

表3 欧洲玉米螟幼虫肠道特异性ESTs分析鉴定出于Bt毒素和抗性相关的基因列表

Table 3 List of genes potentially involved in Bt toxicity and resistance as identified by EST analysis from the guts of the European corn borer larvae

European corn borer						Silkworm ^b		
EST ID	Matches	Organism ^a	% Identities	E-value	Matches	% Identities	E-value	
Trypsin-like serine proteases								
1	Contig [0038]	AAR98918.1	<i>Ostrinia nubilalis</i>	254/256 (99%)	3.00E-148	AAB26023.1	144/233 (61%)	2.00E-78
2	Contig [0157]	ACB54937.1	<i>Helicoverpa armigera</i>	46/97 (47%)	8.00E-18	No match	-	-
3	Contig [0111]	ABF47507.1	<i>Ostrinia furnacalis</i>	248/257 (96%)	5.00E-135	AAB26023.1	136/231 (58%)	2.00E-64
4	Contig [0291]	AAX62039.1	<i>Ostrinia nubilalis</i>	257/258 (99%)	5.00E-137	AAB26023.1	100/240 (41%)	1.00E-43
5	Contig [0486]	ABU98624.1	<i>Helicoverpa armigera</i>	148/241 (61%)	1.00E-72	AAB26023.1	109/235 (46%)	4.00E-48
6	Contig [0754]	AAX62034.1	<i>Ostrinia nubilalis</i>	154/266 (57%)	7.00E-69	AAB26023.1	128/244 (52%)	3.00E-56
7	Contig [0622]	ABU98624.1	<i>Helicoverpa armigera</i>	145/249 (58%)	4.00E-82	AAB26023.1	101/238 (42%)	3.00E-50
8	Contig [0907]	ABU98619.1	<i>Helicoverpa armigera</i>	89/206 (43%)	6.00E-47	No match	-	-
9	Contig [1007]	AAR98918.1	<i>Ostrinia nubilalis</i>	218/252 (86%)	1.00E-120	AAB26023.1	119/229 (51%)	1.00E-57
10	Contig [1400]	ABU98619.1	<i>Helicoverpa</i>	56/199	2.00E-21	No match	-	-

			<i>armigera</i>	(28%)				
11	Contig [1615]	ABF47507.1	<i>Ostrinia furnacalis</i>	101/189 (53%)	1.00E-64	AAB26023.1	95/183 (51%)	5.00E-50
12	Contig [3395]	AAX62032.1	<i>Ostrinia nubilalis</i>	129/209 (61%)	3.00E-72	AAB26023.1	117/208 (56%)	7.00E-59
13	Contig [4300]	AAX62035.1	<i>Ostrinia nubilalis</i>	79/84 (94%)	8.00E-43	AAB26023.1	43/72 (59%)	5.00E-16
14	Contig [4291]	AAX62032.1	<i>Ostrinia nubilalis</i>	181/236 (76%)	2.00E-105	AAB26023.1	138/233 (59%)	7.00E-75
15	ECB-30_C08	AAX62036.1	<i>Ostrinia nubilalis</i>	36/45 (80%)	1.00E-13	No match	-	-
16	ECB-17_C09	ABC87051.1	<i>Ostrinia furnacalis</i>	65/98 (66%)	5.00E-30	AAB26023.1	48/97 (49%)	4.00E-19
17	ECB-C-18_B11	AAR98920.2	<i>Ostrinia nubilalis</i>	198/204 (97%)	5.00E-114	No match	-	-
18	ECB-V-26_H09	ABC87051.1	<i>Ostrinia furnacalis</i>	35/50 (70%)	6.00E-12	NP_001040350	24/48 (50%)	3.00E-04
Chymotrypsin-like serine proteases								
1	Contig [0026]	AAX62029.1	<i>Ostrinia nubilalis</i>	258/261 (98%)	5.00E-149	NP_001036903.1	163/259 (62%)	1.00E-86
2	Contig [0058]	AAX62029.1	<i>Ostrinia nubilalis</i>	228/261 (87%)	3.00E-120	No match	-	-
3	Contig [0120]	AAF71515.1	<i>Agrotis ippsilon</i>	174/287 (60%)	2.00E-84	NP_001040430.1	109/244 (44%)	2.00E-47
4	Contig [0141]	AAX62028.1	<i>Ostrinia</i>	197/262	1.00E-101	NP_001040430.1	130/261	2.00E-52

			<i>nubilalis</i>	(75%)			(49%)	
5	Contig [0187]	AAX62026.1	<i>Ostrinia nubilalis</i>	193/202 (95%)	4.00E-97	No match	-	-
6	Contig [0299]	AAX62029.1	<i>Ostrinia nubilalis</i>	228/261 (87%)	6.00E-120	NP_001036903.1	166/259 (64%)	7.00E-82
7	Contig [0379]	AAX62030.1	<i>Ostrinia nubilalis</i>	111/242 (45%)	1.00E-55	NP_001036903.1	109/236 (46%)	8.00E-55
8	Contig [0426]	AAX62026.1	<i>Ostrinia nubilalis</i>	282/289 (97%)	1.00E-129	No match	-	-
9	Contig [0560]	NP_001040430.1	<i>Ostrinia nubilalis</i>	128/232 (55%)	1.00E-63	NP_001040430.1	171/272 (62%)	4.00E-93
10	Contig [0806]	AAX62029.1	<i>Ostrinia nubilalis</i>	202/208 (97%)	6.00E-137	No match	-	-
11	Contig [1061]	CAL92020.1	<i>Manduca sexta</i>	169/281 (60%)	1.00E-87	No match	-	-
12	Contig [1478]	NP_001040430.1	<i>Bombyx mori</i>	152/260 (58%)	5.00E-84	NP_001040430.1	152/260 (58%)	4.00E-84
13	Contig [2079]	AAL93243.1	<i>Aedes aegypti</i>	85/242 (35%)	7.00E-40	No match	-	-
14	Contig [2569]	AAF71518.1	<i>Helicoverpa zea</i>	119/240 (49%)	7.00E-49	NP_001040430.1	87/212 (41%)	1.00E-30
15	Contig [4479]	AAC36150.1	<i>Plodia interpunctella</i>	140/263 (53%)	3.00E-77	NP_001036826.1	117/270 (43%)	3.00E-51
16	Contig [4699]	AAX62029.1	<i>Ostrinia nubilalis</i>	195/261 (74%)	1.00E-102	NP_001036826.1	144/251 (57%)	9.00E-68

17	ECB-23_F02	CAM84318.1	<i>Manduca sexta</i>	88/209 (42%)	3.00E-36	No match	-	-
18	ECB-V-25_E02	AAX62031.1	<i>Ostrinia nubilalis</i>	32/32 (100%)	2.00E-11	NP_001040430.1	99/203 (48%)	6.00E-42
Aminopeptidases								
1	Contig [0722]	AAP37951.1	<i>Helicoverpa armigera</i>	72/193 (37%)	9.00E-29	BAA33715.1	60/160(37%)	2.00E-21
2	Contig [1364]	ABL01481.1	<i>Ostrinia nubilalis</i>	413/421 (98%)	0	NP_001037013.1	273/422 (64%)	2.00E-154
3	Contig [1716]	XP_560264.3	<i>Anopheles gambiae</i>	132/354 (37%)	3.00E-59	No match	-	-
4	Contig [1907]	ACB87202.1	<i>Ostrinia furnacalis</i>	370/374 (98%)	0	BAA33715.1	240/368 (65%)	8.00E-135
5	Contig [4362]	AAQ57405.1	<i>Helicoverpa armigera</i>	102/263 (38%)	2.00E-48	NP_001037013.1	89/266 (33%)	1.00E-42
6	Contig [4298]	ACB47287.1	<i>Ostrinia furnacalis</i>	291/297 (97%)	3.00E-167	NP_001036834.1	213/297 (71%)	6.00E-118
7	Contig [4992]	AAP37951.1	<i>Helicoverpa armigera</i>	168/246 (68%)	7.00E-99	BAA33715.1	85/238 (35%)	6.00E-38
8	Contig [4529]	ABV01346.1	<i>Ostrinia furnacalis</i>	342/356 (96%)	0	NP_001104835.1	226/350 (64%)	4.00E-125
9	ECB-G02	AAK85539.1	<i>Helicoverpa armigera</i>	196/262 (74%)	2.00E-114	No match	-	-
10	ECB-D07	ABQ51393.1	<i>Ostrinia furnacalis</i>	171/22 (75%)	1.00E-99	NP_001104835.1	159/225 (70%)	2.00E-95

11	ECB-D12	ABV01346.1	<i>Ostrinia furnacalis</i>	200/278 (71%)	1.00E-112	NP_001104835.1	155/275 (56%)	5.00E-80
12	ECB-C06	ABL01481.1	<i>Ostrinia nubilalis</i>	40/40 (100%)	9.00E-16	NP_001037013.1	23/39 (58%)	7.00E-07
13	ECB-F04	AAP37951.1	<i>Helicoverpa armigera</i>	117/208 (56%)	2.00E-61	BAA32475.1	67/190 (35%)	2.00E-24
Alkaline phosphatases								
1	Contig [5091]	NP_001037536.2	<i>Bombyx mori</i>	101/172 (58%)	3.00E-53	NP_001037536.2	101/172 (58%)	3.00E-53
2	Contig [2328]	BAF62124.1	<i>Bombyx mandarina</i>	176/260 (67%)	8.00E-103	NP_001037536.2	177/260 (68%)	2.00E-102
Cadherin-like protein								
1	ECB-B09	ABS59299.1	<i>Ostrinia furnacalis</i>	242/244 (99%)	7.00E-135	BAA99405.1	155/247 (62%)	1.00E-81