

Supplementary Materials: Comprehensive Proteomic Analysis of Spider Dragline Silk from Black Widows: A Recipe to Build Synthetic Silk Fibers

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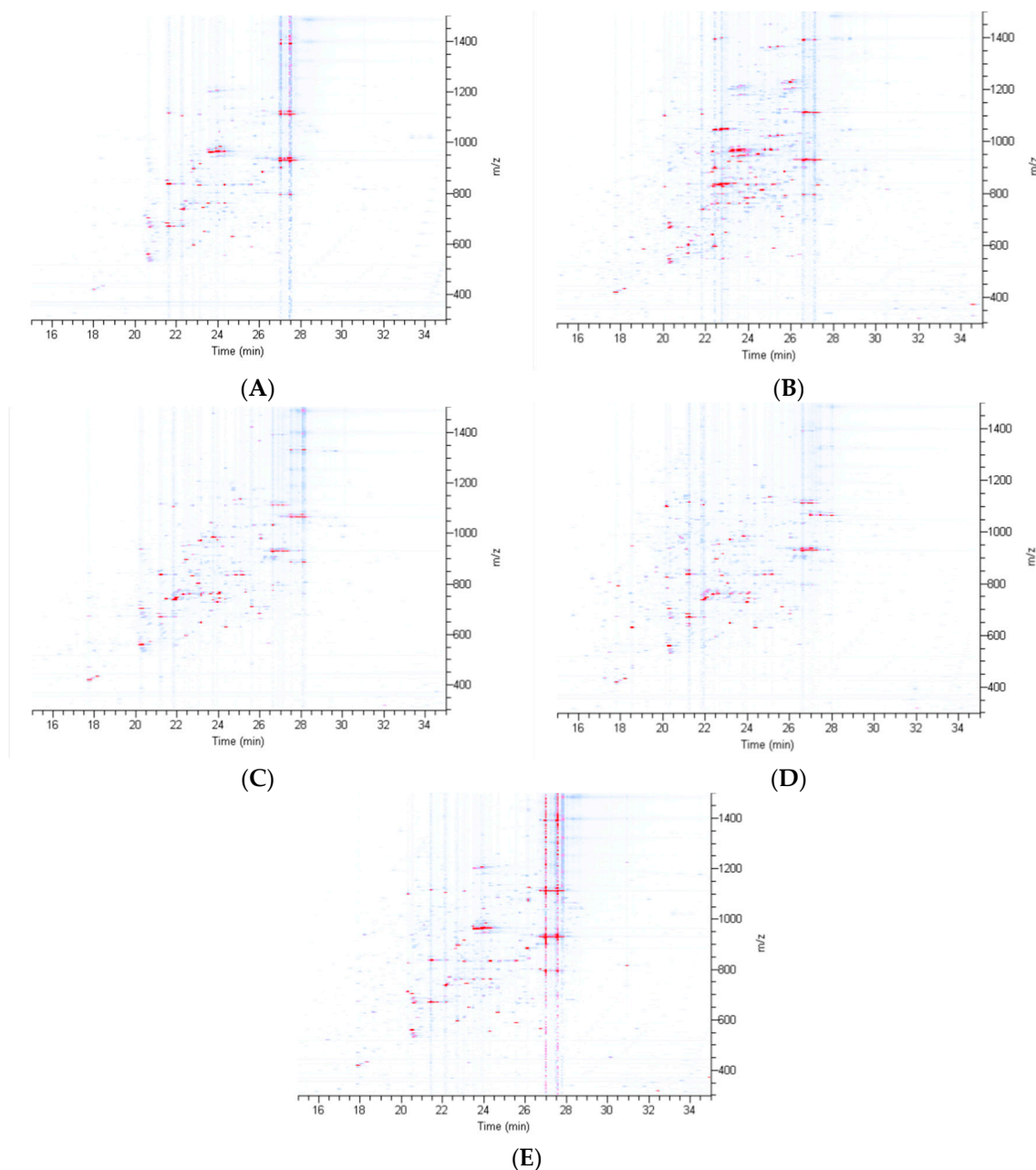


Figure S1. Density map of in-solution tryptic digestion products obtained from dragline silk treated with different chemical solvents. The X-axis reveals the retention time (min) for the precursor ions eluted during nano-LC MS analysis, while the Y-axis shows the m/z values ($z = +2$ to $+8$); (A) GdnHCl; (B) GITC; (C) urea; (D) LiBr; (E) HFIP.

Accession #	GdnHCl	LiBr	Urea	GITC	HFIP	
A6YIY1	Present	Present	Present	Present	Present	MaSp1
A6YIY0	Present	Present	Present	Present	Present	MaSp2
K7YP04	Present	Present	Absent	Present	Present	AcSp1
A9QE53	Present	Absent	Absent	Present	Present	AcSp1-like
C7T5D2	Present	Absent	Absent	Absent	Present	PySp1
Custom	Present	Absent	Absent	Present	Present	CRP1
E7D1S5	Present	Present	Present	Present	Present	CRP2
E7D1H3	Present	Absent	Absent	Absent	Present	CRP4
E7D181	Present	Absent	Absent	Present	Present	CRISP3
E7D1Z1	Present	Absent	Absent	Absent	Present	Fasciclin
E7D1I1	Present	Absent	Absent	Absent	Absent	Alpha B-crystallin
O01717	Absent	Present	Absent	Absent	Absent	Alpha-2 macroglobulin
J7G653	Absent	Absent	Present	Absent	Absent	Aggregate gland silk factor 1
J7FXP9	Absent	Present	Absent	Absent	Absent	Aggregate gland silk factor 2
B7SVM7	Absent	Present	Absent	Absent	Absent	Aggregate spider glue 2
E7D1Q9	Absent	Absent	Absent	Absent	Present	Cystatin
Q52P73	Absent	Present	Absent	Absent	Absent	Egg case silk protein-1
E7D174	Absent	Present	Absent	Absent	Absent	Gamma-glutamyltransferase 1
E7D1W6	Absent	Absent	Present	Absent	Absent	p-23-like protein
E7D1B0	Absent	Absent	Absent	Absent	Present	Ribosomal protein L4
E7D1H9	Present	Present	Present	Present	Present	Uncharacterized protein
E7D1N6	Absent	Present	Absent	Absent	Absent	Uncharacterized protein
E7D1N5	Absent	Present	Absent	Absent	Absent	Uncharacterized protein
E7D1V8	Absent	Present	Absent	Absent	Absent	Uncharacterized protein
E7D1V7	Absent	Present	Absent	Absent	Absent	Uncharacterized protein
E7D1V0	Absent	Present	Absent	Absent	Absent	Uncharacterized protein
E7D1M7	Absent	Present	Absent	Absent	Absent	Uncharacterized protein
J7FZ48	Absent	Absent	Absent	Absent	Present	Uncharacterized protein


Present 
 Absent 

Figure S2. Chart of presence (dark) or absence (light) of proteins that are predicted within dragline silk using all 5 solvents. Accession numbers are shown on the left and names of the proteins on the right.

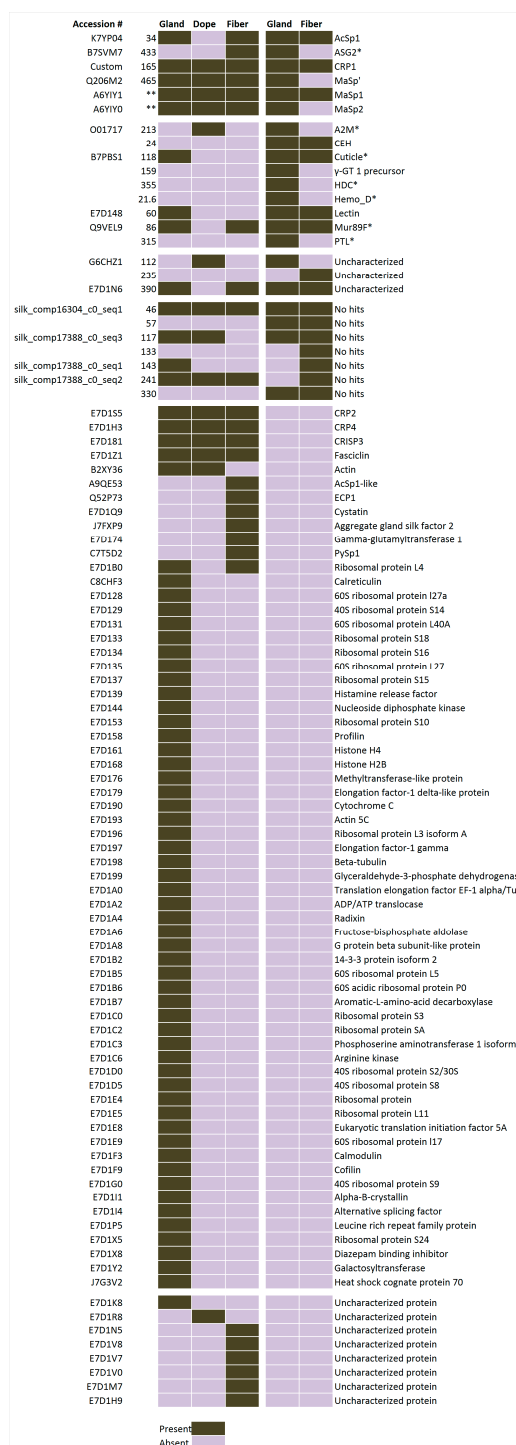


Figure S3. Chart of presence (black) or absence (light purple) of proteins that are predicted within the MA gland, dope and fiber. Two proteomic data sets are available from *L. hesperus* for comparative purposes. The left panel (gland, dope, and fiber) were conducted with an Orbitrap Fusion™ Tribrid™ mass spectrometer with 5 different solvent treatments and 3 modes of peptide ion dissociation (CID, HCD, and ETD), while the right panel (gland, fiber) was conducted using a LTQ Orbitrap Velos™ mass spectrometer and one mode of ion dissociation (CID) [9]. Accession numbers, scaffolding IDs, and SSTs are listed on the left [9]. Custom indicates the sequence was added into the database manually. No hits indicates the sequences do not match anything in the databases. * Indicate some peptide sequences that were derived from SSTs that are uncharacterized in *L. hesperus*, but are thought to be homologous to known proteins in different species. ** Indicate protein types with more than one predicted protein [9].