

Outreach activity

Name of Marie Curie's fellowship: Fatemeh Nouri Emamzadh

Supervisor: Prof. David Allsop

Date: March 2011

Subject: Training of high school student

Purpose: familiarization of high school student with both theoretical and practical concepts in molecular biology especially protein analysis

Report:

I met two high school students in March 2011 who were eager to continue their education in the biology field; however they wanted to explore how biology studies are carried out in the laboratory and if this really does match their interests before making their decisions.

I explained to them a bit about biology in general and the importance of making new discoveries, not only for improving human life quality, but also for managing environmental change. Then, I came up with some examples, such as discovering useful vaccines and other type of medicines in the past, and more recently gene therapy and stem cell therapy, thanks to scientists who have spent their lives in research labs.

After this short description I tried to familiarize them with what I do specifically in the lab. I talked about Parkinson's disease in simple words and how a particular protein (α -synuclein) might cause this disease in humans. Then I explained to them how we can identify α -synuclein in human blood plasma using the western blotting method. I showed them how to make an acrylamide gel and how this gel can separate proteins from each other. Then, we loaded some samples on the gels with the students being allowed to do this by themselves. They were quite happy with loading the samples into the gel wells. However, it was a challenge for them as they couldn't recognize where the wells were at the first. However, they eventually managed to load all the samples perfectly. After running the gel, I showed them how we transfer all the proteins from the gel to a nitrocellulose membrane and how we can then detect the protein bands on this membrane. Finally, they took a piece of hypersensitive film, after development of protein bands on it, and wrote a report concerning the experiment. This was a fantastic experience for me as I spent my time with two teenagers who were full of energy and enthusiasm and this motivated me to teach them as much as I could.