**Cell Cycle and Cancer Lab**

This lab is meant to help you recognize that a gene mutation in a cell can result in uncontrolled cell division called cancer, and how exposure of cells to certain chemicals and radiation increases mutations and thus increases the chance of cancer.

Visit the link below:

<http://www.mhhe.com/biosci/genbio/virtual_labs_2K8/labs/BL_03/index.html>

Analyze at the slides of cells, both cancerous and noncancerous, for the lung, stomach and ovary

In the data table below, record how many cells are in each stage: interphase, prophase, metaphase, anaphase, telophase. Hint: which phases are stages of MITOSIS (dividing)? Which phases are not in Mitosis (at rest)?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cell Type | Interphase | Prophase | Metaphase | Anaphase | Telophase | % dividing | % at rest |
| Non Cancer Lung |  |  |  |  |  |  |  |
| Cancer Lung |  |  |  |  |  |  |  |
| Non Cancer Stomach |  |  |  |  |  |  |  |
| Cancer Stomach |  |  |  |  |  |  |  |
| Non Cancer Ovary |  |  |  |  |  |  |  |
| Cancer Ovary |  |  |  |  |  |  |  |

Record the % dividing and % at rest on below:

|  |  |  |
| --- | --- | --- |
| **Cell Type** | **% Dividing** | **% At Rest** |
| Noncancerous Lung |  |  |
| Cancerous Lung |  |  |
| Noncancerous Stomach |  |  |
| Cancerous Stomach |  |  |
| Noncancerous Ovary |  |  |
| Cancerous Ovary |  |  |

**Analysis Questions:**

* 1. What trend do you see in the table of percentages?
  2. What final conclusion can you make based on this data?
  3. How do cells divide? What is the division phase of the cell cycle?
  4. What does mitosis have to do with cancer?
  5. What would cause cancer cells to go through mitosis uncontrollably?
  6. Why do normal cells not divide as rapidly as cancerous cells?
  7. How do normal cells become cancerous cells?
  8. How does cancer spread to other areas of the body?