SPIDROINS FROM THE BRAZILIAN SPIDER NEPHILENGYS CRUENTATA (ARANEAE: TETRAGNATHIDAE)

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Spiders are able to produce up to seven different kinds of silk, each one for a specific biological function. Spider silks are also known for their unique mechanical properties. Because of these impressive mechanical properties, these proteins provide an important set of material options in the fields of controlled release, biomaterials and scaffolds for tissue engineering. The production of new materials with similar attributes led to an advance in the studies about spidroin, the major protein of spider dragline silk. Using expression sequence tags, we were able to identify four spidroins, produced by major ampullate, minor ampullate, flagelliform and tubuliform silk glands from the Brazilian spider *Nephilengys cruentata* (Araneae: Tetragnathidae). The new protein sequences showed great similarity to other spidroins previously described, with high content of alanine and glycine amino acids due to the presence of highly repetitive motifs (polyAla, (GGX)n, (GPGGX)n). Similarities among spidroins sequences from different glands were also observed with the notable exception of tubuliform spidroin, which presents a unique complex amino acid composition with high amounts of serine and low amounts of glycine.