

Disruption of aminergic signalling reveals novel compounds with distinct inhibitory effects on mosquito reproduction, locomotor function and survival

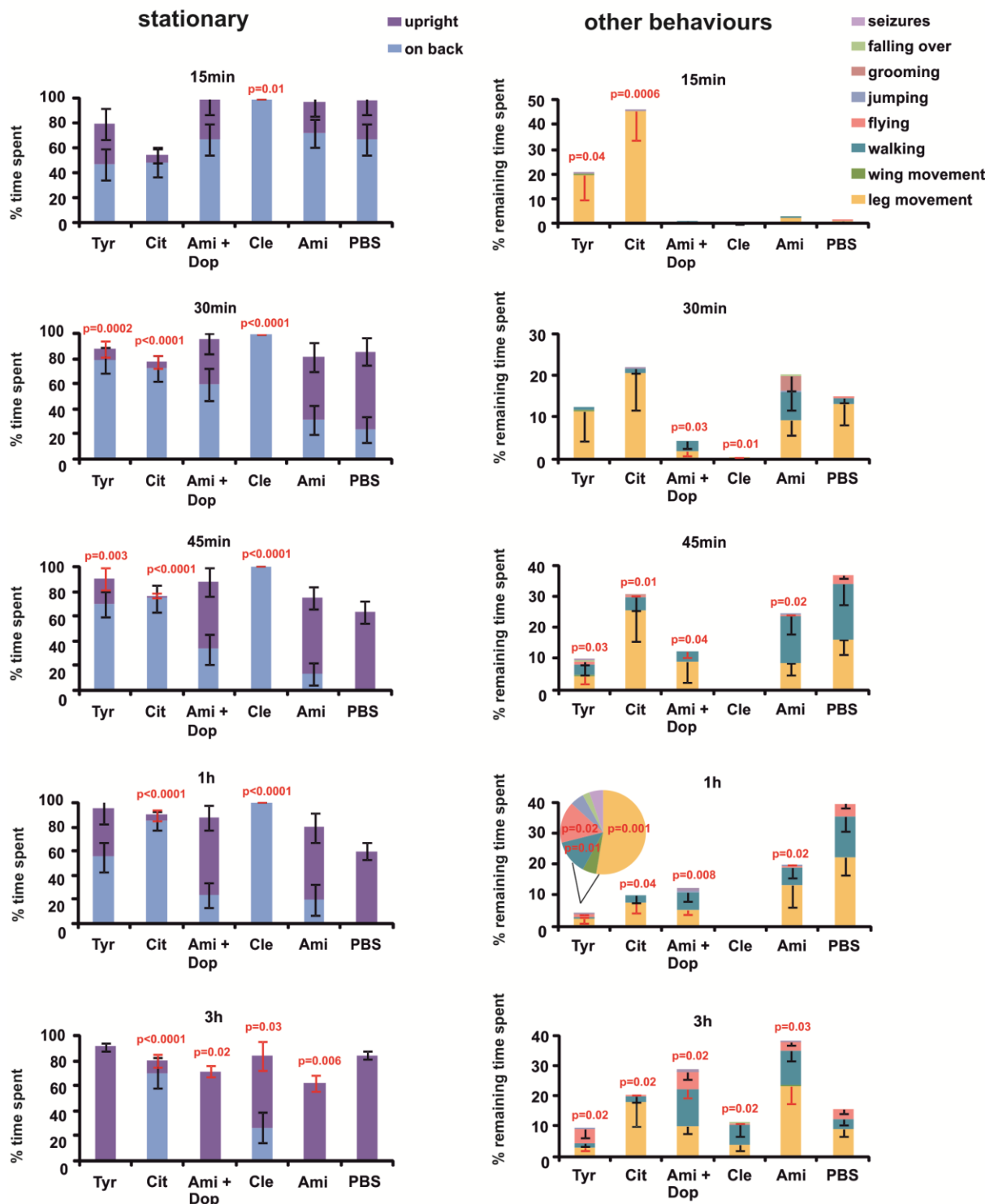
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Supplementary information

Supplementary Figure S1



Supplementary Figure S1: Effects of aminergic compounds on mosquito behaviour profiles. Females were injected with either PBS (control), 80mM tyramine (Tyr), 10mM citalopram (Cit), 10mM amitriptyline (Ami), 10mM amitriptyline + 10mM dopamine (Ami +Dop) or 10mM clenbuterol (Cle) and placed in a cup lying on their back. Using video recording we monitored the behavioural responses of single mosquitoes (total N=15 for 3

experiments) at various time points (15min, 30min, 45min, 1h and 3h) for a 1 minute period after injection. The data shown represent the mean \pm SEM time (in %) a female spent for stationary (left panels: on back, upright) or any other type of behaviour (right panels). All combined behaviours add to a total of 100%. The different behaviour types were compared between PBS and compound using a Student's t-test (significance was indicated by p-value <0.05 and a red error bar).

Supplementary Table S1: Genbank accession numbers of aminergic receptors in order as illustrated in Figure 2.

ID	Genbank accession number	description	species
Dm5HT1	CAA77570.1	5HT-dro2A receptor (serotonin receptor)	<i>Drosophila melanogaster</i>
AGAP011481	EAA13071.5	GPR5HT1B (serotonin receptor)	<i>Anopheles gambiae</i>
HsHTR1A	NP_000515.2	serotonin receptor 1A	<i>Homo sapiens</i>
HsHTR7	NP_000863.1	serotonin receptor 7, isoform a	<i>H. sapiens</i>
Dm5HT7	NP_524599.1	serotonin receptor 7	<i>D. melanogaster</i>
AGAP004223	EAA08564.1	GPR5HT7 (serotonin receptor 7)	<i>An. gambiae</i>
DmTyR1	NP_524419.2	octopamine-tyramine receptor, isoform a	<i>D. melanogaster</i>
AGAP002519	EAA07468.3	GPRTYR (tyramine receptor)	<i>An. gambiae</i>

DmOA1	NP_732541.1	octopamine receptor in mushroom bodies, isoform a	<i>D. melanogaster</i>
AGAP000045	EAA06361.5	GPROAR1 (octopamine receptor 1)	<i>An. gambiae</i>
Hsa2A	NP_000672.3	alpha-2A adrenergic receptor	<i>H. sapiens</i>
DmOA3S	NP_001262714.1	CG18208, isoform c	<i>D. melanogaster</i>
AGAP000606	EAL41154.4	GPRNNA19 (GPCR class a orphan receptor 19)	<i>An. gambiae</i>
Hsa1	NP_000671.2	alpha-1A adrenergic receptor isoform 1	<i>H. sapiens</i>
AGAP000667	EAA06824.5	GPRDOP2 (dopamine receptor 2)	<i>An. gambiae</i>
DmDop2	NP_733299.1	dopamine receptor 2, isoform a	<i>D. melanogaster</i>
AGAP002886	EAA08140.5	GPRNNA2	<i>An. gambiae</i>
AGAP002888	EGK96731.1	GPRNNA3	<i>An. gambiae</i>
DmOA2B	NP_651057.1	octopamine receptor 2, isoform a	<i>D. melanogaster</i>
Hsβ1	NP_000675.1	beta-1 adrenergic receptor	<i>H. sapiens</i>
HsD1	NP_000785.1	D(1A) dopamine receptor	<i>H. sapiens</i>

DmDop1	CAA54451.1	dopamine receptor	<i>D. melanogaster</i>
AGAP004613	EAA10574.3	GPRDOP1	<i>An. gambiae</i>
AGAP013324	EGK96306.1	G-protein coupled receptor GPCR	<i>An. gambiae</i>
DmTyR2	NP_650652.1	tyramine receptor	<i>D. melanogaster</i>
AGAP004034	EAA05356.5	GPRNNA4	<i>An. gambiae</i>
DmTyR3	NP_650651.1	tyramine receptor 2, isoform a	<i>D. melanogaster</i>
DmDop3	NP_001014758.1	dopamine 2-like receptor, isoform C	<i>D. melanogaster</i>
AGAP004453	EAA09118.4	GPRDOP3	<i>An. gambiae</i>
HsD2	NP_000786.1	D(2) dopamine receptor isoform long	<i>H. sapiens</i>
HsHTR2A	NP_000612.1	serotonin receptor 2A isoform 1	<i>H. sapiens</i>
Dm5HT2	NP_524223.2	serotonin receptor 2, isoform a	<i>D. melanogaster</i>
AGAP002232	EAA03698.2	GPR5HT2A (serotonin receptor 2)	<i>An. gambiae</i>