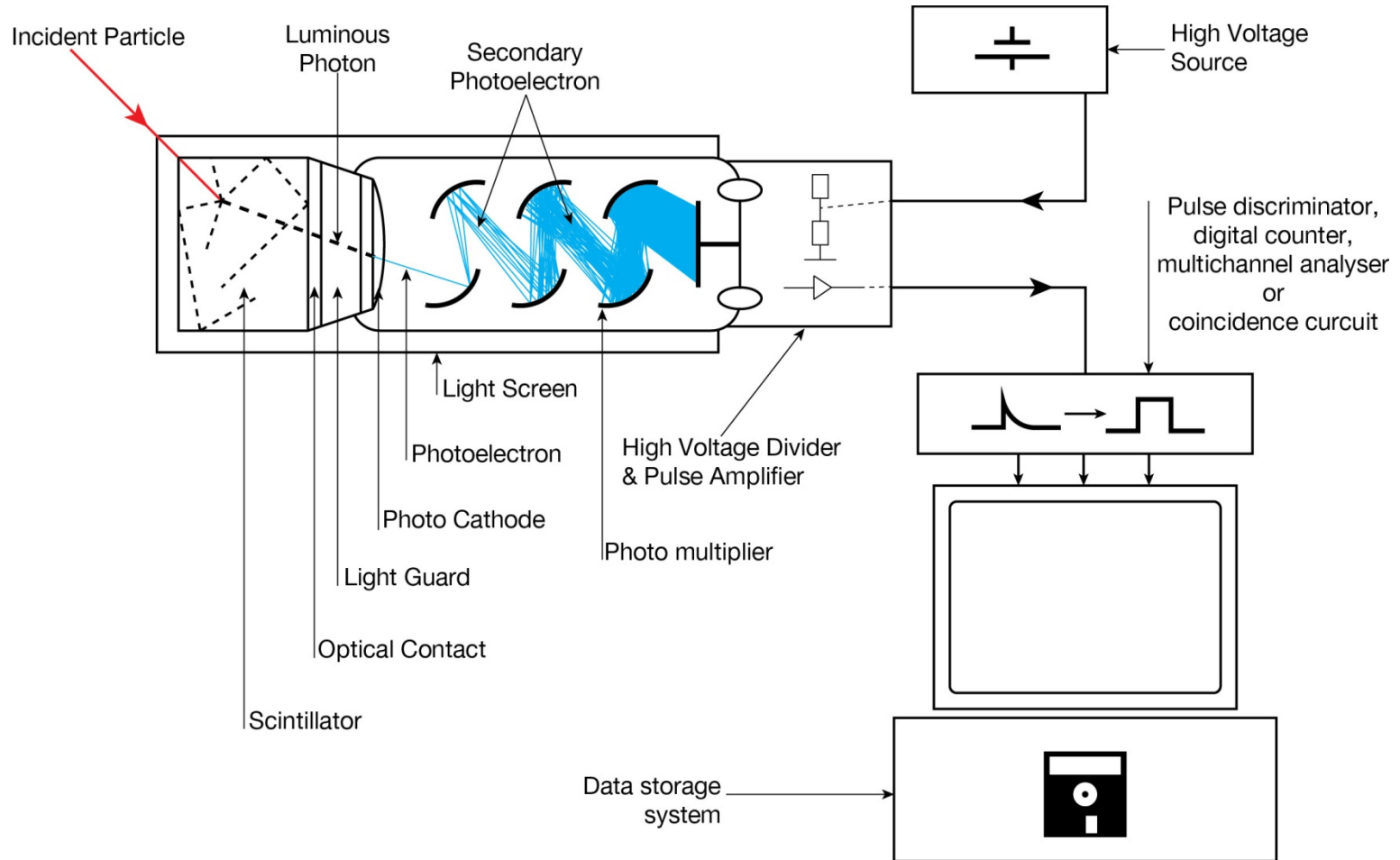
Filtration format



Procedure



Scintillation counter



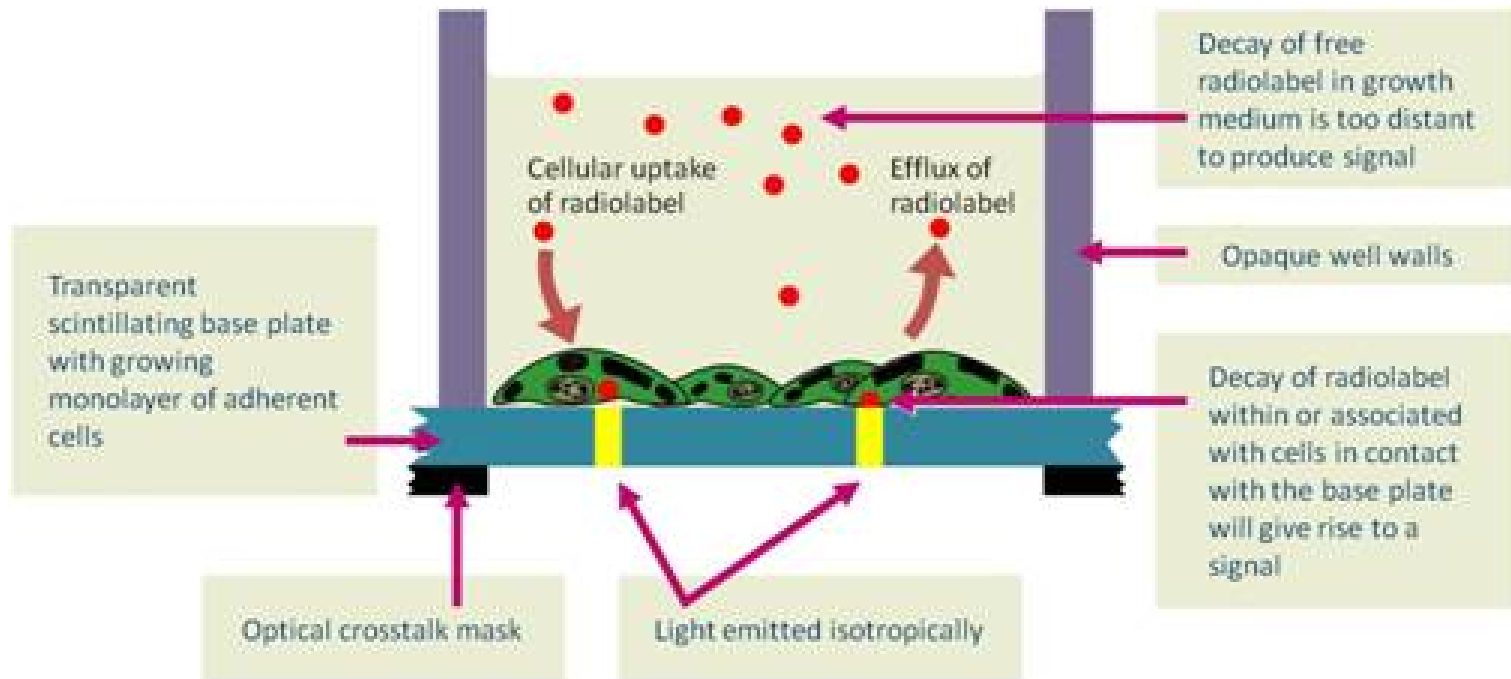


Variants

- Liquid scintillation counting
- Flow-cytometry¹:
 - antibody-based detection of bromo-deoxyuridine (BrdU)
 - Detection of 5-ethynyl-2-deoxyuridine (EdU)
- Specialized well-plates

¹<http://tools.lifetechnologies.com/content/sfs/manuals/mp10418.pdf>

PerkinElmer- Cytostar





Procedure

Cytostar-T format

