

Supplementary Table 1. Conservation of JHAMT residues critical for interactions with the substrates

<i>A. aegypti</i>	Q-14	D-41	D-69	V-70	I-95	W-120	L-146	I-151	I-154	Y-155	L-158	S-176	Y-178	V-221	V-224	Activity
<i>D. melanogaster</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Yes for FA and JHA
<i>D. sechellia</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Not tested
<i>D. erecta</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Not tested
<i>D. yakuba</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Not tested
<i>D. persimilis</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Not tested
<i>D. pseudoobscura</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Not tested
<i>D. ananassae</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	I	Not tested
<i>D. willistoni</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	F	I	Not tested
<i>D. virilis</i>	=	=	=	I	=	=	=	V	V	=	=	=	L	=	=	Not tested
<i>D. mojavensis</i>	=	=	=	=	=	=	=	=	V	=	=	=	L	=	I	Not tested
<i>D. grimshawi</i>	=	=	=	=	=	=	=	V	V	=	=	=	L	=	I	Not tested

=: Identical amino acid. Letters show conserved substitutions. Shaded boxes indicate substitutions not present in any of the three species whose activities have been experimentally tested (*D. melanogaster*, *B. mori* and *T. castaneum*).

Accession numbers are: *D. melanogaster* (gi|24584607|), *D. pseudoobscura* (gi|125986291|), *D. sechellia*: GI:195343168), *Drosophila yakuba* (gi|195483745|), *D. erecta* (gi|194884267|), *D. ananassae* (gi|194766583|), *D. persimilis* (gi|195148723|), *Drosophila willistoni* (gi|195437877|), *Drosophila grimshawi* (gi|195063762|), *Drosophila virilis* (gi|195387143|), *Drosophila mojavensis* (gi|195115328|).