

**Table S1.** Primers used in one or two rounds of PCR amplification

Gene category	Gene Name	PCR round	Hybridization temperature (°C)	Forward primer	Reverse primer
Insecticide target genes	Ace 1	1 <sup>st</sup> round	66.5	GTATGAACTCCTGTTGACAAGAAGTGGC	GGAATGCCAGCTTTGGGAAGAGGTG
		2 <sup>nd</sup> round	60.8	TCCTGTTGACAAGAAGTGGCG	ATGCCAGCTTTGGGAAGAGGTG
	Ace 2	1 <sup>st</sup> round	67.5	CGAATATTTCCCAGGCTTCTCCG	ACAAGAGTGGAAGTGGGAGAAGGATTTGG
	nAChR $\alpha$ 1	1 <sup>st</sup> round	53.7	TCAAGCCACAAGCAATCG	TCCATAACGATCCTCTGATC
		2 <sup>nd</sup> round	63.5	CCACAAGCAATCGCCGCATC	CGATCCTCTGATCGCAGACGTC
	nAChR $\alpha$ 3	1 <sup>st</sup> round	70	TTCCACCCACAACGCCAACAG	ATTGCCATTGCCATTGCCATTGCC
		2 <sup>nd</sup> round	60	CCACAACGCCAACAGGATCATG	ATTGCCATTGCCATTGCCATTGCC
	nAChR $\beta$ 2	1 <sup>st</sup> round	43	AGATTATTCCAGCTAGATGTC	GAAATGTAGCGAAGGTACGA
		2 <sup>nd</sup> round	69.7	AGATGTCCTGGAGCAACCTGTG	GCGAAGGTACGAATTGAGTTCCG
	GluCl iso1	1 <sup>st</sup> round	57.5	CCACATAGTTCCACCATGCT	ACTTGATAGATGGGTGGGTT
		2 <sup>nd</sup> round	66.5	ACATAGTTCCACCATGCTGTGGTATG	GATGGGTGGGTTTTGAGATCATAGTC
	GluCl iso2	1 <sup>st</sup> round	59.2	CCACATAGTTCCACCATGCT	ACTTGATAGATGGGTGGGTT
		2 <sup>nd</sup> round	63.5	ACATAGTTCCACCATGCTGTGGTATG	GATGGGTGGGTTTTGAGATCATAGTC
	Para F1	1 <sup>st</sup> round	58.5	CCCATAAACCCACAAACCCCTTC	CACCCAGTTTTTCATGCGTAAGTTC
		2 <sup>nd</sup> round	63.5	TTGACGTCTTCGACGTCGAGCC	CACCCAGTTTTTCATGCGTAAGTTC
	Para F2	1 <sup>st</sup> round	66.5	GGATCATCACGATATGATAAGGGACATGGC	GCTAAGCGTATCTTCAATAATCGAGCCAG

	Para F3	1 <sup>st</sup> round	59.2	GATCTCGAAGAAGAAGAAGGCG	AGCGCGTTTCAGGACGGATC
		2 <sup>nd</sup> round	70	CTCGAAGAAGAAGAAGGCGAAGAGC	GTTTCAGGACGGATCGAGACGG
	RyR	1 <sup>st</sup> round	60.8	GGATGACTCGAATTGCAGCCTATACTC	CAGCATCTTCAAACGATTGAGTGAG
Detoxification genes	CCE B	1 <sup>st</sup> round	59.2	CTGGATCGCTTCGGTTCAAG	GGCAATCCTCGTTTCCATCC
	CCE E	1 <sup>st</sup> round	60	AGCGAAGAAAATCAGCCGTG	CTTCCGATCTGTTTATTTAAGTTTAC
		2 <sup>nd</sup> round	62	GAAGAAAATCAGCCGTGTTTCGTAATG	CTGTTTATTTAAGTTTACAATTCGTCAGG
	CYP4G189	1 <sup>st</sup> round	60	GATCATTCAAGTGGCCTCATTGATAAG	CGATTCTATTCCATTGAGCTAGAAGG
		2 <sup>nd</sup> round	66.5	CATTCAAGTGGCCTCATTGATAAG	CTATTCCATTGAGCTAGAAGGAGG
	CYP6NP1	1 <sup>st</sup> round	63.7	ATCATTCCGCCGCATTGAACAGT	CCTGGAATCGAGTCTGGCACTTG
		2 <sup>nd</sup> round	60	CCGCCGCATTGAACAGTTTAACC	GAATCGAGTCTGGCACTTGG
	CYP6NQ1 N-ter	1 <sup>st</sup> round	62	GCACTAACTATGTTACTGTGGATTC	CTCGATTCACTTCTCGATCC
		2 <sup>nd</sup> round	60	GCACTAACTATGTTACTGTGGATTC	GGAGGATACTTCCGCAATGTTTC
	CYP6NQ1 C-ter	1 <sup>st</sup> round	62.5	TCATAGCGTTCTCGAATTGAATGAG	CGTAGGTACCGGATACTGGATAC
	CYP6NW1	1 <sup>st</sup> round	63.5	AACCGCGAGACCAATGGATCTCC	GCGCATGCGCACATTTATCCTTTC
	GST D	1 <sup>st</sup> round	55.6	ACTGCACACGCGTCCATTG	TCCATTTAGAGCACAGAAGTGTAGG
		2 <sup>nd</sup> round	60	GCACACGCGTCCATTGGAATATC	GAGCACAGAAGTGTAGGTATTATTG
Control genes	Actin	1 <sup>st</sup> round	58.5	GCTCTTCCGATCTCCTACAGCAC	GTCTTTCTGCATAAACTTTTGGTGG
	EF1alpha	1 <sup>st</sup> round	66.5	GGGTACAAAGGAGCAATCGGC	GAAAGAGGGAGGAGTCTACAGCTC
	GAPDH	1 <sup>st</sup> round	63.5	CATTAACCTTGCCGTGTCATCAGCC	GTTCTTACAGTGAGTGGGCTTACTGC

**Table S2.** Primers used in quantitative real-time PCR

Gene Category	Gene Name	Forward Primer	Reverse Primer	Amplicon size (bp)	PCR efficiency (%)
Insecticide target genes	Ace 1	CACGAGGTGGTCAGATGTCT	TGGGGATTTCGAGGATCATGG	86	101
	nAChR $\alpha$ 1	GGATTTTCACGGTGGCTTGT	CTCCCGGACCCATCATCATC	144	110
	nAChR $\alpha$ 3	CGGATGGCAATTTTCGAGGTG	CCACGTCTATTTTCGCACGAG	111	98
	nAChR $\beta$ 2	CACCTTCCTAACAGTTCTCGTT	GAAAGCAAGATGGACACGCA	81	101
Detoxification genes	CCE B	CTGGATCGCTTCGGTTCAAG	GGCAATCCTCGTTTCCATCC	132	105
	CCE E	ATCCTGTGCCCGCCAAAC	CTGGATTCTTAGGAGTGAACAC	150	105
	CYP4G189	TGGAAACGGCTATGGGAGTT	ATGTGGCGGGTATGGAGAAT	100	96
	CYP6NP1	TCCCTGATCCCGAACGTTTC	ACAATTTTCGTGGTCCTTCGC	104	104
	CYP6NQ1	CCTGTTATCACGCTTCGGAA	TTCTGGACCACGCAACAAAA	132	115
	CYP6NW1	CGTACTCCGCCAATTAACGA	CAGATGTGAACGTGGGTGAC	112	104
	GST D	TGCCGATTGACCTGTACTACT	TGCAGTTTAACGTCCAGGGA	85	110
Control genes	Actin	GGCTGTGCTCTCGTTGTATG	AGTCAGATCACGACCAGCAA	148	103
	EF1 alpha	CAGTGAGAGCTTCGTGATGC	CAGTCGGTCGAGTTGAAACC	114	103
	GAPDH	TGGTAGAGGTGCTGCTCAAA	ACAGGTACACGGAAAGCCAT	117	101

		Loop A	Loop E	
<i>Forficula auricularia</i> α1	92	WNPEDYGGVDTLHVPSEHIWLPDIVLYNNADGNYEVTIMTKAILHHTGKVVWK	PPAIYKSFCEIDVEYFPFDEQTCFMKFG	172
<i>Forficula auricularia</i> α1 mut		WNPEDYGGVDTLHVPSEHIWLPDIVLYNNADGNYEVTIMTKAILHHTGKVVWK	<b>H</b> PAIYKSFCEIDVEYFPFDEQTCFMKFG	
<i>Drosophila melanogaster</i> α1		WNPDDYGGVDTLHVPSEHIWLPDIVLYNNADGNYEVTIMTKAILHHTGKVVWK	PPAIXKSFCEIDVEYFPFDEQTCFMKFG	
<i>Myzus persicae</i> α1		WEPLEYGGVKELYVPSEHIWLPDIVLYNNADGEYVVTMTKAVLHHSKGVMWT	PPAIFKSSCEIDVRYFPFDQQTCFMKFG	
<i>Bombyx mori</i> α1		WNPDDYGGVDTLHVPSEHIWLPDIVLYNNADGNYEVTIMTKAILHHDGKVVWK	PPAIXKSFCEIDVEYFPFDEQTCFMKFG	
<i>Nilaparvata lugens</i> α1		WNPDEYGGVDTLHVPSEHIWLPDIVLYNNADGNYEVTIMTKAILHHTGKVVWK	PPAIXKSFCEIDVEYFPFDEQTCFMKFG	
<i>Drosophila melanogaster</i> α6		WNETEYGGVKDLRITPNKLWKPDVLMYNSADEGFDGTYHTNIVVKHNGSCLYV	PPGIFKSTCKIDITWFPFDDQHCCEMKFG	
<i>Apis mellifera</i> α6		WNESEYGGVKDLRITPNKLWKPDILMYNSADEGFDGTYQTNVVVTHNGSCLYV	PPGIFKSTCKIDITWFPFDDQHCCEMKFG	
<i>Homo sapiens</i> α6		WDPMEYDGIETLRVPADKIWKPDIVLYNNAVGDFQVEGKTKALLKYNGMITWT	PPAIFKSSCPMDITFFPFDDHQNCSLKF	
		Loop A	Loop E	
<i>Forficula auricularia</i> β2	95	WDPEEYGGVEMLYVPSEHIWLPDIVLYNNADGNYEVTLMTKATLKYNGEVFWK	PPAIYKSSCRINVEYFPFDEQSCMMKFG	175
<i>Forficula Auricularia</i> β2 mut		WDPEEYGRVEMLYVPSEHIWLPDIVLYNNADGNYEVTLMTKATLKYNGEVFWK	PPAIYKSSCRINVEYFPFDEQSCMMKFG	
<i>Drosophila melanogaster</i> β2		WDPEEYGGVEQLYVPSEHIWVPDIVLYNNWDGNYEVTLMTKATLKYTGEVFWEP	PPAIYKSSCEMNVEYFPYDEQICFMKFG	
<i>Diabrotica virgifera</i> v. β2		WDPEEYGGVEMLYVPSEHIWLPDIVLFNNADGNYEVTLMTKATLSYTGVIWKPP	PSIYKSSCEINVQYFPFDEQSCLMKFG	
<i>Homo sapiens</i> β2		WKPEEFDNMKKVRLPSKHIWLPDVVLYNNADGMYEVSFYSSNAVVSVDGSIFWL	PPAIYKSACKIEVKHFPPDQQNCTMKFR	

**Figure S1:** Multiple sequence alignments of part of the N-terminal domain containing loops A and E of insects and human nAChR subunits. The two cysteines of the Cys-loop motif (CX<sub>13</sub>C) are highlighted in grey, the position of Faα1 P145H and Faβ2 G102R are in bold. Sequences were retrieved from Genbank Dmα1 NP\_524481, Mpα1 CAA57476, Bmα1 ABV45511, Nlα1 BBE49554, Dmα6 NP\_723494, Apα6 NP\_001073564, Hsα6 CAD88994, Dmβ2 NP\_524483, Dvβ2 XP028137095, Hsβ2 AAD45422