

Synthetic spider silk strong enough for a superhero

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Spider silk of fantastical, superhero strength is finally speeding toward commercial reality—at least a synthetic version of it is. The material, which is five times stronger than steel, could be used in products from bulletproof vests to medical implants, according to an article in *Chemical & Engineering News* (C&EN). C&EN is the weekly news magazine of the American Chemical Society.

Alex Scott, a senior editor at C&EN, notes that [spider silk](#)'s impressive strength has been studied for years, and scientists have been trying to make a synthetic version of the super-strong protein in the lab. For other simpler proteins, scientists have been able to insert relevant genes into bacterial DNA, essentially turning the microorganisms into protein factories. But spider silk has not been so easy to churn out. In fact, the challenge has caused big name companies including DuPont and BASF to bow out after several years of investment.

Now, small firms just might have found the right genetic tricks, the article states. They are coaxing not just genetically engineered bacteria but also goats, transgenic silkworms and even alfalfa to produce multiple different versions of synthetic spider and spider-silkworm silks. One company has even taken their iteration to the market—though theirs is a non-fiber kind of spider silk for use in cosmetics. So far, commercialization has been on a modest scale. But the research pipeline for synthetic spider silk is very active, and scientists expect that production is right on the verge of scaling up.

More information: cen.acs.org/articles/92/i9/Spi...ommercial-Entry.html

Provided by American Chemical Society

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