

Table S2. PastNPV-473 open reading frames (ORFs) and homologous repeat regions (*hrs*)

ORF	Name	Position	aa	Top BLASTx match	% identity (range of alignment)	Notes/AcMNPV homologues
1	<i>polh</i>	1→747	248	ph protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	93.1 (231/248)	<i>ac8</i>
2	<i>pp78/83</i>	744←2426	560	pp78/83 [Oxyplax ochracea nucleopolyhedrovirus]	30.2 (173/573)	<i>ac9</i>
3	<i>pk-1</i>	2433→3242	269	Protein kinase-1 [Lonomia obliqua multiple nucleopolyhedrovirus]	63.8 (171/268)	<i>ac10</i>
4	<i>pe38</i>	3460←4599	379	PE38 [Lonomia obliqua multiple nucleopolyhedrovirus]	43.6 (44/101)	<i>ac153</i>
5	<i>ie-2</i>	5007→6239	410	RING-type E3 ubiquitin transferase IE2 [Rachiplusia ou MNPV (strain R1)]	32.8 (86/262)	<i>ac151</i>
	<i>hr1</i>	6528 - 6648	-	-	-	2 repeats
6	<i>p26</i>	6751→7482	243	P26 [Lonomia obliqua multiple nucleopolyhedrovirus]	54.2 (130/240)	<i>ac136</i>
7	<i>p10</i>	7530→7769	79	p10 protein [Bombyx mori nucleopolyhedrovirus] (isolate GXLuoC2)	53.6 (37/69)	<i>ac137</i>
8	<i>p74</i>	7934←9874	646	p74 [Plutella xylostella multiple nucleopolyhedrovirus]	82.0 (530/646)	<i>ac138</i>
9	<i>me53</i>	10003←11415	470	ME53 [Lonomia obliqua multiple nucleopolyhedrovirus]	46.2 (192/416)	<i>ac139</i>
10		11799←12035	78	hypothetical protein [Chitinophaga caeni]	54.6% (42/77)	8.75 repeats of the sequence MAYVTDLS
11	<i>gp64</i>	12145→13674	509	gp64 [Cyclophragma undans nucleopolyhedrovirus]	72.3% (366/506)	<i>ac128</i>
	<i>hr2</i>	13985 – 14377	-	-	-	6 repeats
12	<i>odv-e56</i>	14458→15567	369	ODV-E56 [Plutella xylostella multiple nucleopolyhedrovirus]	69.6% (240/345)	<i>ac148</i>
13	<i>ie-1</i>	15465←17282	605	early gene transactivator [Autographa californica nucleopolyhedrovirus] (isolate C6)	49.4% (295/597)	<i>ac147</i>
14	<i>ep23</i>	17381→17977	198	AcOrf-146 peptide [Autographa californica nucleopolyhedrovirus] (isolate C6)	56.9% (115/202)	<i>ac146</i>
15		17875←18756	293	-	-	
16		18800←19081	93	cyn12 [Cyclophragma undans nucleopolyhedrovirus]	58.6% (56/95)	<i>ac145</i>

17	<i>odv-ec27</i>	19078←19995	305	ORF_14 [Catopsilia pomona nucleopolyhedrovirus]	66.4% (209/315)	<i>ac144</i>
18	<i>odv-e18</i>	20020←20286	88	ODV-E18 [Maruca vitrata nucleopolyhedrovirus]	77.5% (69/89)	<i>ac143</i>
19	<i>p49</i>	20283←21707	474	P49, 49K [Lonomia obliqua multiple nucleopolyhedrovirus]	70.8% (334/472)	<i>ac142</i>
20	<i>exon0</i>	21736←22539	267	IE-0 [Lonomia obliqua multiple nucleopolyhedrovirus]	51.2% (133/260)	<i>ac141</i>
21	<i>p24</i>	22851→23459	202	p24 capsid protein [Plutella xylostella multiple nucleopolyhedrovirus]	56.9% (111/195)	<i>ac129</i>
22	<i>ac78-like</i>	23470→23811	113	-	-	
23	<i>gp16</i>	23835→24143	102	gp16 protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	77.5% (79/102)	<i>ac130</i>
24	<i>pp34</i>	24144→25235	363	PE protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	49.6% (171/345)	<i>ac131</i>
25		25245→25823	192	hypothetical protein [Choristoneura rosaceana nucleopolyhedrovirus]	33.2% (68/205)	<i>ac132</i>
26	<i>alk-exo</i>	25867→27123	418	alk-exo [Catopsilia pomona nucleopolyhedrovirus]	52.0% (226/435)	<i>ac133</i>
27		27159←27761	200	-	-	
	<i>hr3</i>	27873 – 28207	-	-	-	<i>5 repeats</i>
28		28333→28587	84	Mv-ORF92 peptide [Maruca vitrata nucleopolyhedrovirus]	60.8% (48/79)	<i>ac120</i>
29		28684→29355	223	AcOrf-124 peptide [Autographa californica nucleopolyhedrovirus] (isolate C6)	38.0% (81/213)	<i>ac124</i>
30	<i>sod</i>	29534→29719	61	sod [Malacosoma neustria nucleopolyhedrovirus]	82.0% (50/61)	<i>ac31</i>
31	<i>pif-1</i>	29716←31311	531	Ac-PIF-1 [Autographa californica nucleopolyhedrovirus] (isolate E2)	75.7% (402/531)	<i>ac119</i>
32		31443←31730	95	unknown [Rachiplusia ou MNPV]	57.1% (52/91)	<i>ac117</i>
33	<i>bro-a</i>	31871←32065	64	DekiORF38 [Dendrolimus kikuchii nucleopolyhedrovirus]	57.4% (39/68)	
34	<i>bro-b</i>	32068←32241	57	baculovirus repeated namegeneORF [Condylorrhiza vestigialis MNPV]	48.9% (23/47)	
35	<i>pif-3</i>	32324→32944	206	per os infectivity factor-3 [Maruca vitrata nucleopolyhedrovirus]	65.9% (135/205)	<i>ac115</i>

36	<i>parg</i>	32961→34268	435	AcOrf-114 peptide [Autographa californica nucleopolyhedrovirus] (isolate C6)	36.4% (158/434)	<i>ac114</i>
37	<i>pif-7</i>	34301→34468	55	pif-7 [Cyclophragma undans nucleopolyhedrovirus]	74.6% (41/55)	<i>ac110</i>
38	<i>odv-ec43</i>	34493→35635	380	ODV-EC43 [Lonomia obliqua multiple nucleopolyhedrovirus]	70.7% (272/385)	<i>ac109</i>
39		35653→35991	112	hypothetical protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	57.3% (59/103)	<i>ac108</i>
40		36077←36721	214	PREDICTED: GTP-binding nuclear protein Ran [Amyelois transitella]	88.3% (189/214)	
	<i>hr4</i>	36896 - 37223	-	-	-	5 repeats
41		38032←37349	227	Mv-ORF83 peptide [Maruca vitrata nucleopolyhedrovirus]	78.8% (167/212)	<i>ac106/107</i>
42	<i>vp80</i>	38053←40056	667	vp80 [Troides aeacus nucleopolyhedrovirus]	43.3% (221/510)	<i>ac104</i>
43	<i>p45</i>	39866→41233	455	unknown [Rachiplusia ou MNPV]	76.0% (295/388)	<i>ac103</i>
44	<i>p12</i>	41214→41549	111	P12 [Dione juno nucleopolyhedrovirus]	45.5% (50/110)	<i>ac102</i>
45	<i>p40</i>	41563→42639	358	p40 [Plutella xylostella multiple nucleopolyhedrovirus]	67.8% (246/363)	<i>ac101</i>
46	<i>p6.9</i>	42698→42859	53	-	-	<i>ac100</i>
47	<i>lef-5</i>	43668←42856	270	Late expression factor 5 [Lonomia obliqua multiple nucleopolyhedrovirus]	62.5% (170/272)	<i>ac99</i>
48	<i>38k</i>	43606→44529	307	38K protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	61.0% (188/308)	<i>ac98</i>
49	<i>pif-4</i>	44516←45037	173	pif-4 protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	75.7% (131/173)	<i>ac96</i>
50	<i>dnahel</i>	45027→48668	1213	DNA helicase [Lonomia obliqua multiple nucleopolyhedrovirus]	68.4% (849/1241)	<i>ac95</i>
51	<i>odv-e25</i>	48701←49387	228	odv-e25 [Cyclophragma undans nucleopolyhedrovirus]	72.4% (165/228)	<i>ac94</i>
52	<i>p18</i>	49399←49872	157	p18 [Catopsilia pomona nucleopolyhedrovirus]	77.7% (122/157)	<i>ac93</i>
53	<i>p33</i>	49871→50647	258	AcOrf-92 peptide [Autographa californica nucleopolyhedrovirus] (isolate C6)	64.3% (166/258)	<i>ac92</i>

54		50668←51180	170	ORF152 [Leucania separata nucleopolyhedrovirus]	41.6% (42/101)	
55	<i>lef-4</i>	51397←52788	463	late expression factor 4 [Bombyx mori nucleopolyhedrovirus] (isolate Brazilian)	63.3% (295/466)	ac90
56	<i>vp39</i>	52812→53882	356	VP39 [Lonomia obliqua multiple nucleopolyhedrovirus]	67.4% (242/359)	ac89
57	<i>cg30</i>	53938→54687	249	CG30 [Lonomia obliqua multiple nucleopolyhedrovirus]	44.8% (117/261)	ac88
58	<i>vp91</i>	54689←57211	840	viral capsid associated protein [Autographa californica nucleopolyhedrovirus] (isolate C6)	64.9% (550/847)	ac83
59	<i>tlp20</i>	57180→57698	172	TELOKIN-like protein [Lonomia obliqua multiple nucleopolyhedrovirus]	40.2% (82/204)	ac82
60	<i>ac81</i>	57559→58242	227	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	78.7% (174/221)	ac81
61	<i>gp41</i>	58235→59274	379	GP41 [Lonomia obliqua multiple nucleopolyhedrovirus]	70.8% (259/366)	ac80
62		59384→59698	104	hypothetical protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	67.3% (70/104)	ac79
63		59704→60018	104	orf78 [Bombyx mori nucleopolyhedrovirus] (isolate C1)	54.9% (56/102)	ac78
64	<i>vlf-1</i>	60031→61170	379	vlf-1 [Troides aeacus nucleopolyhedrovirus]	83.0% (313/377)	ac77
65		61198→61452	84	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	77.4% (65/84)	ac76
66		61463→61864	133	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	72.9% (97/133)	ac75
67		61879→62415	178	ac74 [Oxyplax ochracea nucleopolyhedrovirus]	48.0% (86/179)	ac74
68	<i>iap-2</i>	63130←62420	236	Inhibitor of apoptosis 2 [Lonomia obliqua multiple nucleopolyhedrovirus]	55.1% (146/265)	ac71
69	<i>vef</i>	63154→65337	727	enhancin-like [Choristoneura fumiferana multiple nucleopolyhedrovirus]	47.9% (342/714)	
70	<i>mtase</i>	65326←66108	260	AcMNPV orf69 [Bombyx mori nucleopolyhedrovirus] (isolate T3)	58.1% (151/260)	ac69
71	<i>pif-6</i>	66484←66089	131	Orf-68 [Autographa californica nucleopolyhedrovirus] (isolate BAC10:KO1629)	71.1% (91/128)	ac68

72	<i>lef-3</i>	66493→67644	383	LEF-3 [Rachiplusia ou MNPV]	48.8% (189/387)	ac67
73	<i>desmop</i>	67633←69777	714	Desmoplakin [Lonomia obliqua multiple nucleopolyhedrovirus]	34.0% (269/792)	ac66
74	<i>dnapol</i>	69795→72755	986	DNA polymerase [Lonomia obliqua multiple nucleopolyhedrovirus]	67.3% (680/1011)	ac65
	<i>hr5</i>	73049 - 73369	-	-	-	5 repeats
75		73445←73909	154	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	36.0% (59/164)	
76	<i>gp37</i>	73936→74859	307	GP37 protein [Choristoneura diversana nucleopolyhedrovirus]	71.0% (218/307)	ac64
77		75037←75516	159	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	45.2% (70/155)	ac63
78	<i>lef-9</i>	75566←77071	501	late expression factor-9 [Plutella xylostella multiple nucleopolyhedrovirus]	83.1% (412/496)	ac62
79	<i>fp25k</i>	77151→77777	208	fp25k [Catopsilia pomona nucleopolyhedrovirus]	76.7% (155/202)	ac61
80	<i>chaB2</i>	77844→78113	89	ChaB-like protein [Oxyplax ochracea nucleopolyhedrovirus]	64.0% (48/75)	ac60
81	<i>chaB1</i>	78110→78619	169	unknown [Plutella xylostella multiple nucleopolyhedrovirus]	47.0% (85/181)	ac58/59
82		78647←78874	75	hypothetical protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	40.0% (28/70)	ac56
83		78874←79116	80	cyun96 [Cyclophragma undans nucleopolyhedrovirus]	50.0% (40/80)	ac55
84	<i>vp1054</i>	79219←80292	357	VP1054 [Lonomia obliqua multiple nucleopolyhedrovirus]	64.6% (239/370)	ac54
85	<i>lef-10</i>	80147←80386	79	late expression factor-10 [Maruca vitrata nucleopolyhedrovirus]	66.2% (47/71)	ac53a
86	<i>U-box/RIN G-like domain protein</i>	80392←80805	137	hypothetical protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	70.6% (96/136)	ac53
87		80807→81388	193	unknown [Rachiplusia ou MNPV]	45.0% (89/198)	ac52
88	<i>bjdp</i>	81377←82414	345	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	36.7% (119/324)	ac51

89	<i>lef-8</i>	82441→85068	875	lef8 [Catopsilia pomona nucleopolyhedrovirus]	71.4% (649/909)	ac50
90		85085←85492	135	AcMNPV orf44 [Bombyx mori nucleopolyhedrovirus] (isolate T3)	61.2% (79/129)	ac44
91		85473←85655	60	ORF-95 [Catopsilia pomona nucleopolyhedrovirus]	63.6% (35/55)	ac43
92		85688←86476	262	-	-	
93	<i>gta</i>	86563←88092	509	gta [Bombyx mori nucleopolyhedrovirus] (isolate My)	54.7% (281/514)	ac42
94	<i>lef-12</i>	88073←88678	201	late expression factor 12 [Bombyx mori nucleopolyhedrovirus]	56.1% (97/173)	ac41
95	<i>p47</i>	88677→89867	396	transcription regulator [Autographa californica nucleopolyhedrovirus] (isolate C6)	69.6% (275/395)	ac40
96	<i>adprase</i>	89901→90620	239	unknown [Rachiplusia ou MNPV]	69.2% (153/221)	ac38
97	<i>lef-11</i>	90520→90849	109	Late expression factor 11 [Lonomia obliqua multiple nucleopolyhedrovirus]	60.0% (57/95)	ac37
98	<i>pp31/39k</i>	90843→91658	271	39K [Bombyx mori nucleopolyhedrovirus]	49.8% (141/283)	ac36
99	<i>v-ubi</i>	91712←91945	77	viral ubiquitin [Lonomia obliqua multiple nucleopolyhedrovirus]	89.6% (69/77)	ac35
100		91977→92630	217	ac34 [Troides aeacus nucleopolyhedrovirus]	47.7% (104/218)	ac34
101	<i>fgf</i>	92692→93240	182	fgf protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	45.7% (80/175)	ac32
	<i>hr6</i>	93311 - 93607	-	-	-	4 repeats
102		93694→95091	465	ac30 [Troides aeacus nucleopolyhedrovirus]	51.6% (238/461)	ac30
103		95150→95362	70	Mv-ORF20 peptide [Maruca vitrata nucleopolyhedrovirus]	70.0% (49/70)	ac29
104		95660←96394	244	-	-	
105	<i>lef-6</i>	96458←97024	188	late expression factor-6 [Maruca vitrata nucleopolyhedrovirus]	76.4% (133/174)	ac28
106	<i>iap-1</i>	97036←97899	287	inhibitor of apoptosis-1 [Maruca vitrata nucleopolyhedrovirus]	64.6% (177/274)	ac27
107		97905←98285	126	hypothetical protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	58.3% (70/120)	ac26

108	<i>dbp</i>	98292→99212	306	dbp [Catopsilia pomona nucleopolyhedrovirus]	70.0% (203/290)	ac25
109		99438←99773	111	hypothetical protein AGNV_104 [Anticarsia gemmatalis nucleopolyhedrovirus] (isolate 2D)	40.9% (45/110)	ac57
110	<i>pkip</i>	100045→100533	162	pkip [Troides aeacus nucleopolyhedrovirus]	46.1% (77/167)	ac24
111	<i>efp; f protein</i>	100591←102576	661	fusion protein [Rachiplusia ou MNPV]	32.9% (205/624)	ac23
112	<i>pif-2</i>	102662←103810	382	AcOrf-22 peptide [Autographa californica nucleopolyhedrovirus] (isolate C6)	84.8% (324/382)	ac22
113	<i>arif-1</i>	103848→104933	361	actin rearrangement inducing factor - 1 [Rachiplusia ou MNPV]	36.5% (111/304)	ac20/21
114		104965←105303	112	ORF-119 [Catopsilia pomona nucleopolyhedrovirus]	56.1% (46/82)	ac19
115		105311→106375	354	unknown [Rachiplusia ou MNPV]	43.2% (153/354)	ac18
116	<i>bv-ec31</i>	106405←107064	219	AcMNPV orf17 [Bombyx mori nucleopolyhedrovirus] (isolate T3)	52.1% (114/219)	ac17
117	<i>bv/odv-e26</i>	107033←107752	239	odv-e26 [Bombyx mori nucleopolyhedrovirus] (isolate My)	50.0% (111/222)	ac16
118	<i>egt</i>	107889←109391	500	UDP-glucosyl transferase [Bombyx mori nucleopolyhedrovirus] (isolate Thailand)	61.6% (310/503)	ac15
119	<i>lef-1</i>	109510→110256	248	LEF-1 [Bombyx mori nucleopolyhedrovirus] (isolate T3)	64.3% (153/238)	ac14
120	38.7k	110211→111176	321	hypothetical protein [Bombyx mori nucleopolyhedrovirus] (isolate H4)	54.7% (181/331)	ac13
121		111263→112276	337	hypothetical protein [Bombyx mori nucleopolyhedrovirus]	47.2% (161/341)	ac11
122	<i>ptp</i>	112321→112842	173	PTP [Bombyx mori nucleopolyhedrovirus] (isolate T3)	60.7% (102/168)	ac1
123		112817←113257	146	hypothetical protein [Thysanoplusia orichalcea nucleopolyhedrovirus]	56.3% (81/144)	ac4
124		113305→113631	108	hypothetical protein [Lonomia obliqua multiple nucleopolyhedrovirus]	42.6% (52/122)	ac5
125	<i>lef-2</i>	113606→114220	204	late expression factor-2 [Maruca vitrata nucleopolyhedrovirus]	61.3% (122/199)	ac6

126		114223←114708	161	hypothetical protein [Antheraea pernyi nucleopolyhedrovirus] (isolate Liaoning)	51.9% (28/54)	
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