

Cirencester Science and Technology Society

The April meeting was addressed by Dr Richard Clarkson of Cardiff University. The lecture was entitled "Killing cancer from within: when cell death is the cure" and it was delivered to a large number of guests in addition to the regular members.

Cancer is stochastic, i.e. the longer we live the more chance we have of developing the disease. Cancer arises from DNA damage within the nucleus of a cell, caused by free radicals. Each cell has the ability to repair the damage and in fact does so regularly. Recently another mechanism of defence has been identified called apoptosis. This term is used to describe the death of a cell, a harmless and effective method of eliminating rogue cells. This event is thought to happen in more than 100,000 cells every day. If however apoptosis fails and the cell survives, the DNA mutation may lead it to divide out of control.

Dr. Clarkson then identified the 4 types of breast cancer and outlined his research into the development of new methods of treatment based on the cell suicide theory. His first approach was to stimulate an unused apoptosis pathway from outside the cell. This method had partial success but some resistance was found that required suppression and required further research into the effects of suppression.

The second approach was to attempt to re-awaken the cell's own natural response to commit suicide. The human genome project has enabled every gene in the body to be identified. One particular gene known as bcl3 was found to prevent cell death. Working with breast cancer cell cultures, this gene was suppressed and as a result a large proportion of the cells were killed. This effect was clinically relevant and gives hope for the biologists to develop more efficient therapies in the next 15-20 years.

The May lecture on Wednesday 13th at the Royal Agricultural College will be given by the Principal, Professor Chris Gaskell on "Some Epidemic Diseases of Animals". For further information see <http://www.cirensociety.org.uk/> or ring Geoff Richards 01285 651972..