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Scientists create vaccine based on spider silk

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Scientists used synthetic spider silk biopolymers which is a lightweight, biocompatible, non-toxic material highly resistant to degradation from light and heat.



A team of scientists from the universities of Geneva, Freiburg, Munich and Bayreuth has developed spider silk microcapsules capable of delivering vaccine directly to the heart of immune cells.

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Silk microparticles form a transport capsule that protects the vaccine peptide from rapid degradation in the body, and delivers the peptide to the center of the lymph node cells, thereby considerably increasing T lymphocyte immune responses.

One of the limitations of this process, however, is the size of the microparticles: while the concept is in principle applicable to any peptide, which are all small enough to be incorporated into silk proteins, further research is needed to see if it is also possible to incorporate the larger antigens used in standard vaccines, especially against viral diseases.