

Table 2: Level 0 plasmids

Plasmid Name	Description	Selection marker
pPK-489 - L0 - Spacer 3	L0 part containing Spacer 3	SpectR
pPK-490 - L0 - Spacer 4	L0 part containing Spacer 3	SpectR
pPK-501 - pCA_odd-1 spacer 2	Odd position 1 part containing Spacer 2	KanR
pPK-502 - pCA_odd-2 spacer 2	Odd position 2 part containing Spacer 2	KanR
pPK-503 - pCA_odd-3 spacer 3	Odd position 3 part containing Spacer 3	KanR
pPK-504 - pCA_odd-4 spacer 4	Odd position 4 part containing Spacer 4	KanR
pPK-506 - pHI-Odd-1 KanR	Odd position 1 High Copy Receiver Plasmid	KanR
pPK-507 - pHI-Odd-2 KanR	Odd position 2 High Copy Receiver Plasmid	KanR
pPK-508 - pHI-Odd-3 KanR	Odd position 3 High Copy Receiver Plasmid	KanR
pPK-509 - pHI-Odd-4 KanR	Odd position 4 High Copy Receiver Plasmid	KanR
pPK-510 - pHI-Even-1 SpectR	Even position 1 High Copy Receiver Plasmid	SpectR
pPK-511 - pHI-Even-2 SpectR	Even position 2 High Copy Receiver Plasmid	SpectR
pPK-512 - pHI-Even-3 SpectR	Even position 3 High Copy Receiver Plasmid	SpectR
pPK-513 - pHI-Even-4 SpectR	Even position 4 High Copy Receiver Plasmid	SpectR
pPK-605 - pHI-Evenspacer 1	Even position 1 High Copy Spacer Plasmid - Evenspacer 1	AmpR
pPK-606 - pHI-Evenspacer 2	Even position 2 High Copy Spacer Plasmid - Evenspacer 2	AmpR
pPK-607 - pHI-Evenspacer 3	Even position 3 High Copy Spacer Plasmid - Evenspacer 3	AmpR
pPK-608 - pHI-Evenspacer 4	Even position 4 High Copy Spacer Plasmid - Evenspacer 4	AmpR
pPK-613 - pHI-Even-1 AmpR	Even position 1 High Copy Receiver Plasmid - AmpR	AmpR
pPK-614 - pHI-Even-2 AmpR	Even position 2 High Copy Receiver Plasmid - AmpR	AmpR
pPK-615 - pHI-Even-3 AmpR	Even position 3 High Copy Receiver Plasmid - AmpR	AmpR
pPK-616 - pHI-Even-4 AmpR	Even position 4 High Copy Receiver Plasmid - AmpR	AmpR

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Plasmid Name	Description	Selection marker
pPK-384 - L0 - D4Z4c	L0 part containing D4Z4c	SpectR
pPK-387 - L0 - WPRE	L0 part containing the woodchuck hepatitis virus post-transcriptional regulatory element	SpectR
pPK-388 - L0 - CamR	L0 part containing CamR gene	SpectR
pPK-389 - L0 - TN7L	L0 part containing TN7L	SpectR
pPK-390 - L0 - TN7R	L0 part containing TN7R	SpectR
pPK-391 - L0 - NLS-GFP-NLS-XAAC-tetracs DIO Cre reporter	L0 part containing color and location changing Cre reporter (mNeonGreen-NLS+mScarlet-CAAX)	SpectR
pPK-392 - L0 - 5X Gal4 UAS - CMVmin	L0 part containing 5X Gal4 UAS and the CMV minimal promoter	SpectR
pPK-397 - L0 - rabbit beta-globin - PA	L0 part containing the rabbit beta-globin - polyA tail	SpectR
pPK-398 - L0 - BGH PA	L0 part containing the BGH - polyA tail	SpectR
pPK-399 - L0 - SV40 PA	L0 part containing the SV40- polyA tail	SpectR
pPK-409 - L0 - hSyn promoter	L0 part containing the hSyn promoter	SpectR
pPK-410 - L0 - CMVhSyn promoter	L0 part containing the CMVhSyn promoter - enhanced expression	SpectR
pPK-411 - L0 - TVA-P2A-oG	L0 part containing TVA-P2A-oG	SpectR
pPK-413 - L0 - HS4 dimer	L0 part containing HS4 dimer	SpectR
pPK-415 - L0 - A2 insulator	L0 part containing A2 insulator	SpectR
pPK-417 - L0 - Cas9	L0 part containing Cas9	SpectR
pPK-418 - L0 - L gene (domesticated)	L0 part containing the L gene (domesticated)	SpectR
pPK-423 - L0 - PIF3-MTAD-IRES-PhyB-G4DBD	L0 part containing PIF3-MTAD-IRES-PhyB-G4DBD	SpectR
pPK-425 - L0 - EF1alpha promoter	L0 part containing EF1alpha promoter	SpectR
pPK-432 - L0 - P2A sequence	L0 part containing P2A sequence	SpectR
pPK-436 - L0 - EPIC FLuc	L0 part containing EPIC Firefly luciferase	SpectR
pPK-437 - L0 - CMV promoter	L0 part containing CMV promoter	SpectR
pPK-438 - L0 - GP64 promoter	L0 part containing GP64 promoter	SpectR
pPK-439 - L0 - Renilla	L0 part containing Renilla luciferase	SpectR
pPK-440 - L0 - U6 promoter - GAPDH gRNA	L0 part containing U6 promoter - GAPDH gRNA	SpectR
pPK-535 - L0 - GP64 promoter mutant	L0 part containing GP64 promoter mutant	SpectR
pPK-550 - L0 - GentR	L0 part containing GentR gene	SpectR/GentR
pPK-577 - L0 - PH promoter	L0 part containing PH promoter	SpectR
pPK-586 - L0 - T7optmam	L0 part containing T7optimized for mammalian expression	SpectR
pPK-593 - L0 - NLS-mNeonGreen-NLS	L0 part containing NLS-mNeonGreen-NLS	SpectR
pPK-594 - L0 - mScarlet-CAAX	L0 part containing mScarlet-CAAX	SpectR
pPK-603 - L0 - PCYA-IRES-HO1-FD-FNR	L0 part containing PCYA-IRES-HO1-FD-FNR	SpectR
pPK-604 - L0 - FRT	L0 part containing FRT	SpectR

Table 3: Level 1 plasmids		
Plasmid Name	Description	Selection marker
pPK-419 - L1 - pSB-O-4 - SV40 PA	Level 1, position 4 part containing the SV40 polyA tail	KanR
pPK-420 - L1 - pSB-O-2 - HS4 insulator	Level 1, position 2 part containing the HS4 insulator dimer core	KanR
pPK-421 - L1 - pSB-O-4 - BGH PA	Level 1, position 4 part containing the BGH polyA tail	KanR
pPK-422 - L1 - pSB-O-4 - Rabb beta globin PA	Level 1, position 4 part containing the Rabbit beta-globin polyA tail	KanR
pPK-441 - L1 - pSB-O-1 - hSyn	Level 1, position 1 part containing the human synapsin promoter	KanR
pPK-442 - L1 - pSB-O-1 - CMVhSyn	Level 1, position 1 part containing a chimeric human synapsin + CMV promoter for high level neuronal-specific expression	KanR
pPK-444 - L1 - pSB-O-1 - EF1-alpha pro	Level 1, position 1 part containing the EF1alpha promoter	KanR
pPK-445 - L1 - pSB-O-3 - WPRE	Level 1, position 3 part containing the woodchuck hepatitis virus post-transcriptional regulatory element	KanR
pPK-446 - L1 - pSB-O-3 - CamR	Level 1, position 3 part containing the Chloramphenicol resistance gene	KanR
pPK-449 - L1 - pSB-O-2 - NLS-GFP-NLS-XAAC-tetracs DIO Cre reporter	Level 1, position 2 part containing the color-location changing Cre reporter	KanR
pPK-450 - L1 - pSB-O-2 - 5X Gal4 UAS - CMVmin	Level 1, position 2 part containing the Gal4 UAS and CMV minimal promoter	KanR
pPK-451 - L1 - pSB-O-2 - TVA-P2A-oG	Level 1, position 2 part containing the TVA-P2A-oG cassette (optimized G)	KanR
pPK-452 - L1 - pSB-O-2 - PIF3-MTAD-IRES-PhyB-G4DBD	Level 1, position 2 part containing the PIF3-AD-IRES-PhyB-GalDBD cassette	KanR
pPK-455 - L1 - pSB-O-1 - CMV	Level 1, position 1 part containing the CMV promoter	KanR
pPK-457 - L1 - pSB-O-2 - Renilla	Level 1, position 2 part containing the Renilla luciferase	KanR
pPK-463 - L1 - pHI-O-1 - A2 insulator	Level 1, position 1 part containing the A2 insulator	KanR
pPK-464 - L1 - pSB-O-4 - A2 insulator	Level 1, position 4 part containing the A2 insulator	KanR
pPK-465 - L1 - pSB-O-3 - U6 promoter - GAPDH gRNA	Level 1, position 3 part containing the U6 promoter and GAPDH gRNA	KanR
pPK-469 - L1 - pSB-O-3 - L gene	Level 1, position 3 part containing the L gene	KanR
pPK-470 - L1 - pSB-O-4 - D4Z4C	Level 1, position 4 part containing the D4Z4c insulator	KanR
pPK-475 - L1 - pSB-O-1 - HS4 insulator	Level 1, position 1 part containing the HS4 insulator dimer core	KanR
pPK-480 - L1 - pSB-O-4 - TN7L	Level 1, position 4 part containing the TN7L transposon site	KanR
pPK-531 - L1 - pSB-O-3 - VSVG domesticated mutant	Level 1, position 3 part containing the VSV Glycoprotein	KanR
pPK-538 - L1 - pCA-O-3 - HS4 insulator	Level 1, position 3 part containing the HS4 insulator dimer core	KanR
pPK-540 - L1 - pCA-O-3 - EPIC Luciferase	Level 1, position 3 part containing EPIC luciferase	KanR
pPK-562 - L1 - pHI-O-2 - GP64promoter mutant	Level 1, position 2 part containing a GP64 promoter variant for high expression.	KanR
pPK-563 - L1 - pHI-O-1 - TN7R	Level 1, position 4 part containing the TN7R transposition site	KanR
pPK-579 - L1 - pHI-O-2 - L-gene	Level 1, position 2 part containing the L gene	KanR
pPK-629 - L1 - pHI-O-2 - PCYA-IRES-HO1-FD-FNR	Level 1, position 2 part containing the PCB synthesis genes	KanR

Table 4: Higher level parts			
Plasmid Name	Description	Made from parts	Selection marker
pPK-458 - L2 - pHl-E-3 - A2-UAS-L-gene	Level 2, position 3 part containing the A2 insulator, Gal4UAS-CMVminimal promoter, L-gene and a position 4 spacer (no polyA).	pPK-463 - L1 - pHl-O-1 A2 insulator, pPK-450 - L1 - pSB-O-02 - 5X Gal4 UAS - CMVmin, pPK-469 - L1 - pSB-O-3 - L gene, pPK-504 - pCA-O-4 Spacer 4	SpectR
pPK-462 - L2 - pHl-E-4 - Syn-TVA-oG-WPRE-SV40PA	Level 2, position 4 part containing hSyn driven TVA-oG with WPRE and SV40 polyA tail.	pPK-441 - L1 - pSB-O-1 hSyn, pPK-451 - L1 - pSB-O-02 - TVA-P2A-oG, pPK-445 - L1 - pSB-O-03 WPRE, pPK-419 - L1 - pSB-O-4 SV40 PA	SpectR
pPK-476 - L2 - pSB-E-2 CMV-PIF/PhyB-WPRE-BGH PA	Level 2, position 2 part containing CMV driven PIF/PhyB-GalDBD cassette.	pPK-455 - L1 - pSB-O-1 CMV, pPK-452 - L1 - pSB-O-02 - PIF3-MTAD-IRES-PhyB-G4DBD, pPK-445 - L1 - pSB-O-3 WPRE, pPK-421 - L1 - pSB-O-4 BGH PA	CamR
pPK-477 - L2 - pHl-E-2 - CMVhSyn-PhyB-WPRE-BGHPA	Level 2, position 2 part containing CMVhSyn driven PIF/PhyB cassette.	pPK-442 - L1 - pSB-O-1 CMVhSyn, pPK-452 - L1 - pSB-O-02 - PIF3-MTAD-IRES-PhyB-G4DBD, pPK-445 - L1 - pSB-O-03 WPRE, pPK-421 - L1 - pSB-O-4 BGH PA	SpectR
pPK-478 - L2 - pHl-E-3 - CMVhSyn-Cre Reporter-WPRE-betaglob PA	Level 2, position 3 part containing CMVhSyn driven Cre Reporter cassette.	pPK-442 - L1 - pSB-O-1 CMVhSyn, pPK-449 - L1 - pSB-O-02 - NLS-GFP-NLS-XAAC-tetRas DIO Cre reporter, pPK-445 - L1 - pSB-O-03 WPRE, pPK-422 - L1 - pSB-O-4 Rabb beta globin PA	SpectR
pPK-479 - L2 - pCA-E-4 - HS4ins-GP64pmutant-VSVG-TN7L	Level 2, position 4 part containing the HS4 insulator dimer core, GP64 promoter driven VSVG and TN7L.	pPK-475 - L1 - pSB-O-1 HS4 insulator, pPK-562 - L1 - pHl-O-2 GP64promoter mutant, pPK-531 - L1 - pSB-O-3 - VSV-G WT, pPK-480 - L1 - pSB-O-4 TN7L	SpectR
pPK-484 - L2 - pCA-E-3 - A2-GalUAS-EPIC-A2	Level 2, position 3 part containing A2 insulator, GalUAS-EPIC luciferase, A2 insulator.	pPK-463 - L1 - pHl-O-1 A2 insulator, pPK-450 - L1 - pSB-O-02 - 5X Gal4 UAS - CMVmin, pPK-540 - L1 - pCA-O-3 EPIC Luciferase, pPK-464 - L1 - pSB-O-4 A2 insulator	SpectR
pPK-491 - L2 - pCA-E-1 - TN7R-HS4-CamR-D4Z4c	Level 2, position 1 part containing TN7R transposition site, HS4 insulator dimer core, CamR and the D4Z4c insulator.	pPK-563 - L1 pHl-O-1 TN7R, pPK-420 - L1 - pSB-O-2 HS4 insulator, pPK-446 - L1 - pSB-O-03 CamR, pPK-470 - L1 - pSB-O-4 D4Z4C	SpectR
pPK-545 - L2 - pHl-E-4 - EF1a-Renilla-HS4-TN7L	Level 2, position 4 part containing the HS4 insulator dimer core, GP64 promoter-driven VSVG and TN7L.	pPK-444 - L1 - pSB-O-1 EF1-alpha pro, pPK-457 - L1 - pSB-O-2 Renilla, pPK-538 - L1 - pCA-O-3 HS4 insulator, pPK-480 - L1 - pSB-O-4 TN7L	SpectR
pPK-574 - L2 - pHl-E-3 - A2-UAS-dL-gene	Level 2, position 3 part containing the A2 insulator, Gal4UAS-CMVminimal promoter, destabilized L-gene and a position 4 spacer (no polyA to minimize leakiness). Degron in L-gene added to part pPK-458	PCR cloned form pPK-458	SpectR
pPK-580 - L2 - pHl-E-2 - hSyn-TVA-oG-WPRE-SV40PA	Level 2, position 2 part containing hSyn driven TVA-oG with WPRE and SV40 polyA tail.	pPK-441 - L1 - pSB-O-1 hSyn, pPK-451 - L1 - pSB-O-02 - TVA-P2A-oG, pPK-445 - L1 - pSB-O-03 WPRE, pPK-419 - L1 - pSB-O-4 SV40 PA	SpectR
pPK-583 - L2 - pHl-E-3 - hSyn-L-gene	Level 2, position 3 part containing the L gene constitutively driven from the hSyn promoter.	pPK-441 - L1 - pSB-O-1 hSyn, pPK-579 - pHl-L1-2 L-gene, pPK-445 - L1 - pSB-O-03 WPRE, pPK-421 - L1 - pSB-O-4 BGH PA	SpectR
pPK-514 - L3 - pCA-O-1 - PhyB TVA tracing tool P1	Level 3 position 1 part containing the PhyB tracing tool without the inducible L gene.	pPK-491 - L2 - pCA-E-1 TN7L-HS4-CamR-D4Z4c, pPK-477 - L2 - pHl-E-2 sSyn-PhyB-WPRE-BGHPA, pPK-478 - L2 - pHl-E-3 Supersyn-Reporter-WPRE-betaglob PA, pPK-462 - L2 - pSB-E-4 Syn-TVA-oG-WPRE-SV40PA	KanR
pPK-558 - L3 - pCA-O-1 - PhyB-Luciferase tool	Level 3 position 1 part containing the PhyB-GalDBD optgenetic tool containing inducible EPIC luciferase and constitutive Renilla.	pPK-491 - L2 - pCA-E-1 TN7L-HS4-CamR-D4Z4c, pPK-476 - L2 - pSB-E-2 CMV-PIF/PhyB-WPRE-BGH PA, pPK-484 - L2 - pCA-E-3 A2-UAS-EPIC-A2, pPK-545 - L2 - pHl-E-4 EF1a-Renilla-HS4-TN7L	KanR/CamR
pPK-578 - L3 - pCA-O-2 - UAS-Lgene destable tracing tool part	Level 3, position 2 part containing the inducible destabilized L gene.	pPK-605 - pHl-E-1 Even Spacer-1, pPK-606 - pHl-E-1 Even Spacer-2, pPK-574 - L2 - pHl-E-3 A2-UAS-dL-gene, pPK-479 - L2 - pCA-E-4 HS4ins-GP64p-VSVG-TN7L	KanR
pPK-609 - L3 - pCA-O-2 UAS-Lgene tracing tool part	Level 3, position 2 part containing the inducible L gene.	pPK-605 - pHl-E-1 Even Spacer-1, pPK-606 - pHl-E-1 Even Spacer-2, pPK-458 - L2 - pHl-E-3 A2-UAS-L-gene, pPK-479 - L2 - pCA-E-4 HS4ins-GP64p-VSVG-TN7L	KanR
pPK-675 - L3 - pHl-O-1 - L-gene EF1a positive control	Level 3 position 1 part containing the L gene driven from the hSyn promoter.	pPK-491 - L2 - pCA-E-1 TN7L-HS4-CamR-D4Z4c, pPK-580 - L2 - pHl-E-2 TVA-OG, pPK-583 - L2 - pHl-E-3 L-gene, pPK-479 - L2 - pCA-E-4 HS4ins-GP64p-VSVG-TN7R	KanR
pPK-516 - L4 - pCA-E-1 - PhyB-Lgene tracing tool	Level 4 position 1 part containing the PhyB tracing tool containing the inducible L gene.	pPK-514 - L3 - pCA-O-1 PhyB TVA tracing tool P1, pPK-609 - pCA-O-2 UAS-Lgene L3 part TN7, pPK-503 - L1 - pCA-O-3 Spacer 3, pPK-504 - pCA-O-4 Spacer 4.	SpectR