

Supplementary material:

Table 1: The structural variation present in *D. melanogaster*, *A. tabida* and *B. malayi* shows that the number of random coils, helices and turns is greater in *B. malayi* than in *D. melanogaster* or *A. tabida*.

	<i>D.melanogaster</i>	<i>A.tabida</i>	<i>B.malayi</i>
α -Helix (Hh)	50 is 21.10%	27 is 13.78%	74 is 26.33%
Extended strand(Ee)	60 is 25.32%	65 is 33.16%	56 is 19.93%
β -turn(Tt)	14 is 5.91%	15 is 7.65%	21 is 7.47%
Random coils (Cc)	113 is 47.68%	89 is 45.41%	130 is 46.26%

Table 2: The active site amino acids present in WSP *D. melanogaster*, *B. malayi* and *A. tabida*

WSP in <i>D.melanogaster</i>	WSP in <i>A.tabida</i>	WSP in <i>B.Malayi</i>
ILE-74, GLY 76, PHE 80,	ASP74, ASN77, ALA 80,	TYR158, TYR159,
TYR82, LYS83, ASP85,	VAL83, SER87, LEU89,	TRP160, LYS161,
PHE 108, ILE 114, ASP116,	ALA113, ALA114,	ASN162, ASP163,
THR119	ILE116, VAL124	SER166, TYR170,
		LYS195.

Table 3: The biophysical properties of WSP in *D. melanogaster*, *B. malayi* and *A. tabida*. The arrangement of C-terminal and N-Terminal regions in WSP complex.

	N-Terminal	C-Terminal
WSP in <i>D.melanogaster</i>	80.747 A°	72.724 A°
WSP in <i>A.tabida</i>	80.747 A°	77.313 A°
WSP in <i>B.malayi</i>	80.747 A°	69.199 A°