

## **SCOTTISH RESEARCH INSTITUTE IN VACCINE BREAKTHROUGH**

A new vaccine, which could be used for the mass immunisation of the general population against killer diseases such as hepatitis B, cancer and HIV, is under development by Scottish scientists.

The Moredun Research Institute, based near Edinburgh, has developed a novel vaccine that could replace all conventional methods, and potentially prevent the world's most serious diseases from ever developing. The Institute has been receiving help from the Defence Diversification Agency (DDA).

The new vaccine developed by Dr. John March and his team at Moredun will give the patient a vaccine made up from genetic instructions (or DNA) rather than using the disease organism itself, which is what all conventional vaccines rely upon.

Dr. March said: "To date, we have produced a vaccine against the serious viral disease hepatitis B. Thanks to the DDA, we're being given access to facilities from the MOD's Defence Science and Technology Laboratory (Dstl) to carry out tests into vaccinating against other diseases.

"Theoretically, there is no reason why the vaccines should not perform equally well against other conditions such as cancer, HIV, malaria and rabies."

He continues: "A significant advantage compared to conventional vaccines is that the DNA vaccine cannot cause the disease it is immunising against. Conventional vaccines are also difficult and expensive to make, require specialist facilities and expertise, and sometimes they fail to work for some diseases.

"However, one of the most important benefits is the new DNA vaccines can be taken orally, either in liquid or tablet form, eliminating the need for needles and injections and all their associated hazards."

The DNA vaccine is placed inside a bacterial virus (known as a bacteriophage) with special genetic instructions so that the vaccinated host can make the vaccine itself by reading this DNA. Thus the host, or patient, actually makes the vaccine.

The scientists at Dstl are interested in the novel research being carried out at Moredun as oral vaccines against disease would be advantageous for UK armed services personnel as well as benefiting the general population.

Dr. March added: "We wouldn't have had the money to carry out the tests necessary to take this technology to the next level. We now have the opportunity to access a new and crucial market and provided the route to the right expertise and facilities they have at Dstl. At the moment, the test results are extremely encouraging."

Find out more at <http://www.mri.sari.ac.uk/>