

Artificial blood could soon be on the way

October 28 2011, by Bob Yirka



Bags of blood collected during donation. Image: Wikipedia.

(Medical Xpress) -- Researchers at Edinburgh University in Scotland have announced that they believe the type of artificial blood they are working on could be ready for testing in humans in as little as two or three years. Made from growing stem cells taken from adult human bone marrow, the blood they create would be of the rare type “O-negative” that some 98% of people in need could use.

Researchers have for years been experimenting with different processes and materials to recreate what nature provides every individual free of charge; a liquid material capable of carrying oxygen and other nutrients through veins and arteries during times of [blood](#) loss, generally due to injury or surgery. The reason the need is so great is because of the great demand. People are injured every day, and develop problems that require surgery to fix, and sometimes the supply of blood from donors isn't enough to keep up with demand, especially in less developed

countries. Plus, there is the always constant threat of infections transferred via blood transfusions, such as HIV, Hepatitis and vCJD, also known as mad cow disease when it infects people.

The team in Edinburgh, led by Professor Marc Turner, has been working on a technique whereby stem cells are taken from the bone marrow of healthy adults and are then grown in a lab into a material that very closely resembles red blood cells grown normally in the human body. They think their process has been sufficiently refined to predict that their results will be ready for clinical trials in as little as two or three years. The next step would be combing their results with the results of others around the world who are working on ways create a form of artificial hemoglobin. If all goes according to plan, the use of such [artificial blood](#) could become a routine part of emergency medical practices in about ten years time.

The problem with the artificial blood, however, is even if all works out as planned it still wouldn't be the perfect replacement everyone really wants. Artificial blood, while clearly a lifesaver in medical emergencies would not likely ever be a permanent replacement for blood; it would still be just a stop-gap type measure. This is why research will continue to focus on a true artificial blood that could in theory completely replace all the blood a person needs and function just as their natural blood does, without any advertise side effects or complications.

That is not to say that a stop-gap temporary blood replacement wouldn't be important. If this new type of artificial blood pans out, millions of lives would be saved the world over. And that certainly, is no small thing.

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