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# Current Updates in Life Sciences



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# A MULTIFUNCTIONAL BIOMATERIAL: SPIDER SILK

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## **ABSTRACT:**

Researchers are always looking for new materials that are stronger as well as comfortable than materials currently in use and trying to develop the better one. Spider silk is nature's high performance fiber that outperforms the best man-made materials by displaying extraordinary mechanical properties. Man often takes pride in our ability to create materials that are superior to ones created by nature. Yet some of the materials that nature creates out form everything designed by the human mind. Spider silk is one of them. Due to its superior qualities, spider silk has wide range of opportunities for medical, defense as well as in industrial sector. I reviewed the nature and outstanding properties of spider silk and applications of spider silk in various fields. Successful large scale production of recombinant spider silk protein with inexpensive bioreactors and development of a proper spinning methodology to produce synthetic spider silks will open a new gate in various sectors.

**Keywords:** Spider silk, Biopolymer, Silk production.

## **Introduction:**

Spider is a wonderful tiny arachnid which adds beauty to nature. Spider communities dominate the world's tropical, subtropical and almost all conceivable habitats surviving. According to World Spider Catalog (2020), 48927 valid spider species from 4189 genera are known from the world. Spiders are the preeminent silk craftsmen among arthropods and are best known for producing webs which is their beautiful and impressive house. Spider shows unique ability to produce silken threads of various kinds throughout their life span. Spiders depends on their silk for variety of life activities and functions, such as- shelter, prey capture, storing food, as a food, dispersal, guideline, safety lines, retreat, reproduction, formation of egg sac,