Business Skills for Chemists

Intellectual Property Case Study

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Prof. Andrews is a Professor within the School of Chemistry at the University of the East Midlands (UoEM).

During the study of his Ph.D., Mr. Evans tried to synthesise a new drug aimed at selectively killing cancer cells, under the supervision of Prof. Andrews. Upon analysis of the product of this reaction, Mr. Evans noticed that the reaction had not in fact yielded the expected product, but had instead lead to another compound, compound **X**. Compound **X** showed no activity against the cancer cells for which the original compound was designed.

Following the disappointment that compound **X** was inactive against cancer cells, the compound was screened against a wide range of other drug targets available within the Medical School of UoEM by a final year project student, Miss Fall, who was working in the group of Dr. Brown. The results of this drug target screen were very positive identifying several drug targets against which compound **X** was active. This prompted Miss Fall to conduct a literature review to establish other compounds which are active against the newly identified drug targets of compound **X**, which showed that compound **X** may act as a new treatment for HIV/AIDS.

Prof. Andrews has worked in close collaboration for many years with a group in Australia, which is lead by his friend Dr. Cairns, who is interested in retroviral diseases including AIDS. Both Prof. Andrews and Dr. Cairns attended a series of conferences in the USA in 2007, where, over dinner with their wives, they discussed aspects of the work relating to compound **X**.

Mr. Evans found that the exact structure of compound **X** proved difficult to establish. He therefore asked many people within his department to help him determine the correct structure of the compound. Eventually, Dr. Davies, who is one of the other academics within the Chemistry Department of UoEM was able to reveal the structure of compound **X**, which proved particularly challenging to determine exactly.

Some months later, Dr. Cairns contacted Prof. Andrews by e-mail. Part of this email read:

> *"With regard to the 'unknown' HIV/AIDS compound we discussed in L.A., I stumbled across some work in the French Journal of Chemistry from 1998 detailing some compounds which I thought were interesting – just thought you may be interested. The reference is...."*

This e-mail prompted Prof. Andrews to conduct a more through literature review which revealed that the compounds published in the French journal disclosed compounds of similar structure to compound **X**, but that this article did not consider their potential use against HIV/AIDS, or any other biological targets. These compounds were also synthesised by a different method to that used by Mr. Evans.

Prof. Andrews told his patent attorneys that they had found compounds similar in structure to compound **X** in the literature, and gave them the reference. Subsequently the patent attorneys found that the French group had in fact been granted a patent in 2002 for the compounds they had made and their use as a herbicide.

UoEM filed for a provisional UK patent on the 1st of April 2007, which was followed up a year later with an international PCT patent application on the 1st of April 2008. UoEM is now actively seeking to out-license the invention of compound **X** to a pharmaceutical company for development into a new treatment for HIV/AIDS.