

Table S1. Candidate genes required for mechanical nociception responses

CG number	Synonym	RNAi line	Ballistic Response (%)	p-value	Gene Ontology	Required for thermal nociception	Predicted mouse orthologs
Hypersensitive candidate: <i>md-GAL4</i>							
CG31323	CG31323	GD v45064	64.9 ± 7.8	0.0165 p<0.05	Unknown		
CG8282	<i>Sorting nexin 6 (Snx6)</i>	GD v24275	61.4 ± 7.3	0.029 p<0.05	Phosphatidylinositol-3-phosphate binding; Protein transporter activity; Retrograde intracellular transport, endosome to golgi		Snx6 ^{df} , Snx32
CG32592	<i>highwire</i>	GD v26998	59.3 ± 6.7	0.035 p<0.05	Ubiquitin-protein ligase activity		<i>Mycbp2^f</i>
Insensitive candidates: <i>md-GAL4</i>							
CG7646	CG7646	GD v35740	21.4 ± 6.3	0.0045 p<0.01	Calcium ion binding		<i>Rcvrn</i>
CG33202	<i>defective proboscis extension response 11 (dpr11)</i>	GD v23243	23.7 ± 6.9	0.0137 p<0.05	Immunoglobulin (Ig) family, membrane protein	Yes ^{a,c}	
CG4394	<i>TNF-receptor-associated factor-like (TRAF3)</i>	GD v34836	25.0 ± 6.8	0.018 p<0.05	Signal transduction; Defense response		
CG4398	CG4398	KK v104199	34.0 ± 6.7	0.028 p<0.05	Dynein-binding, microtubule organization	Yes ^{a,c}	<i>Pafah1b1^{df}</i>
CG6220	CG6220	KK v108909	33.3 ± 7.0	0.03 p<0.05	Transcription factor activity; RNA polymerase II transcription factor binding		<i>Cdc73^d</i>
CG4771	<i>vreteno (vret)</i>	KK v101134	32.4 ± 8.0	0.038 p<0.05	regulation of gene silencing by RNA; piRNA metabolic process; RNA-mediated negative regulation of transposition; oogenesis; germarium-derived egg chamber formation.		
CG4741	CG4741	GD v51510	27.0 ± 7.3	0.038 p<0.05	Unknown		
CG44122	<i>Piezo</i>	GD v25781	26.5 ± 7.6	0.039 p<0.05	Mechanically gated ion channel activity	Yes ^a	<i>Piezo2^{d,e,f}</i> , <i>Piezo1</i>
Hypersensitive candidate: <i>ppk-GAL4</i>							
CG2204	<i>G protein α o subunit (Gao)</i>	GD v19124	73.5 ± 7.6	0.009 p<0.01	G-protein beta/gamma-subunit complex binding; G-protein-coupled receptor binding; GTPase activity; signal transducer activity	Yes ^b	<i>Gnao1^{d,e,f}</i>
CG10806	<i>Na⁺/H⁺ hydrogen antiporter 1 (Nha1)</i>	KK v110016	70.3 ± 7.5	0.009 p<0.01	Sodium:proton antiporter activity; Transmembrane transport		<i>Slc9b1</i>
Insensitive candidates: <i>ppk-GAL4</i>							
CG8440	<i>lissencephaly-1 (Lis-1)</i>	KK v106777	19.4 ± 7.1	0.008 p<0.01	Dynein-binding, microtubule organization	Yes ^{a,c}	<i>Pafah1b1^{df}</i>
CG1152	<i>glucose dehydrogenase (Gld)</i>	GD v38040	25.6 ± 6.7	0.008 p<0.01	Glucose metabolism; oxidation-reduction process	Yes ^c	<i>Chdh</i>
CG33202	<i>defective proboscis extension response 11 (dpr11)</i>	GD v23243	22.6 ± 7.5	0.008 p<0.01	Immunoglobulin (Ig) family, membrane protein	Yes ^{a,c}	
CG8297	CG8297	GD v46760	24.2 ± 7.5	0.011 p<0.05	Unknown		<i>Txndc15</i>
CG7649	<i>Meltrin</i>	GD v8394	23.3 ± 7.7	0.011 p<0.05	Metalloendopeptidase activity		<i>Adam12</i>
CG10914	CG10914	KK v108735	26.1 ± 6.5	0.021 p<0.05	GTP binding		<i>Noa1</i>
CG1715	<i>lethal (3) 03670</i>	GD v52253	28.6 ± 7.6	0.030 p<0.05	Unknown		<i>Chchd3</i>
CG4840	<i>centrosomin's beautiful sister (cbs)</i>	GD v21959	30.0 ± 7.2	0.033 p<0.05	Protein homodimerization activity; ADP-ribosylation factor binding; Rab GTPase binding.		<i>Golga1^f</i>
CG12530	<i>Cdc42</i>	JF02855	10.8 ± 5.1	0.045 p<0.05	Rho GTPase activity		<i>Cdc42^d</i>
CG7297	<i>polypeptide GalNAc transferase 8 (pgant8)</i>	GD v8377	30.6 ± 7.7	0.046 p<0.05	Polypeptide N-acetylgalactosaminyltransferase activity		<i>Galnt5^{df}</i> , <i>Galnt15</i>

a insensitive in larval thermal nociception assay in Honjo et al. 2016

b hypersensitive in larval thermal nociception assay in Honjo et al. 2016

c required for adult noxious thermal heat avoidance in Neely et al. 2010

d genes enriched in nociceptive lineage neurons compared to proprioceptive lineage neurons in Chiu et al. 2014

e genes enriched in nociceptors compared to unpurified DRG neurons in Thakur et al. 2014

f genes enriched in nociceptors compared to cortical neurons in Thakur et al. 2014