

UNIVERSITAS GADJAH MADA

Pelatihan sel kultur dasar
LPPT-UGM



Basic cell culture




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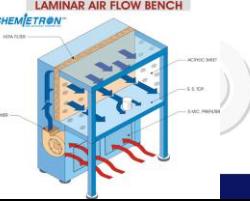
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Peralatan utama untuk kultur sel hewan a.l:

- Laminar air flow/flow hood

Saat kapan dapat menggunakan

- Horizontal hood
- Vertical hood (Biological safety cabinet)




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- Mikroskop Inverted



Apa bedanya



www.satishmedical.tk

XSZ-107BN

- Mikroskop Fase kontras

mengamati benda hidup dalam keadaan alamiahnya

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Peralatan pendukung untuk kultur sel hewan:




Vial Holder



Tangki Nitrogen cair

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Tangki nitrogen cair

- Minus 196 derajat celcius



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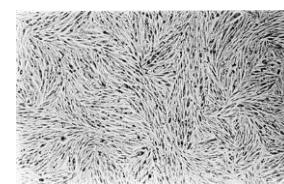
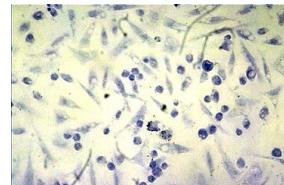


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Confluency

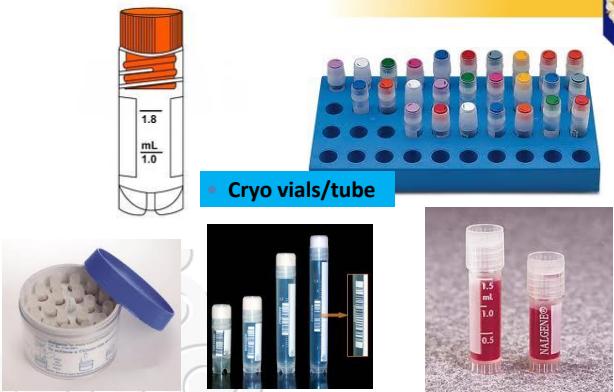
- How “covered” the growing surface appears
- Optimal confluency for moving cells to a new dish is 70-80%
 - too low, cells will be in lag phase and won’t proliferate
 - Too high and cells may undergo unfavorable changes and will be difficult to remove from plate.



Understanding Cell Behavior

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Cryopreservation of Cell Cultures

- The aim of cryopreservation is to enable stocks of cells to be stored to prevent the need to have all cell lines in culture at all times → important with cells of limited life span.
- Advantages:
 - Reduced risk of microbial and cross contamination.
 - Reduced risk of genetic drift and morphological changes
 - Reduced costs

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Cryopreservation of Cell Cultures

- Principle is slow freezing and quick thaw.
- Cells are cooled at a rate of 1 to -3 °C per minute and thawed quickly by incubation in a 37 °C waterbath for 3-5 minutes.
- Cultures should be healthy with no signs of microbial contamination.

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Cryopreservation of Cell Cultures

- Cryoprotectant such as DMSO (Dimethylsulfoxide) should be used to protect cells from rupture by the formation of ice crystals.

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basic methodes in animal cell culture

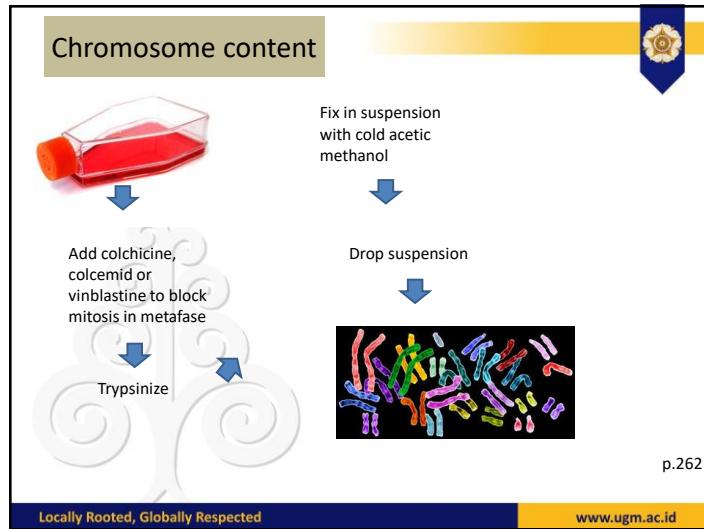


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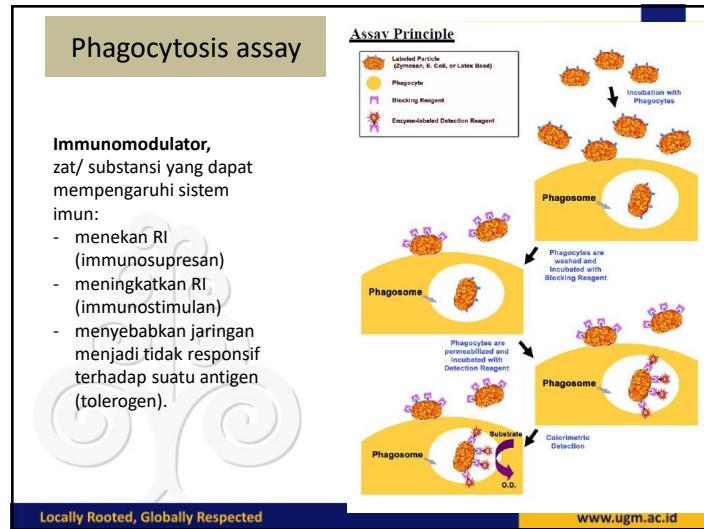
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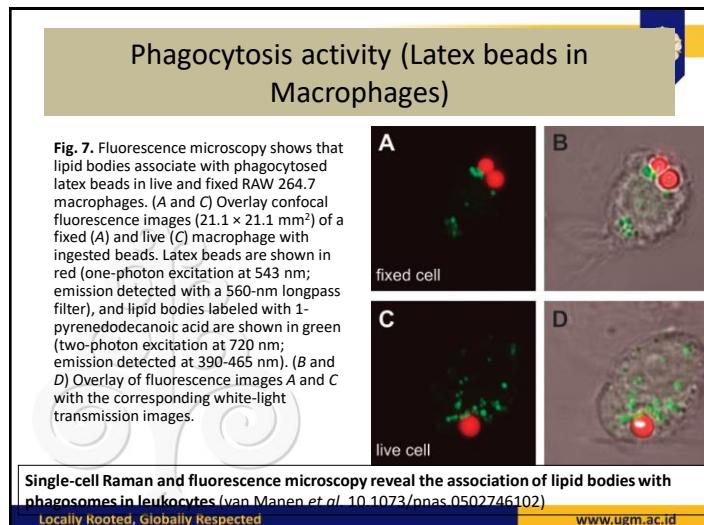
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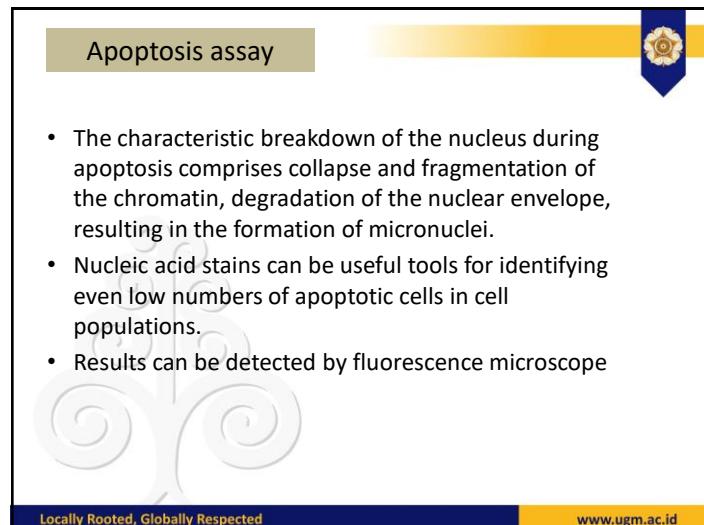
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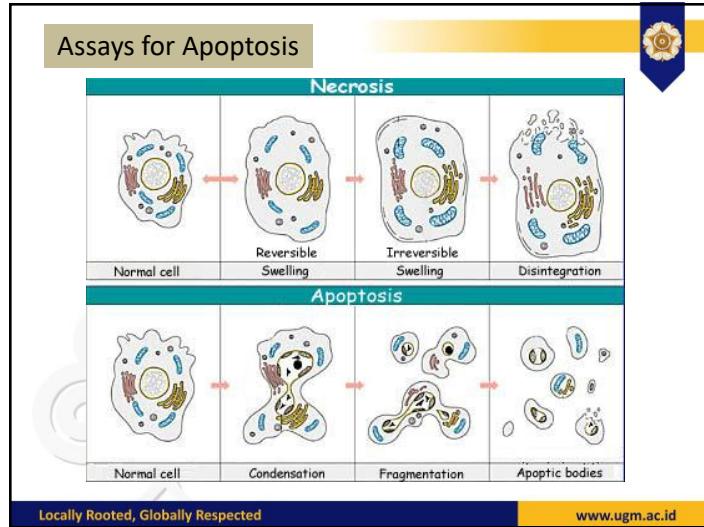
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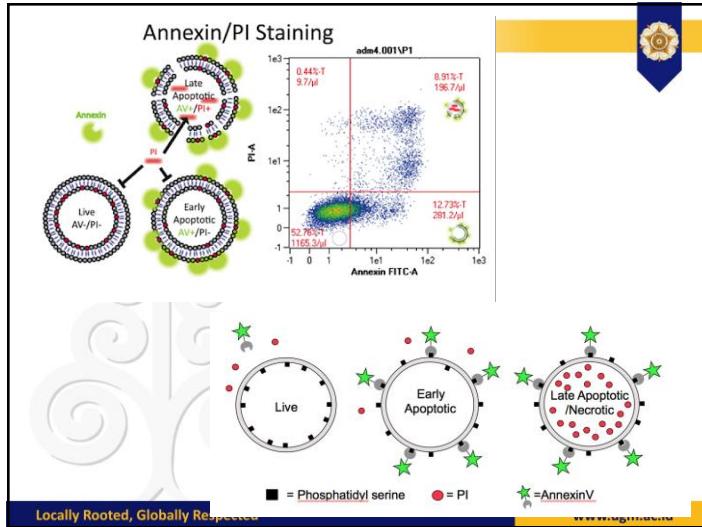
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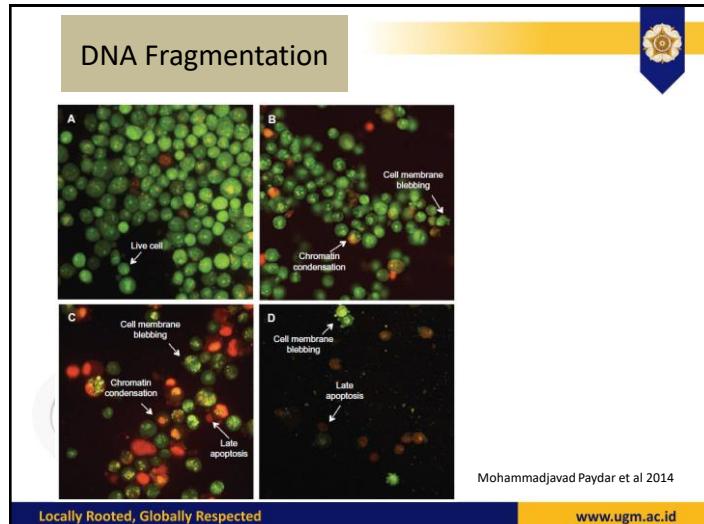
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Hanging drop method

Video <https://www.youtube.com/watch?v=hy32BiAB15U>

merupakan metode sederhana dengan mengkultur sel, meletakkan kultur sel tergantung dan diinkubasi dalam kondisi fisiologis hingga membentuk sferoid 3D; sel akan kontak langsung dan membentuk komponen matriks ekstrasel. – aggregation.

Secara kontras, sel kanker saat metastasis tidak mempunyai sifat adhesi pd matriks ekstraselular, dan dpt bebas pindah ke bagian tubuh yang lain karena tidak melekat ke protein matriks ekstraselular.

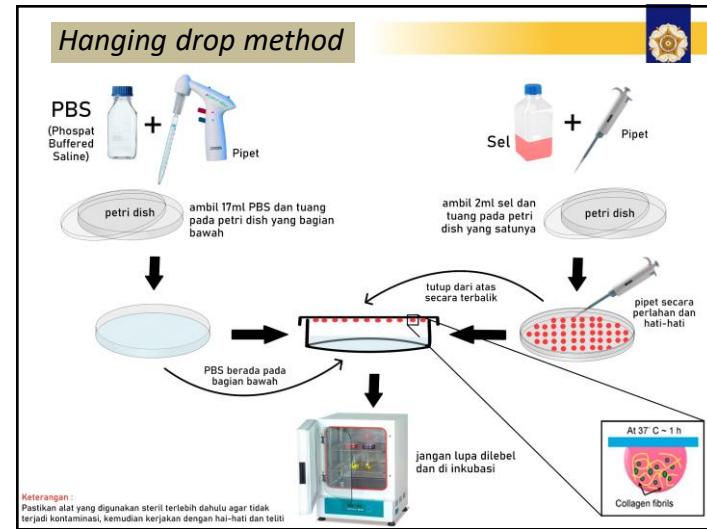
Reaksi antara fibrinogen dan platelet membentuk agregasi pada proses pembekuan darah

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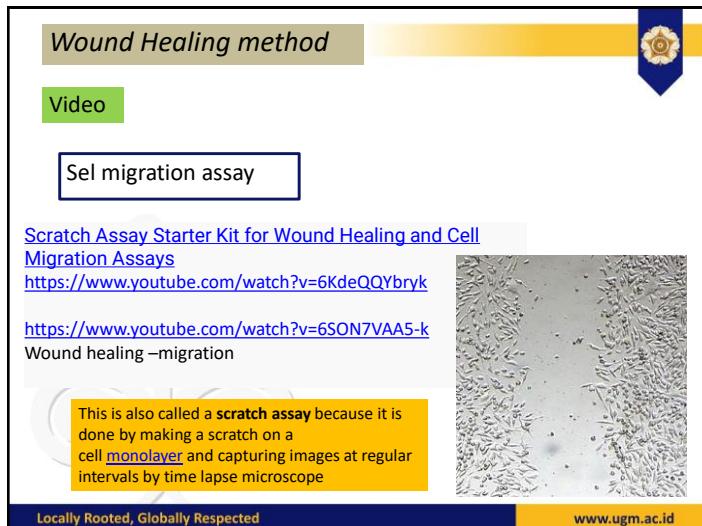
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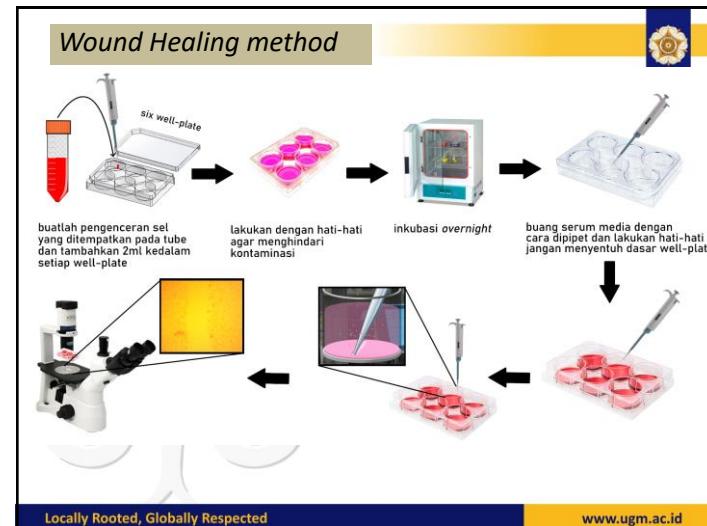
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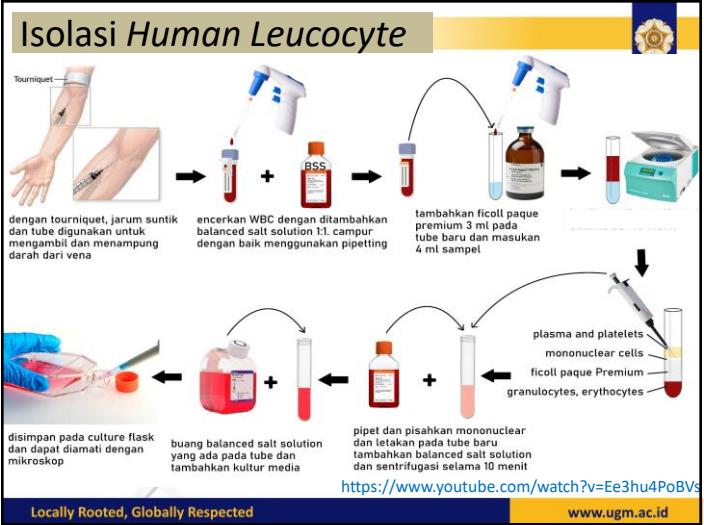
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