

## Supplementary Materials

Table S1. Sequences used in bioinformatics analysis.

Genus/ Group	Nomenclature	Abbreviation	Isolate	Accession no.
Alpha Group I	<i>Antheraea pernyi</i> <i>nucleopolyhedrovirus</i>	AnpeNPV	Z	NC_008035
	<i>Anticarsia gemmatalis</i> multiple <i>nucleopolyhedrovirus</i>	AgMNPV	2D	NC_008520
	<i>Autographa californica</i> multiple <i>nucleopolyhedrovirus</i>	AcMNPV	Clone C6	NC_001623
	<i>Bombyx mori</i> <i>nucleopolyhedrovirus</i>	BmNPV	T3	NC_001962
	<i>Catopsilia pomona</i> <i>nucleopolyhedrovirus</i>	CapoNPV	416	NC_030240
	<i>Choristoneura fumiferana</i> multiple <i>nucleopolyhedrovirus</i>	CfMNPV		NC_004778
	<i>Condylorrhiza vestigialis</i> multiple <i>nucleopolyhedrovirus</i>	CoveMNPV		NC_026430
	<i>Dasychira pudibunda</i> <i>nucleopolyhedrovirus</i>	DapuNPV	ML1	KP747440
	<i>Dendrolimus kikuchii</i> <i>nucleopolyhedrovirus</i>	DekiNPV	strain YN	JX193905
	<i>Epiphyas postvittana</i> <i>nucleopolyhedrovirus</i>	EppoNPV		NC_003083
	<i>Hyphantria cunea</i> <i>nucleopolyhedrovirus</i>	HycuNPV		NC_007767
	<i>Lonomia obliqua</i> multiple <i>nucleopolyhedrovirus</i>	LoobMNPV	SP/2000	KP763670
	<i>Maruca vitrata</i> <i>nucleopolyhedrovirus</i>	MaviNPV		NC_008725
	<i>Orgyia pseudotsugata</i> multiple <i>nucleopolyhedrovirus</i>	OpMNPV		NC_001875
	<i>Oxyplax ochracea</i> <i>nucleopolyhedrovirus</i>	OxocNPV	435	MF143631
	<i>Philosamia cynthia</i> <i>ricini</i> <i>nucleopolyhedrovirus</i>	PhcyNPV		JX404026
	<i>Plutella xylostella</i> multiple <i>nucleopolyhedrovirus</i>	PlxyMNPV	CL3	NC_008349
	<i>Rachiplusia ou</i> multiple <i>nucleopolyhedrovirus</i>	RoMNPV		NC_004323
	<i>Samia cynthia</i> <i>nucleopolyhedrovirus</i>	SacyNPV	Nagano	LC375538
	<i>Spilosoma obliqua</i> <i>nucleopolyhedrovirus</i>	SpobNPV	IIPR	KY550224
	<i>Thysanoplusia orichalcea</i> <i>nucleopolyhedrovirus</i>	ThorNPV	P2	NC_019945
	<i>Adoxophyes honmai</i> <i>nucleopolyhedrovirus</i>	AdhoNPV		NC_004690

Alpha Group II	<i>Agrotis ipsilon multiple nucleopolyhedrovirus</i>	AgipMNPV		NC_011345
	<i>Apocheima cinerarium nucleopolyhedrovirus</i>	ApciNPV		NC_018504
	<i>Buzura suppressaria nucleopolyhedrovirus</i>	BusuNPV	Hubei	NC_023442
	<i>Chrysodeixis chalcites nucleopolyhedrovirus</i>	ChchNPV		NC_007151
	<i>Clanis bilineata nucleopolyhedrovirus</i>	ClbiNPV	DZ1	NC_008293
	<i>Ectropis obliqua nucleopolyhedrovirus</i>	EcobNPV	A1	NC_008586
	<i>Euproctis pseudoconspersa nucleopolyhedrovirus</i>	EupsNPV		NC_012639
	<i>Helicoverpa armigera multiple nucleopolyhedrovirus</i>	HaMNPV		NC_011615
	<i>Helicoverpa armigera nucleopolyhedrovirus</i>	HaSNPV-G4	G4	NC_002654
	<i>Hemileuca sp nucleopolyhedrovirus</i>	HespNPV		NC_021923
	<i>Lambdina fiscellaria nucleopolyhedrovirus</i>	LafiNPV-GR15	GR15	NC_026922
	<i>Leucania separata nucleopolyhedrovirus</i>	LeseNPV	AH1	NC_008348
	<i>Lymantria dispar multiple nucleopolyhedrovirus</i>	LdMNPV		NC_001973
	<i>Mamestra brassicae multiple nucleopolyhedrovirus</i>	MabrMNPV-K1	K1	NC_023681
	<i>Orgyia leucostigma nucleopolyhedrovirus</i>	OrleNPV	CFS77	NC_010276
	<i>Peridroma sp nucleopolyhedrovirus</i>	PespNPV	GR-167	NC_024625
	<i>Perigonia lusca simple nucleopolyhedrovirus</i>	PeluSNPV		NC_027923
	<i>Pseudoplusia includens simple nucleopolyhedrovirus</i>	PsinSNPV-IE	IE	NC_026268
	<i>Spodoptera exigua multiple nucleopolyhedrovirus</i>	SeMNPV		NC_002169
	<i>Spodoptera frugiperda multiple nucleopolyhedrovirus</i>	SfMNPV-3AP2	3AP2	NC_009011
	<i>Spodoptera littoralis nucleopolyhedrovirus</i>	SpliNPV-AN1956	AN1956	JX454574
	<i>Spodoptera litura II multiple nucleopolyhedrovirus</i>	SpltMNPV-II		NC_011616
	<i>Sucra jujuba nucleopolyhedrovirus</i>	SujuNPV-473	473	KJ676450
	<i>Trichoplusia ni simple nucleopolyhedrovirus</i>	TnSNPV		NC_007383
	<i>Spodoptera frugiperda multiple nucleopolyhedrovirus</i>	SfMNPV-Col	Colombia	KF891883
Beta	<i>Adoxophyes orana granulovirus</i>	AdorGV		NC_005038
	<i>Agrotis segetum granulovirus</i>	AgseGV		NC_005839
	<i>Clostera anachoreta granulovirus</i>	ClanGV	HBHN	NC_015398

	<i>Cryptophlebia leucotreta granulovirus</i>	CrleGV		NC_005068
	<i>Cydia pomonella granulovirus</i>	CpGV		NC_002816
			Parana-	
	<i>Diatraea saccharalis granulovirus</i>	DisaGV	2009	NC_028491
	<i>Epinotia aporema granulovirus</i>	EpapGV		NC_018875
	<i>Erinnyis ello granulovirus</i>	ErelGV	BrS86	NC_025257
	<i>Helicoverpa armigera granulovirus</i>	HearGV		NC_010240
			Southern	
	<i>Mocis latipes granulovirus</i>	MolaGV	Brazil	NC_029996
	<i>Mythimna unipuncta granulovirus</i>	MyunGV	#8	NC_033780
	<i>Phthorimaea operculella granulovirus</i>	PhopGV		NC_004062
	<i>Pseudaletia unipuncta granulovirus</i>	PsunGV	Hawaiiin	NC_013772
	<i>Pieris rapae granulovirus</i>	PiraGV	Wuhan	NC_013797
	<i>Plodia interpunctella granulovirus</i>	PlinGV	Cambridge	NC_032255
	<i>Plutella xylostella granulovirus</i>	PxGV		NC_002593
	<i>Spodoptera frugiperda granulovirus</i>	SpfrGV	VG008	NC_026511
	<i>Spodoptera litura granulovirus</i>	SpltGV	K1	NC_009503
	<i>Trichplusia ni granulovirus</i>	TrniGV	LBIV-12	KU752557
	<i>Xestia c nigrum granulovirus</i>	XecnGV		NC_002331
Gamma	<i>Neodiprion lecontei</i>			
	<i>nucleopolyhedrovirus</i>	NeleNPV		NC_005906
	<i>Neodiprion sertifer</i>			
	<i>nucleopolyhedrovirus</i>	NeseNPV		NC_005905
	<i>Neodiprion abietis</i>			
	<i>nucleopolyhedrovirus</i>	NeabNPV		DQ317692
Delta	<i>Culex nigripalpus</i>		Florida	
	<i>nucleopolyhedrovirus</i>	CuniNPV	1997	NC_003084

Alpha: *Alphabaculovirus*; Beta: *Betabaculovirus*; Gamma: *Gammabaculovirus*; Delta: *Deltabaculovirus*.