

Supplementary Materials for

Genetic architecture and sex-specific selection govern modular, male-biased evolution of *doublesex*

Saurav Baral, Gandhimathi Arumugam, Riddhi Deshmukh, Krushnamegh Kunte*

*Corresponding author. Email: krushnamegh@ncbs.res.in

Published 8 May 2019, *Sci. Adv.* **5**, eaau3753 (2019)

DOI: 10.1126/sciadv.aau3753

The PDF file includes:

Fig. S1. Protein structural conservation in various domain and sex-specific regions of *Dsx* across insect orders.

Legends for tables S1 to S3

Other Supplementary Material for this manuscript includes the following:

(available at advances.sciencemag.org/cgi/content/full/5/5/eaau3753/DC1)

Table S1 (Microsoft Excel format). Species, GenBank accession numbers, and exons of *dsx* sequences used in this study.

Table S2 (.txt format). Regression log file.

Table S3 (Microsoft Excel format). Sites under episodic and pervasive positive selection in different insect groups and specific lineages.

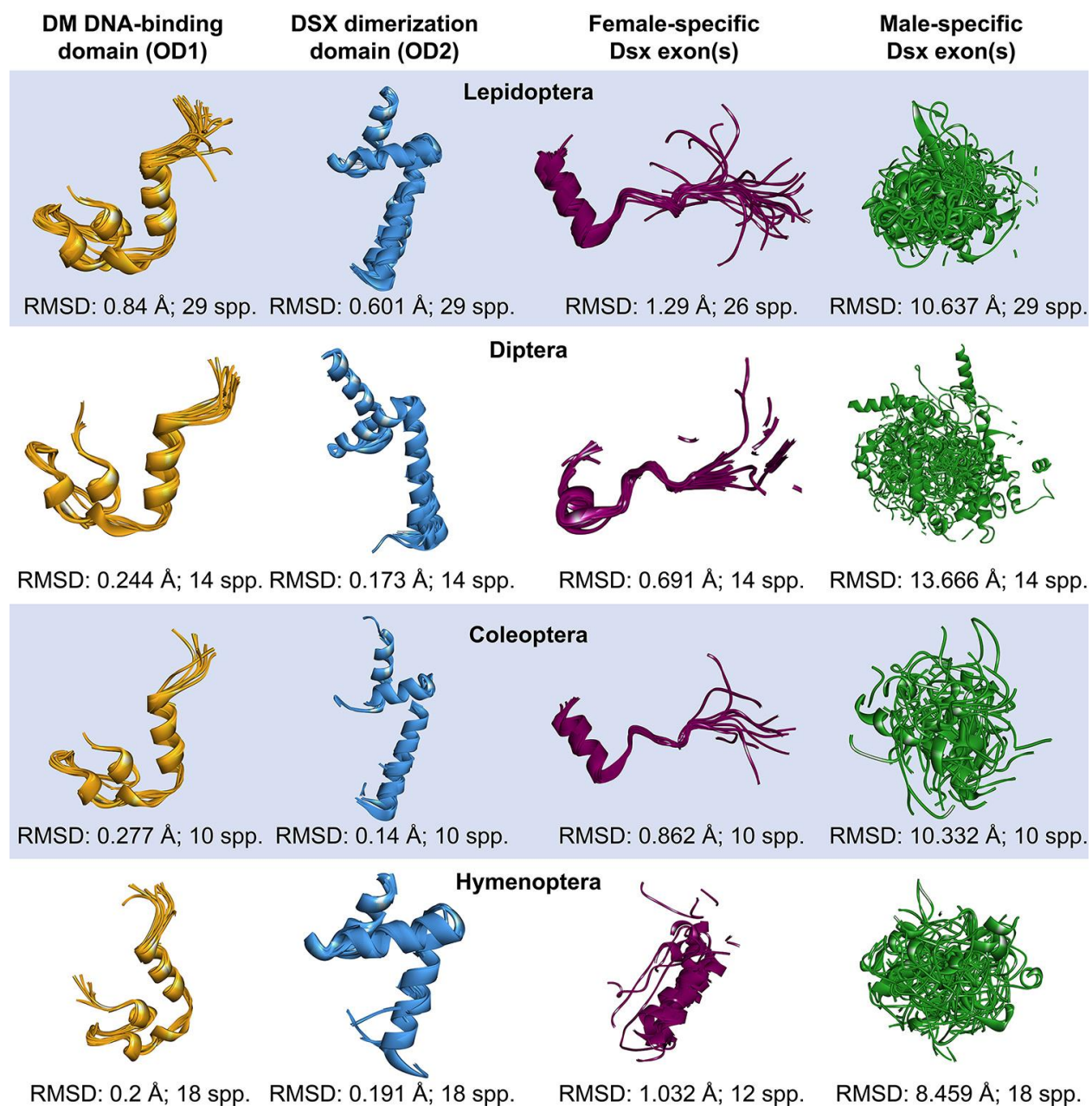


Fig. S1. Protein structural conservation in various domain and sex-specific regions of Dsx across insect orders. Different orders are represented as rows and superimposition of protein structures in each homologous genic region are shown in columns. Root-mean square deviation (RMSD) as a measure of structural deviation between protein backbones, and the number of species used for protein modeling, are also shown. Since protein structures are relatively similar in sister species, only representatives of each genus were chosen for this comparison (see Table S1 for the list of species used for modeling).

Table S1. Species, GenBank accession numbers, and exons of *dsx* sequences used in this study. See Excel file, 'TableS1_SpeciesSequenceDetails.xlsx'.

Table S2. Regression log file. Log file for beta-regression using the formula ($dN \sim \text{Species} + \text{Region}$). p-values for each component that contributes to non-synonymous substitution rate (dN) and the pseudo-R squared values are provided. Different orders are separated in different sections. See text file, 'TableS2_Regression.txt'.

Table S3. Sites under episodic and pervasive positive selection in different insect groups and specific lineages. All sites under positive selection were outside the domain and other overall conserved regions of *dsx*. See Excel file, 'TableS3_PervasiveAndEpisodicSelection.xlsx'.