

A Revolutionary Material Stops Bleeding Instantly

Researchers from HKU Li Ka Shing Faculty of Medicine, in collaboration with Massachusetts Institute of Technology (MIT), are the first to use a simple biodegradable liquid to stop bleeding in wounded rodents within seconds. This is a development that could significantly impact medicine.

In performing a surgical operation, doctors now have few effective methods to stop bleeding without causing other damage. It is estimated that as much as 50% of surgical time is required to control bleeding. Current tools used to halt bleeding include clamps, pressure, cauterization, vasoconstriction and sponges.

In their experiments on hamsters and rats, the researchers from HKU and MIT applied the clear liquid containing self-assembling peptides, composed of protein fragments, to open wounds in several different types of tissue in hamsters and rats – brain, liver, skin, spinal cord and intestine. It was found that in almost every one of the cases, bleeding was immediately stopped.

With the astounding discovery, the researchers believe that the time to perform an operation could potentially be reduced by up to 50%. It was foreseen that the material could be of great use during surgery.

The exact mechanism of the solutions' action is still unknown, but the researchers believe the peptides interact with the extra-cellular matrix surrounding the cells. The researchers are confident, however, that the material does not work by inducing blood clotting. Clotting generally takes at least 90 seconds to start, and the researchers found no platelet aggregation, a telltale sign of clotting.