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## flashBAC™ Compatible Vectors

This table provides a summary of different baculovirus transfer vectors that have been produced by many laboratories over the past 30 years. These include vectors with polyhedrin promoters, p10 promoters, p6.9 promoters and gp64 promoters. Although the complete sequences of some of these vectors are not available we have indicated the restriction enzyme cloning sites. The vectors listed are all compatible with *flashBAC™* or BacPAK6.

Type (locus)	Vector (Size)	Promoter(s)	Features within Cloning Sites	Additional Features/Notes
Single Promoter (polyhedrin)	pVL1392 (9.6 kbp)	<i>polyhedrin</i>	<i>Bgl</i> II, <i>Pst</i> I, <i>Not</i> I, <i>Eag</i> I, <i>EcoR</i> I, <i>Xba</i> I, <i>Sma</i> I, <i>BamH</i> I	
	pVL1393 (9.6kbp)	<i>polyhedrin</i>	<i>BamH</i> I, <i>Sma</i> I, <i>Xba</i> I, <i>EcoR</i> I, <i>Not</i> I, <i>Eag</i> I, <i>Pst</i> I, <i>Bgl</i> II	
	pAcG1 (8.5 kbp)	<i>polyhedrin</i>	ATG, GST, <i>BamH</i> I, <i>Sma</i> I, <i>EcoR</i> I	
	pAcG2 (8.5 kbp)	<i>polyhedrin</i>	ATG, GST, Thrombin cleavage- <i>BamH</i> I, <i>Sma</i> I, <i>EcoR</i> I	
	pAcG3X (8.5 kbp)	<i>polyhedrin</i>	ATG, GST, Factor Xa cleavage, <i>BamH</i> I, <i>Sma</i> I, <i>EcoR</i> I	
	pAcGHILT-A (8.7 kbp)	<i>polyhedrin</i>	ATG, GST, <i>BamH</i> I-6x His tag, Protein kinase A site, Thrombin cleavage- <i>Nde</i> I, <i>EcoR</i> I, <i>Stu</i> I, <i>Nco</i> I, <i>Sac</i> I, <i>Not</i> I, <i>Sse8387</i> I, <i>Pst</i> I, <i>Kpn</i> I, <i>Sma</i> I, <i>Bgl</i> II	
	pAcGHILT-B (8.7 kbp)	<i>polyhedrin</i>	ATG, GST, <i>BamH</i> I, 6x His tag-Protein kinase A site, Thrombin cleavage- <i>Xho</i> I, <i>EcoR</i> I, <i>Stu</i> I, <i>Nco</i> I, <i>Sac</i> I, <i>Not</i> I, <i>Sse8387</i> I, <i>Pst</i> I, <i>Kpn</i> I, <i>Sma</i> I, <i>Bgl</i> II	
	pAcGHILT-C (8.7 kbp)	<i>polyhedrin</i>	ATG, GST, <i>BamH</i> I, 6x His tag-Protein kinase A site, Thrombin cleavage, <i>Nde</i> I, <i>Xho</i> I, <i>EcoR</i> I, <i>Stu</i> I, <i>Nco</i> I, <i>Sac</i> I, <i>Not</i> I, <i>Sse8387</i> I, <i>Pst</i> I, <i>Kpn</i> I, <i>Sma</i> I, <i>Bgl</i> II	

	pAcGP67-A (9.8 kbp)	<i>polyhedrin</i>	ATG, GP64 signal sequence, <i>BamH I, Sma I, Xba I, EcoR I, Not I, Eag I, Pst I, Bgl II, Ppum I</i>	A, B and C represent three different reading frames and also contain slightly different restriction sites.
	pAcGP67-B (9.8 kbp)	<i>polyhedrin</i>	ATG, GP64 signal sequence, <i>BamH I, Sma I, Nco I, EcoR I, Not I, Eag I, Pst I, Bgl II</i>	
	pAcGP67-C (9.8 kbp)	<i>polyhedrin</i>	ATG, GP64 signal sequence, <i>BamH I, Sma I, Nco I, EcoR I, Not I, Eag I, Pst I, Bgl II, Ppum I</i>	
	pAcHLT-A (8.1 kbp)	<i>polyhedrin</i>	ATG, GST, <i>BamH I</i> , 6x His tag, Protein kinase A site-Thrombin cleavage, <i>Nde I, EcoR I, Stu I, Nco I, Sac I, Not I, Sse8387 I, Pst I, Kpn I, Sma I, Bgl II</i>	A, B and C represent three different reading frames and also contain slightly different restriction sites.
	pAcHLT-B (8.1 kbp)	<i>polyhedrin</i>	ATG, GST, <i>BamH I</i> , 6x His tag, Protein kinase A site, Thrombin cleavage- <i>Xho I, EcoR I, Stu I, Nco I, Sac I, Not I, Sse8387 I, Pst I, Kpn I, Sma I, Bgl II</i>	
	pAcHLT-C (8.1 kbp)	<i>polyhedrin</i>	ATG, GST, 6x His tag, Protein kinase A site, Thrombin cleavage site, <i>Nde I, Xho I, EcoR I, Stu I, Nco I, Sac I, Not I, Sse8387 I, Pst I, Kpn I, Sma I, Bgl II</i>	
	pBAC-1 (5.3 kbp)	<i>polyhedrin</i>	<i>BamH I, Stu I, EcoR I, Sac I, Hind III, Eag I, Not I, Ava I, Xho I</i> , 6x His tag, <i>Sty I, Avr II, Bpu 1102, Sph I</i>	
	pBacgus-1 (7.4 kbp)	<i>polyhedrin</i>	<i>Bam HI, Stu I, EcoR I, Sac I, Hind III, Eag I, Not I, Ava I, Xho I</i> , 6x His tag, <i>Sty I, Avr II, Bpu 1102, Sph I</i>	B-glucuronidase under p6.9 promoter control to monitor recombinant virus production.

	pBAC-2cp (5.4 kbp)	<i>polyhedrin</i>	<i>Nco</i> I, 6x His tag, <i>Sac</i> II, thrombin cleavage site, S tag, <i>Pf</i> IM I, <i>Nhe</i> I, enterokinase cleavage site, LIC site, <i>Sma</i> I, <i>Srf</i> I, <i>Bse</i> R I, <i>Stu</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Sac</i> I, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Xho</i> I, 6x His tag, <i>Avr</i> II, <i>Bpu</i> 1102 I, <i>Sph</i> I	A Ligation-Independent Cloning (LIC) version of the vector is available for directional cloning PCR products.
	pBacgus-2cp (7.6 kbp)	<i>polyhedrin</i>	<i>Nco</i> I, 6x His tag, <i>Sac</i> II, thrombin cleavage site, S tag, <i>Pf</i> M I, <i>Nhe</i> I, enterokinase cleavage site, LIC site, <i>Sma</i> I, <i>Srf</i> I, <i>Bse</i> R I, <i>Stu</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Sac</i> I, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Xho</i> I, 6x His tag, <i>Avr</i> II, <i>Bpu</i> 1102 I, <i>Sph</i> I	Ligation-Independent Cloning (LIC) version of the vector is available for directional cloning PCR products. B-glucuronidase under <i>p6.9</i> promoter control to monitor recombinant virus production A.
	pBAC-3 (5.5 kbp)	<i>polyhedrin</i>	Gp64 signal peptide, <i>Nco</i> I, 6 x His tag, <i>Sac</i> II, thrombin cleavage site, S tag, <i>Pf</i> IM I, <i>Nhe</i> I, enterokinase cleavage site, <i>Sma</i> I, <i>Srf</i> I, <i>Bse</i> R I, <i>Stu</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Sac</i> I, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Xho</i> I, 6 x His tag, <i>Avr</i> II, <i>Bpu</i> 1102 I, <i>Sph</i> I	
	pBAC-5 (5.5 kbp)	<i>gp64</i>	<i>Nco</i> I, 6x His tag, <i>Sac</i> II, Thrombin cleavage site, S tag, <i>Pf</i> IM I*, <i>Nhe</i> I, enterokinase cleavage site, <i>Sma</i> I, <i>Srf</i> I, <i>Bse</i> R I, <i>Stu</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Sac</i> I, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Xho</i> I, 6x His tag, <i>Avr</i> II, <i>Bpu</i> 1102 I, <i>Sph</i> I  * within S tag	Has early/late gp64 promoter but no signal peptide coding region.
	pBACgus-5 (7.7 kbp)	<i>gp64</i>	<i>Nco</i> I, 6x His tag, <i>Sac</i> II, Thrombin cleavage site, S tag, <i>Pf</i> IM I*, <i>Nhe</i> I, enterokinase cleavage site, <i>Sma</i> I, <i>Srf</i> I, <i>Bse</i> R I, <i>Stu</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Sac</i> I, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Xho</i> I, 6x His tag, <i>Avr</i> II, <i>Bpu</i> 1102 I, <i>Sph</i> I  * within S tag	B-glucuronidase under <i>p6.9</i> promoter control to monitor recombinant virus production.  Has early/late gp64 promoter but no signal peptide coding region.

	pBAC-6 (5.6 kbp)	<i>gp64</i>	GP64 signal sequence, <i>Nco</i> I, 6x His tag, <i>Sac</i> II, Thrombin cleavage site, S tag, <i>PfIM</i> I*, <i>Nhe</i> I, enterokinase cleavage site, <i>Sma</i> I, <i>Srf</i> I, <i>Bse</i> R I, <i>Stu</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Sac</i> I, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Xho</i> I, 6x His tag, <i>Avr</i> II, <i>Bpu</i> 1102 I, <i>Sph</i> I.  * within S tag	Has early/late gp64 promoter and signal peptide coding region.
	pAcSecG2T (8.6 kbp)	<i>polyhedrin</i>	ATG, GP64 signal sequence, GST, Thrombin cleavage site, <i>Bam</i> H I, <i>Sma</i> I, <i>Eco</i> R I	
	pAcSG2 (5.5 kbp)	<i>polyhedrin</i>	<i>Xho</i> I, <i>Eco</i> R I, <i>Stu</i> I, <i>Nco</i> I, ATG, <i>Sac</i> I, <i>Not</i> I, <i>Eag</i> I, <i>Sse</i> 8387 I, <i>Pst</i> I, <i>Kpn</i> I, <i>Sma</i> I, <i>Bgl</i> II	ATG codon for fusion proteins.
<b>Multiple Promoter (<i>polyhedrin</i>)</b>	pAcUW21 (9.2 kbp)	<i>polyhedrin</i>  <i>p10</i>	See note  <i>Pac</i> I, <i>Bgl</i> II, <i>Eco</i> R I	Polyhedrin gene intact; foreign gene expression from p10 promoter.
	pAcUW51 (5.8 kbp)	<i>polyhedrin</i>  <i>p10</i>	<i>Bam</i> H I  <i>Bgl</i> II, <i>Eco</i> R I	Dual expression vector from polyhedrin and p10 promoters.
	pAcAB3 (10.1 kbp)	<i>p10</i>  <i>polyhedrin</i>  <i>p10</i>	<i>Sma</i> I, <i>Bam</i> H I  <i>Xba</i> I, <i>Stu</i> I  <i>Bgl</i> II, <i>Esp</i> I	Triple expression vector from polyhedrin and 2 x p10 promoters.
	pAcDB3 (6.0 kbp)	<i>p10</i>  <i>polyhedrin</i>  <i>p10</i>	<i>Sma</i> I, <i>Bam</i> H I  <i>Xba</i> I, <i>Stu</i> I  <i>Bgl</i> II, <i>Eco</i> R I	Triple expression vector from polyhedrin and 2 x p10 promoters.  Smaller version of pAcAB3.

	pAcAB4 (10.2 kbp)	<p><i>polyhedrin</i></p> <p><i>p10</i></p> <p><i>polyhedrin</i></p> <p><i>p10</i></p>	<p><i>BamH I</i></p> <p><i>Sma I</i></p> <p><i>Xba I, Stu I</i></p> <p><i>Bgl II, EcoR I, Esp I</i></p>	Quadruple expression vector from 2 x polyhedrin and 2x p10 promoters.
	pBAC4x-1 (5.9 kbp)	<p><i>p10</i></p> <p><i>polyhedrin</i></p> <p><i>p10</i></p> <p><i>polyhedrin</i></p>	<p><i>Bgl II, EcoR I, Bsu36 I</i></p> <p><i>Xba I, Stu I</i></p> <p><i>Sma I, Spe I</i></p> <p><i>BamH I, Hind III, Eag I, Not I, Xho I 6x His tag, Sty I, Bpu1102 I, Sph I</i></p>	Quadruple expression vector from 2 x polyhedrin and 2 x p10 promoters.
	pBACgus4x-1 (8.1 kbp)	<p><i>p10</i></p> <p><i>polyhedrin</i></p> <p><i>p10</i></p> <p><i>polyhedrin</i></p>	<p><i>Bgl II, EcoR I, Bsu36 I</i></p> <p><i>Xba I, Stu I</i></p> <p><i>Sma I, Spe I</i></p> <p><i>BamH I, Hind III, Eag I, Not I, Xho I 6x His tag, Sty I, Bpu1102 I, Sph I</i></p>	Quadruple expression vector from 2 x polyhedrin and 2x p10 promoters. B-glucuronidase under p6.9 promoter control to monitor recombinant virus production.
	pBACgus-6 (7.7 kbp)	<p><i>gp64</i></p>	<p>GP64 signal sequence, <i>Nco I</i>, 6x His tag, <i>Sac II</i>, Thrombin cleavage site, S tag, <i>PfIM I*</i>, <i>Nhe I</i>, enterokinase cleavage site, <i>Sma I</i>, <i>Srf I</i>, <i>BseR I</i>, <i>Stu I</i>, <i>BamH I</i>, <i>EcoR I</i>, <i>Sac I</i>, <i>Hind III</i>, <i>Eag I</i>, <i>Not I</i>, <i>Xho I</i>, 6x His tag, <i>Avr II</i>, <i>Bpu1102 I</i>, <i>Sph I</i></p> <p><i>* within S tag</i></p>	Has early/late gp64 promoter and signal peptide coding region. B-glucuronidase under p6.9 promoter control to monitor recombinant virus production.

	pBACsurf-1 (9.4 kbp)	<i>polyhedrin</i>	<i>Spe</i> I, gp64 signal sequence, <i>Pst</i> I, <i>Kpn</i> I, <i>Sma</i> I, gp64 coding region	Designed for incorporating target proteins on the virion surface by utilizing gp64 signal sequence and membrane anchor region.
	pUCDM (3.0 kbp)	<i>polyhedrin</i>  <i>p10</i>	<i>Bam</i> H I, <i>Rsr</i> II, <i>Bss</i> H II, <i>Stu</i> I, <i>Sal</i> I, <i>Sac</i> I, <i>Xba</i> I, <i>Pst</i> I  <i>Bbs</i> I, <i>Sma</i> I, <i>Xma</i> I, <i>Xho</i> I, <i>Nhe</i> I, <i>Nsi</i> I, <i>Sph</i> I	<i>Bst</i> Z 171, <i>Spe</i> I, <i>Cla</i> I, <i>Nru</i> I sites between <i>pol</i> and <i>p10</i> promoters for insertion of expression modules from pFBDM or reinsertion in this vector. <i>Pol</i> and <i>p10</i> multicloning sites are flanked by <i>Avr</i> II and <i>Pme</i> I sites respectively.
	pTriEx-3 (5.1 kbp)	<i>CMV immediate/early</i>  <i>T7lac</i>  <i>p10</i>	<i>Nco</i> I, <i>Eco</i> R V, <i>Sma</i> I, <i>Ecl</i> 136 II, <i>Sac</i> I, <i>Bam</i> H I, <i>Eco</i> R I, <i>Bgl</i> II, <i>Bss</i> H II, <i>Asc</i> I, <i>Pst</i> I, <i>Sse</i> 8387 I, <i>Kpn</i> I, <i>Pin</i> A I, <i>Nsp</i> V, <i>Hind</i> III, <i>Eag</i> I, <i>Not</i> I, <i>Pvu</i> II, <i>Bst</i> 1107 I, <i>Pml</i> I, <i>Xho</i> I, <i>Dra</i> III, <i>Bsu</i> 36 I	Suitable for the expression of a single recombinant plasmid in <i>E.coli</i> , insect and vertebrate systems by utilising one of three promoters ( <i>T7lac</i> , <i>p10</i> and <i>CMV</i> respectively).
Single Promoter ( <i>Basic/p6.9</i> )	pAcMP2 (9.8 kbp)	<i>Basic (p6.9)</i>	<i>Pst</i> I, <i>Not</i> I, <i>Eag</i> I, <i>Eco</i> R I, <i>Xba</i> I, <i>Bam</i> H I	<i>p6.9</i> promoter provides late gene expression.
	pAcMP3 (9.8 kbp)		<i>Bam</i> H I, <i>Xba</i> I, <i>Eco</i> R I, <i>Not</i> I, <i>Eag</i> I, <i>Pst</i> I, <i>Bgl</i> II	
Multiple Promoter ( <i>chitinase/cathepsin</i> )	pFBDM (5.3 kbp)	<i>polyhedrin</i>  <i>p10</i>	<i>Bam</i> H I, <i>Rsr</i> II, <i>Bss</i> H II, <i>Eco</i> R I, <i>Stu</i> I, <i>Sal</i> I, <i>Sac</i> I, <i>Not</i> I, <i>Bst</i> B I, <i>Xba</i> I, <i>Pst</i> I, <i>Hind</i> III  <i>Bbs</i> I, <i>Sma</i> I, <i>Xma</i> I, <i>Xho</i> I, <i>Nhe</i> I, <i>Nsi</i> I, <i>Sph</i> I, <i>Kpn</i> I	Polyhedrin and <i>p10</i> multicloning sites are flanked by <i>Avr</i> II and <i>Pme</i> I sites respectively.
Single Promoter ( <i>p10</i> )	pAcUW1 (4.6 kbp)	<i>p10</i>	<i>Bgl</i> II, <i>Hind</i> III	
Multiple Promoter ( <i>p10</i> )	pAcUW42 (7.1 kbp)	<i>p10</i>  <i>polyhedrin</i>	<i>Bgl</i> II, <i>Pst</i> I, <i>Not</i> I, <i>Xba</i> I, <i>Kpn</i> I, <i>Sma</i> I  <i>Bam</i> H I	

	pAcUW43 (7.1 kbp)	<i>p10</i> <i>polyhedrin</i>	<i>Sma</i> I, <i>Kpn</i> I, <i>Xba</i> I, <i>Not</i> I, <i>Pst</i> I, <i>Bgl</i> II <i>Bam</i> H I	
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