

Structural Investigation on Some Silk (Dragline, Hiding and Egg Coccon) Samples Weaved by Different Species Living in Turkey

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Spiders produce a variety of high performance structural fibres with mechanical properties unmatched in the native world and comparable with the very best synthetic fibres produced by modern technology [1-2]. X-ray diffraction and FT-IR spectroscopy were used to investigate the molecular structure of spider silks weaved by *Salticidae Heliophonus flavipes*, *Titanocidae nurscia albomaculate*, *Agelera lambrinitica*, *Cheiraconthium erralicum*. Silk samples were collected from the natural habitats of the species (Near Salt Lake / Őereflikoçhisar, İvriz Dam / Ereĝli-Konya, Karataŝ Lake/ Burdur) in Turkey [3]. Egg coccon and hiding silk samples of *Titanocidae Nurscia albomaculate* were investigated separately to find the crystallization difference of alanine and glycine rich regions in these structures. Serine (an amino acid) is also found in the structure of egg coccons.

X-ray diffraction and infrared spectroscopy results indicated that the structural differences exist in the samples. The crystallographic planes in the X-ray patterns were investigated to find the effect of alanine and glycine rich crystalline regions in the structures.

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Acknowledgment

This work was supported by TUBİTAK (TBAG- 107T017).