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Perspectives - Summer School 2014

Biomedical Sciences

What is Cancer and How it Happens

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What is Cancer and How It Happens

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Abstract

As we all know, cancer is one of the main causes of death in the human population. This module aims to create a better understanding of what cancer is and which traits a tumour needs to acquire in order to become cancerous. Whilst this topic does not represent the whole of the Biomedical Sciences course, the biology of cancer is one of the main areas studied. Biomedical Sciences focuses on how cells, organs and systems function in the human body. Therefore, in our upcoming tutorial, we will focus on and discuss the mechanics of cancer.

Reading list:

1. <http://www.medicalnewstoday.com/info/cancer-oncology/>
2. <http://www.cancer.gov/cancertopics/cancerlibrary/what-is-cancer>
3. <http://ludwigcenter.stanford.edu/overview/theory.html>

YouTube links:

1. Membrane receptors: <http://www.youtube.com/watch?v=80tn9DVkm-g>
2. Ligands and receptors: http://www.youtube.com/watch?v=2Q1i_7zQGA4
3. Understanding cancer (ignore the ad from Envita Medical Centre):
<http://www.youtube.com/watch?v=Q1DfZGrRmWs>

Of course, it is advisable that you do further reading on topics related to characteristics of cancer and the role of cancer stem cells. If you are feeling ambitious, read (optional)
<http://www.sciencedirect.com/science/article/pii/S0092867400816839> (click "Download PDF" if you can't read the paper on this website).

In order to prepare you for the upcoming tutorial, I have compiled a set of questions for you to answer.

1. What are cellular receptors? Briefly explain their functions.
2. What are the common characteristics of cancer? Describe the differences between a benign and a malignant tumour.
3. What are cancer stem cells? What are the differences between cancer stem cells and other tumour cells?
4. What are the current treatments for cancer? What are their limitations?
5. Do you think ageing causes cancer? Why?