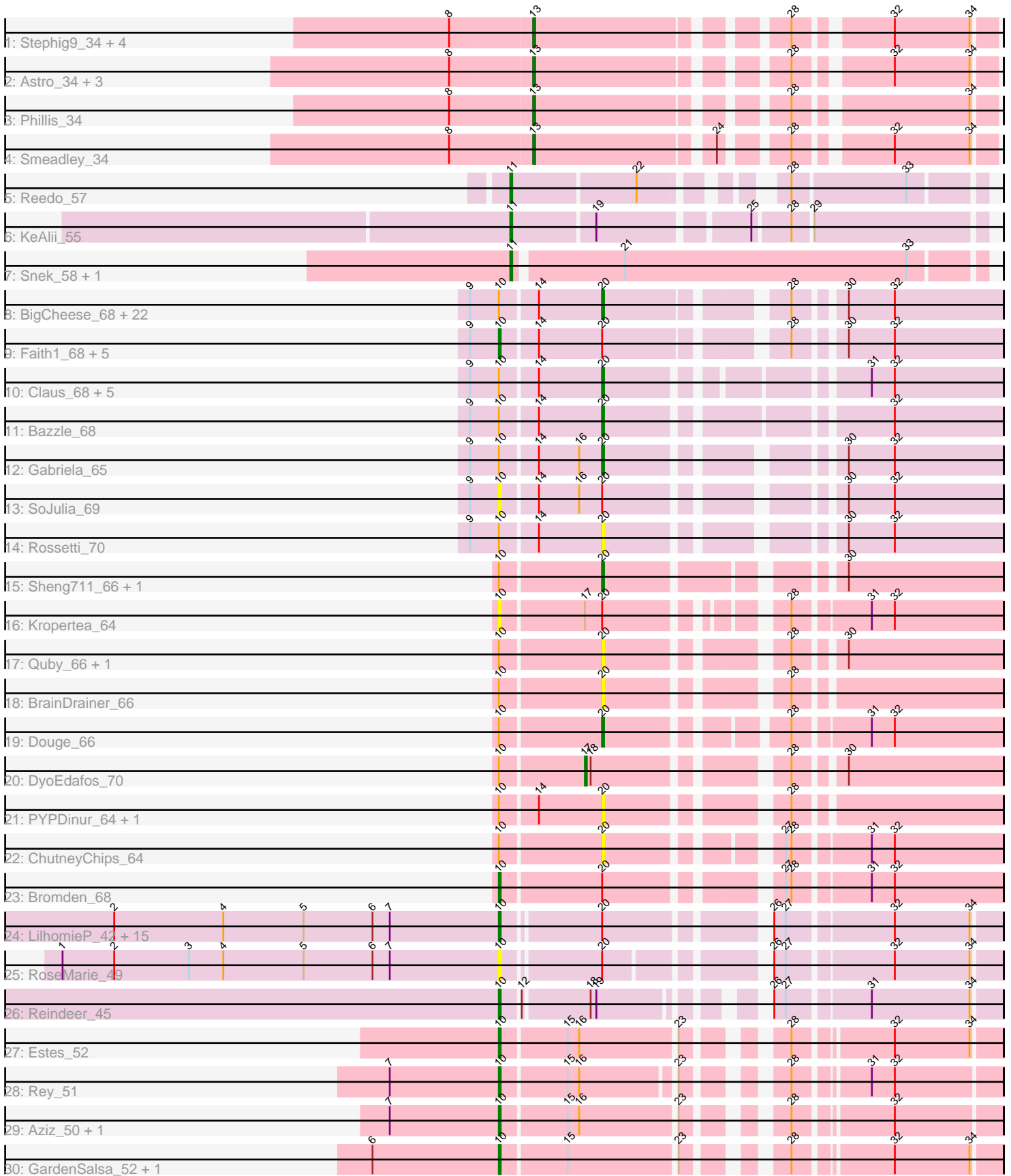


Pham 292703



Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

Pham 292703 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292703 has 90 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Stephig9_34, Dixon_34, Roary_34, Danforth_33, Expelliarmus_33
- Track 2 : Astro_34, Groundhog_33, NearlyHeadless_34, Caitlin_33
- Track 3 : Phillis_34
- Track 4 : Smeadley_34
- Track 5 : Reedo_57
- Track 6 : KeAlii_55
- Track 7 : Snek_58, Tweety19_59
- Track 8 : BigCheese_68, Wigglewobble_68, Lynnae_70, Soap141_68, Zakai_69, Underpass_59, Finemlucis_68, Lewan_69, OverPar_70, Gardann_69, Nicholasp3_68, MkaliMitinis3_69, Crossroads_68, Sarshaun_69, Itos_67, Rumpelstiltskin_67, LilDestine_68, Vetrix_68, Wilder_69, Hafay_70, BobsGarage_68, Loadrie_67, Kahlid_68
- Track 9 : Faith1_68, Miley16_68, DrSeegs_68, Breezona_68, Netyap_69, Winky_68
- Track 10 : Claus_68, ZhongYanYuan_67, Tourach_67, DHan_70, DanBing_69, Baoshan_67
- Track 11 : Bazzle_68
- Track 12 : Gabriela_65
- Track 13 : SoJulia_69
- Track 14 : Rossetti_70
- Track 15 : Sheng711_66, Chaser_64
- Track 16 : Kropertea_64
- Track 17 : Quby_66, FarmResident_68
- Track 18 : BrainDrainer_66
- Track 19 : Douge_66
- Track 20 : DyoEdafos_70
- Track 21 : PYPDinur_64, Douzhi_66
- Track 22 : ChutneyChips_64
- Track 23 : Bromden_68
- Track 24 : LilhomieP_42, PegLeg_43, Diminimus_44, IPhane7_43, Bongo_43, SlimJimmy_42, Auspice_43, TpudiCK_45, Bricole_43, FreakyGoo_44, Izel_44, Dulcita_44, TyDawg_43, Glaske16_44, Skinny_44, KleverKiS_44
- Track 25 : RoseMarie_49
- Track 26 : Reindeer_45
- Track 27 : Estes_52
- Track 28 : Rey_51
- Track 29 : Aziz_50, GenevaB15_50
- Track 30 : GardenSalsa_52, MrMagoo_52

Summary of Final Annotations (See graph section above for start numbers):

The start number called the most often in the published annotations is 10, it was called in 28 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Auspice_43, Aziz_50, Bongo_43, Breezona_68, Bricole_43, Bromden_68, Diminimus_44, DrSeegs_68, Dulcita_44, Estes_52, Faith1_68, FreakyGoo_44, GardenSalsa_52, GenevaB15_50, Glaske16_44, IPHane7_43, Izel_44, KleverKiS_44, Kropertea_64, LilhomieP_42, Miley16_68, MrMagoo_52, Netyap_69, PegLeg_43, Reindeer_45, Rey_51, RoseMarie_49, Skinny_44, SlimJimmy_42, SoJulia_69, TpudiCK_45, TyDawg_43, Winky_68,

Genes that have the "Most Annotated" start but do not call it:

- Baoshan_67, Bazzle_68, BigCheese_68, BobsGarage_68, BrainDrainer_66, Chaser_64, ChutneyChips_64, Claus_68, Crossroads_68, DHan_70, DanBing_69, Douge_66, Douzhi_66, DyoEdafos_70, FarmResident_68, Finemlucis_68, Gabriela_65, Gardann_69, Hafay_70, Itos_67, Kahlid_68, Lewan_69, LilDestine_68, Loadrie_67, Lynnae_70, MkaliMitinis3_69, Nicholasp3_68, OverPar_70, PYPDinur_64, Quby_66, Rossetti_70, Rumpelstiltskin_67, Sarshaun_69, Sheng711_66, Soap141_68, Tourach_67, Underpass_59, Vetrix_68, Wigglewiggles_68, Wilder_69, Zakai_69, ZhongYanYuan_67,

Genes that do not have the "Most Annotated" start:

- Astro_34, Caitlin_33, Danforth_33, Dixon_34, Expelliarmus_33, Groundhog_33, KeAlii_55, NearlyHeadless_34, Phillis_34, Reedo_57, Roary_34, Smeadley_34, Snek_58, Stephig9_34, Tweety19_59,

Summary by start number:

Start 10:

- Found in 75 of 90 (83.3%) of genes in pham
- Manual Annotations of this start: 28 of 68
- Called 44.0% of time when present
- Phage (with cluster) where this start called: Auspice_43 (M1), Aziz_50 (M2), Bongo_43 (M1), Breezona_68 (L2), Bricole_43 (M1), Bromden_68 (L4), Diminimus_44 (M1), DrSeegs_68 (L2), Dulcita_44 (M1), Estes_52 (M2), Faith1_68 (L2), FreakyGoo_44 (M1), GardenSalsa_52 (M2), GenevaB15_50 (M2), Glaske16_44 (M1), IPHane7_43 (M1), Izel_44 (M1), KleverKiS_44 (M1), Kropertea_64 (L4), LilhomieP_42 (M1), Miley16_68 (L2), MrMagoo_52 (M2), Netyap_69 (L2), PegLeg_43 (M1), Reindeer_45 (M1), Rey_51 (M2), RoseMarie_49 (M1), Skinny_44 (M1), SlimJimmy_42 (M1), SoJulia_69 (L2), TpudiCK_45 (M1), TyDawg_43 (M1), Winky_68 (L2),

Start 11:

- Found in 4 of 90 (4.4%) of genes in pham
- Manual Annotations of this start: 4 of 68
- Called 100.0% of time when present

- Phage (with cluster) where this start called: KeAlii_55 (AZ1), Reedo_57 (AZ1), Snek_58 (AZ3), Tweety19_59 (AZ3),

Start 13:

- Found in 11 of 90 (12.2%) of genes in pham
- Manual Annotations of this start: 10 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Astro_34 (A8), Caitlin_33 (A8), Danforth_33 (A8), Dixon_34 (A8), Expelliarmus_33 (A8), Groundhog_33 (A8), NearlyHeadless_34 (A8), Phillis_34 (A8), Roary_34 (A8), Smeadley_34 (A8), Stephig9_34 (A8),

Start 17:

- Found in 2 of 90 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DyoEdafos_70 (L4),

Start 20:

- Found in 67 of 90 (74.4%) of genes in pham
- Manual Annotations of this start: 25 of 68
- Called 61.2% of time when present
- Phage (with cluster) where this start called: Baoshan_67 (L2), Bazzle_68 (L2), BigCheese_68 (L2), BobsGarage_68 (L2), BrainDrainer_66 (L4), Chaser_64 (L4), ChutneyChips_64 (L4), Claus_68 (L2), Crossroads_68 (L2), DHan_70 (L2), DanBing_69 (L2), Douge_66 (L4), Douzhi_66 (L4), FarmResident_68 (L4), Finemlucis_68 (L2), Gabriela_65 (L2), Gardann_69 (L2), Hafay_70 (L2), Itos_67 (L2), Kahlid_68 (L2), Lewan_69 (L2), LilDestine_68 (L2), Loadrie_67 (L2), Lynnae_70 (L2), MkaliMitinis3_69 (L2), Nicholasp3_68 (L2), OverPar_70 (L2), PYPDinur_64 (L4), Quby_66 (L4), Rossetti_70 (L2), Rumpelstiltskin_67 (L2), Sarshaun_69 (L2), Sheng711_66 (L4), Soap141_68 (L2), Tourach_67 (L2), Underpass_59 (L2), Vetrix_68 (L2), Wigglewiggles_68 (L2), Wilder_69 (L2), Zakai_69 (L2), ZhongYanYuan_67 (L2),

Summary by clusters:

There are 7 clusters represented in this pham: A8, L4, AZ1, M1, M2, L2, AZ3,

Info for manual annotations of cluster A8:

- Start number 13 was manually annotated 10 times for cluster A8.

Info for manual annotations of cluster AZ1:

- Start number 11 was manually annotated 2 times for cluster AZ1.

Info for manual annotations of cluster AZ3:

- Start number 11 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster L2:

- Start number 10 was manually annotated 6 times for cluster L2.
- Start number 20 was manually annotated 23 times for cluster L2.

Info for manual annotations of cluster L4:

- Start number 10 was manually annotated 1 time for cluster L4.

- Start number 17 was manually annotated 1 time for cluster L4.
- Start number 20 was manually annotated 2 times for cluster L4.

Info for manual annotations of cluster M1:

- Start number 10 was manually annotated 15 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 10 was manually annotated 6 times for cluster M2.

Gene Information:

Gene: Astro_34 Start: 26685, Stop: 26479, Start Num: 13

Candidate Starts for Astro_34:

(8, 26727), (Start: 13 @26685 has 10 MA's), (28, 26571), (32, 26529), (34, 26490),

Gene: Auspice_43 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for Auspice_43:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: Aziz_50 Start: 36169, Stop: 35948, Start Num: 10

Candidate Starts for Aziz_50:

(7, 36226), (Start: 10 @36169 has 28 MA's), (15, 36136), (16, 36130), (23, 36082), (28, 36046), (32, 36001),

Gene: Baoshan_67 Start: 46667, Stop: 46849, Start Num: 20

Candidate Starts for Baoshan_67:

(9, 46601), (Start: 10 @46616 has 28 MA's), (14, 46634), (Start: 20 @46667 has 25 MA's), (31, 46781), (32, 46793),

Gene: Bazzle_68 Start: 47062, Stop: 47247, Start Num: 20

Candidate Starts for Bazzle_68:

(9, 46996), (Start: 10 @47011 has 28 MA's), (14, 47029), (Start: 20 @47062 has 25 MA's), (32, 47191),

Gene: BigCheese_68 Start: 46724, Stop: 46906, Start Num: 20

Candidate Starts for BigCheese_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: BobsGarage_68 Start: 46724, Stop: 46906, Start Num: 20

Candidate Starts for BobsGarage_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: Bongo_43 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for Bongo_43:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: BrainDrainer_66 Start: 45629, Stop: 45808, Start Num: 20

Candidate Starts for BrainDrainer_66:

(Start: 10 @45578 has 28 MA's), (Start: 20 @45629 has 25 MA's), (28, 45707),

Gene: Breezona_68 Start: 46673, Stop: 46906, Start Num: 10

Candidate Starts for Breezona_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: Bricole_43 Start: 34212, Stop: 33982, Start Num: 10

Candidate Starts for Bricole_43:

(2, 34413), (4, 34356), (5, 34314), (6, 34278), (7, 34269), (Start: 10 @34212 has 28 MA's), (Start: 20 @34164 has 25 MA's), (26, 34092), (27, 34086), (32, 34035), (34, 33996),

Gene: Bromden_68 Start: 46608, Stop: 46841, Start Num: 10

Candidate Starts for Bromden_68:

(Start: 10 @46608 has 28 MA's), (Start: 20 @46659 has 25 MA's), (27, 46734), (28, 46737), (31, 46773), (32, 46785),

Gene: Caitlin_33 Start: 26678, Stop: 26472, Start Num: 13

Candidate Starts for Caitlin_33:

(8, 26720), (Start: 13 @26678 has 10 MA's), (28, 26564), (32, 26522), (34, 26483),

Gene: Chaser_64 Start: 45401, Stop: 45577, Start Num: 20

Candidate Starts for Chaser_64:

(Start: 10 @45350 has 28 MA's), (Start: 20 @45401 has 25 MA's), (30, 45497),

Gene: ChutneyChips_64 Start: 45657, Stop: 45836, Start Num: 20

Candidate Starts for ChutneyChips_64:

(Start: 10 @45606 has 28 MA's), (Start: 20 @45657 has 25 MA's), (27, 45729), (28, 45732), (31, 45768), (32, 45780),

Gene: Claus_68 Start: 46805, Stop: 46987, Start Num: 20

Candidate Starts for Claus_68:

(9, 46739), (Start: 10 @46754 has 28 MA's), (14, 46772), (Start: 20 @46805 has 25 MA's), (31, 46919), (32, 46931),

Gene: Crossroads_68 Start: 46802, Stop: 46981, Start Num: 20

Candidate Starts for Crossroads_68:

(9, 46736), (Start: 10 @46751 has 28 MA's), (14, 46769), (Start: 20 @46802 has 25 MA's), (28, 46880), (30, 46901), (32, 46925),

Gene: DHan_70 Start: 46705, Stop: 46887, Start Num: 20

Candidate Starts for DHan_70:

(9, 46639), (Start: 10 @46654 has 28 MA's), (14, 46672), (Start: 20 @46705 has 25 MA's), (31, 46819), (32, 46831),

Gene: DanBing_69 Start: 46674, Stop: 46856, Start Num: 20

Candidate Starts for DanBing_69:

(9, 46608), (Start: 10 @46623 has 28 MA's), (14, 46641), (Start: 20 @46674 has 25 MA's), (31, 46788), (32, 46800),

Gene: Danforth_33 Start: 26570, Stop: 26364, Start Num: 13

Candidate Starts for Danforth_33:

(8, 26612), (Start: 13 @26570 has 10 MA's), (28, 26456), (32, 26414), (34, 26375),

Gene: Diminimus_44 Start: 34225, Stop: 33995, Start Num: 10

Candidate Starts for Diminimus_44:

(2, 34426), (4, 34369), (5, 34327), (6, 34291), (7, 34282), (Start: 10 @34225 has 28 MA's), (Start: 20 @34177 has 25 MA's), (26, 34105), (27, 34099), (32, 34048), (34, 34009),

Gene: Dixon_34 Start: 26679, Stop: 26473, Start Num: 13

Candidate Starts for Dixon_34:

(8, 26721), (Start: 13 @26679 has 10 MA's), (28, 26565), (32, 26523), (34, 26484),

Gene: Douge_66 Start: 45395, Stop: 45577, Start Num: 20

Candidate Starts for Douge_66:

(Start: 10 @45344 has 28 MA's), (Start: 20 @45395 has 25 MA's), (28, 45473), (31, 45509), (32, 45521),

Gene: Douzhi_66 Start: 45448, Stop: 45627, Start Num: 20

Candidate Starts for Douzhi_66:

(Start: 10 @45397 has 28 MA's), (14, 45415), (Start: 20 @45448 has 25 MA's), (28, 45526),

Gene: DrSeegs_68 Start: 46673, Stop: 46906, Start Num: 10

Candidate Starts for DrSeegs_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: Dulcita_44 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for Dulcita_44:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: DyoEdafos_70 Start: 45881, Stop: 46069, Start Num: 17

Candidate Starts for DyoEdafos_70:

(Start: 10 @45839 has 28 MA's), (Start: 17 @45881 has 1 MA's), (18, 45884), (28, 45968), (30, 45989),

Gene: Estes_52 Start: 36435, Stop: 36214, Start Num: 10

Candidate Starts for Estes_52:

(Start: 10 @36435 has 28 MA's), (15, 36402), (16, 36396), (23, 36348), (28, 36312), (32, 36267), (34, 36228),

Gene: Expelliarmus_33 Start: 26556, Stop: 26350, Start Num: 13

Candidate Starts for Expelliarmus_33:

(8, 26598), (Start: 13 @26556 has 10 MA's), (28, 26442), (32, 26400), (34, 26361),

Gene: Faith1_68 Start: 46673, Stop: 46906, Start Num: 10

Candidate Starts for Faith1_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: FarmResident_68 Start: 45404, Stop: 45583, Start Num: 20

Candidate Starts for FarmResident_68:

(Start: 10 @45353 has 28 MA's), (Start: 20 @45404 has 25 MA's), (28, 45482), (30, 45503),

Gene: Finemlucis_68 Start: 47045, Stop: 47227, Start Num: 20

Candidate Starts for Finemlucis_68:

(9, 46979), (Start: 10 @46994 has 28 MA's), (14, 47012), (Start: 20 @47045 has 25 MA's), (28, 47126), (30, 47147), (32, 47171),

Gene: FreakyGoo_44 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for FreakyGoo_44:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: Gabriela_65 Start: 45174, Stop: 45353, Start Num: 20

Candidate Starts for Gabriela_65:

(9, 45108), (Start: 10 @45123 has 28 MA's), (14, 45141), (16, 45162), (Start: 20 @45174 has 25 MA's), (30, 45273), (32, 45297),

Gene: Gardann_69 Start: 46760, Stop: 46939, Start Num: 20

Candidate Starts for Gardann_69:

(9, 46694), (Start: 10 @46709 has 28 MA's), (14, 46727), (Start: 20 @46760 has 25 MA's), (28, 46838), (30, 46859), (32, 46883),

Gene: GardenSalsa_52 Start: 36533, Stop: 36312, Start Num: 10

Candidate Starts for GardenSalsa_52:

(6, 36599), (Start: 10 @36533 has 28 MA's), (15, 36500), (23, 36446), (28, 36410), (32, 36365), (34, 36326),

Gene: GenevaB15_50 Start: 36169, Stop: 35948, Start Num: 10

Candidate Starts for GenevaB15_50:

(7, 36226), (Start: 10 @36169 has 28 MA's), (15, 36136), (16, 36130), (23, 36082), (28, 36046), (32, 36001),

Gene: Glaske16_44 Start: 34225, Stop: 33995, Start Num: 10

Candidate Starts for Glaske16_44:

(2, 34426), (4, 34369), (5, 34327), (6, 34291), (7, 34282), (Start: 10 @34225 has 28 MA's), (Start: 20 @34177 has 25 MA's), (26, 34105), (27, 34099), (32, 34048), (34, 34009),

Gene: Groundhog_33 Start: 26650, Stop: 26444, Start Num: 13

Candidate Starts for Groundhog_33:

(8, 26692), (Start: 13 @26650 has 10 MA's), (28, 26536), (32, 26494), (34, 26455),

Gene: Hafay_70 Start: 46828, Stop: 47010, Start Num: 20

Candidate Starts for Hafay_70:

(9, 46762), (Start: 10 @46777 has 28 MA's), (14, 46795), (Start: 20 @46828 has 25 MA's), (28, 46909), (30, 46930), (32, 46954),

Gene: IPhone7_43 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for IPhone7_43:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: Itos_67 Start: 45630, Stop: 45812, Start Num: 20

Candidate Starts for Itos_67:

(9, 45564), (Start: 10 @45579 has 28 MA's), (14, 45597), (Start: 20 @45630 has 25 MA's), (28, 45711), (30, 45732), (32, 45756),

Gene: Izel_44 Start: 34225, Stop: 33995, Start Num: 10

Candidate Starts for Izel_44:

(2, 34426), (4, 34369), (5, 34327), (6, 34291), (7, 34282), (Start: 10 @34225 has 28 MA's), (Start: 20 @34177 has 25 MA's), (26, 34105), (27, 34099), (32, 34048), (34, 34009),

Gene: Kahlid_68 Start: 46730, Stop: 46912, Start Num: 20

Candidate Starts for Kahlid_68:

(9, 46664), (Start: 10 @46679 has 28 MA's), (14, 46697), (Start: 20 @46730 has 25 MA's), (28, 46811), (30, 46832), (32, 46856),

Gene: KeAlii_55 Start: 38215, Stop: 38442, Start Num: 11

Candidate Starts for KeAlii_55:

(Start: 11 @38215 has 4 MA's), (19, 38257), (25, 38329), (28, 38347), (29, 38356),

Gene: KleverKiS_44 Start: 34206, Stop: 33976, Start Num: 10

Candidate Starts for KleverKiS_44:

(2, 34407), (4, 34350), (5, 34308), (6, 34272), (7, 34263), (Start: 10 @34206 has 28 MA's), (Start: 20 @34158 has 25 MA's), (26, 34086), (27, 34080), (32, 34029), (34, 33990),

Gene: Kropertea_64 Start: 45504, Stop: 45731, Start Num: 10

Candidate Starts for Kropertea_64:

(Start: 10 @45504 has 28 MA's), (Start: 17 @45546 has 1 MA's), (Start: 20 @45555 has 25 MA's), (28, 45627), (31, 45663), (32, 45675),

Gene: Lewan_69 Start: 46784, Stop: 46963, Start Num: 20

Candidate Starts for Lewan_69:

(9, 46718), (Start: 10 @46733 has 28 MA's), (14, 46751), (Start: 20 @46784 has 25 MA's), (28, 46862), (30, 46883), (32, 46907),

Gene: LilDestine_68 Start: 46757, Stop: 46939, Start Num: 20

Candidate Starts for LilDestine_68:

(9, 46691), (Start: 10 @46706 has 28 MA's), (14, 46724), (Start: 20 @46757 has 25 MA's), (28, 46838), (30, 46859), (32, 46883),

Gene: LilhomieP_42 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for LilhomieP_42:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: Loadrie_67 Start: 46812, Stop: 46991, Start Num: 20

Candidate Starts for Loadrie_67:

(9, 46746), (Start: 10 @46761 has 28 MA's), (14, 46779), (Start: 20 @46812 has 25 MA's), (28, 46890), (30, 46911), (32, 46935),

Gene: Lynnae_70 Start: 46755, Stop: 46937, Start Num: 20

Candidate Starts for Lynnae_70:

(9, 46689), (Start: 10 @46704 has 28 MA's), (14, 46722), (Start: 20 @46755 has 25 MA's), (28, 46836), (30, 46857), (32, 46881),

Gene: Miley16_68 Start: 46673, Stop: 46906, Start Num: 10

Candidate Starts for Miley16_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: MkaliMitinis3_69 Start: 46796, Stop: 46975, Start Num: 20
Candidate Starts for MkaliMitinis3_69:
(9, 46730), (Start: 10 @46745 has 28 MA's), (14, 46763), (Start: 20 @46796 has 25 MA's), (28, 46874),
(30, 46895), (32, 46919),

Gene: MrMagoo_52 Start: 36533, Stop: 36312, Start Num: 10
Candidate Starts for MrMagoo_52:
(6, 36599), (Start: 10 @36533 has 28 MA's), (15, 36500), (23, 36446), (28, 36410), (32, 36365), (34,
36326),

Gene: NearlyHeadless_34 Start: 26609, Stop: 26403, Start Num: 13
Candidate Starts for NearlyHeadless_34:
(8, 26651), (Start: 13 @26609 has 10 MA's), (28, 26495), (32, 26453), (34, 26414),

Gene: Netyap_69 Start: 46674, Stop: 46907, Start Num: 10
Candidate Starts for Netyap_69:
(9, 46659), (Start: 10 @46674 has 28 MA's), (14, 46692), (Start: 20 @46725 has 25 MA's), (28, 46806),
(30, 46827), (32, 46851),

Gene: Nicholasp3_68 Start: 46760, Stop: 46939, Start Num: 20
Candidate Starts for Nicholasp3_68:
(9, 46694), (Start: 10 @46709 has 28 MA's), (14, 46727), (Start: 20 @46760 has 25 MA's), (28, 46838),
(30, 46859), (32, 46883),

Gene: OverPar_70 Start: 46812, Stop: 46991, Start Num: 20
Candidate Starts for OverPar_70:
(9, 46746), (Start: 10 @46761 has 28 MA's), (14, 46779), (Start: 20 @46812 has 25 MA's), (28, 46890),
(30, 46911), (32, 46935),

Gene: PYPDinur_64 Start: 45478, Stop: 45657, Start Num: 20
Candidate Starts for PYPDinur_64:
(Start: 10 @45427 has 28 MA's), (14, 45445), (Start: 20 @45478 has 25 MA's), (28, 45556),

Gene: PegLeg_43 Start: 34225, Stop: 33995, Start Num: 10
Candidate Starts for PegLeg_43:
(2, 34426), (4, 34369), (5, 34327), (6, 34291), (7, 34282), (Start: 10 @34225 has 28 MA's), (Start: 20
@34177 has 25 MA's), (26, 34105), (27, 34099), (32, 34048), (34, 34009),

Gene: Phillis_34 Start: 26635, Stop: 26429, Start Num: 13
Candidate Starts for Phillis_34:
(8, 26677), (Start: 13 @26635 has 10 MA's), (28, 26521), (34, 26440),

Gene: Quby_66 Start: 45370, Stop: 45549, Start Num: 20
Candidate Starts for Quby_66:
(Start: 10 @45319 has 28 MA's), (Start: 20 @45370 has 25 MA's), (28, 45448), (30, 45469),

Gene: Reedo_57 Start: 36918, Stop: 37124, Start Num: 11
Candidate Starts for Reedo_57:
(Start: 11 @36918 has 4 MA's), (22, 36981), (28, 37032), (33, 37089),

Gene: Reindeer_45 Start: 35434, Stop: 35216, Start Num: 10
Candidate Starts for Reindeer_45:

(Start: 10 @35434 has 28 MA's), (12, 35425), (18, 35392), (19, 35389), (26, 35326), (27, 35320), (31, 35281), (34, 35230),

Gene: Rey_51 Start: 36466, Stop: 36248, Start Num: 10

Candidate Starts for Rey_51:

(7, 36523), (Start: 10 @36466 has 28 MA's), (15, 36433), (16, 36427), (23, 36382), (28, 36346), (31, 36313), (32, 36301),

Gene: Roary_34 Start: 26555, Stop: 26349, Start Num: 13

Candidate Starts for Roary_34:

(8, 26597), (Start: 13 @26555 has 10 MA's), (28, 26441), (32, 26399), (34, 26360),

Gene: RoseMarie_49 Start: 37891, Stop: 37664, Start Num: 10

Candidate Starts for RoseMarie_49:

(1, 38119), (2, 38092), (3, 38053), (4, 38035), (5, 37993), (6, 37957), (7, 37948), (Start: 10 @37891 has 28 MA's), (Start: 20 @37843 has 25 MA's), (26, 37774), (27, 37768), (32, 37717), (34, 37678),

Gene: Rossetti_70 Start: 47306, Stop: 47485, Start Num: 20

Candidate Starts for Rossetti_70:

(9, 47240), (Start: 10 @47255 has 28 MA's), (14, 47273), (Start: 20 @47306 has 25 MA's), (30, 47405), (32, 47429),

Gene: Rumpelstiltskin_67 Start: 46153, Stop: 46332, Start Num: 20

Candidate Starts for Rumpelstiltskin_67:

(9, 46087), (Start: 10 @46102 has 28 MA's), (14, 46120), (Start: 20 @46153 has 25 MA's), (28, 46231), (30, 46252), (32, 46276),

Gene: Sarshaun_69 Start: 46820, Stop: 46999, Start Num: 20

Candidate Starts for Sarshaun_69:

(9, 46754), (Start: 10 @46769 has 28 MA's), (14, 46787), (Start: 20 @46820 has 25 MA's), (28, 46898), (30, 46919), (32, 46943),

Gene: Sheng711_66 Start: 45459, Stop: 45641, Start Num: 20

Candidate Starts for Sheng711_66:

(Start: 10 @45408 has 28 MA's), (Start: 20 @45459 has 25 MA's), (30, 45561),

Gene: Skinny_44 Start: 34655, Stop: 34425, Start Num: 10

Candidate Starts for Skinny_44:

(2, 34856), (4, 34799), (5, 34757), (6, 34721), (7, 34712), (Start: 10 @34655 has 28 MA's), (Start: 20 @34607 has 25 MA's), (26, 34535), (27, 34529), (32, 34478), (34, 34439),

Gene: SlimJimmy_42 Start: 34209, Stop: 33979, Start Num: 10

Candidate Starts for SlimJimmy_42:

(2, 34410), (4, 34353), (5, 34311), (6, 34275), (7, 34266), (Start: 10 @34209 has 28 MA's), (Start: 20 @34161 has 25 MA's), (26, 34089), (27, 34083), (32, 34032), (34, 33993),

Gene: Smeadley_34 Start: 26678, Stop: 26472, Start Num: 13

Candidate Starts for Smeadley_34:

(8, 26720), (Start: 13 @26678 has 10 MA's), (24, 26591), (28, 26564), (32, 26522), (34, 26483),

Gene: Snek_58 Start: 37551, Stop: 37787, Start Num: 11

Candidate Starts for Snek_58:

(Start: 11 @37551 has 4 MA's), (21, 37605), (33, 37752),

Gene: SoJulia_69 Start: 46938, Stop: 47168, Start Num: 10

Candidate Starts for SoJulia_69:

(9, 46923), (Start: 10 @46938 has 28 MA's), (14, 46956), (16, 46977), (Start: 20 @46989 has 25 MA's), (30, 47088), (32, 47112),

Gene: Soap141_68 Start: 46820, Stop: 46999, Start Num: 20

Candidate Starts for Soap141_68:

(9, 46754), (Start: 10 @46769 has 28 MA's), (14, 46787), (Start: 20 @46820 has 25 MA's), (28, 46898), (30, 46919), (32, 46943),

Gene: Stephig9_34 Start: 26583, Stop: 26377, Start Num: 13

Candidate Starts for Stephig9_34:

(8, 26625), (Start: 13 @26583 has 10 MA's), (28, 26469), (32, 26427), (34, 26388),

Gene: Tourach_67 Start: 46806, Stop: 46988, Start Num: 20

Candidate Starts for Tourach_67:

(9, 46740), (Start: 10 @46755 has 28 MA's), (14, 46773), (Start: 20 @46806 has 25 MA's), (31, 46920), (32, 46932),

Gene: TpudiCK_45 Start: 34225, Stop: 33995, Start Num: 10

Candidate Starts for TpudiCK_45:

(2, 34426), (4, 34369), (5, 34327), (6, 34291), (7, 34282), (Start: 10 @34225 has 28 MA's), (Start: 20 @34177 has 25 MA's), (26, 34105), (27, 34099), (32, 34048), (34, 34009),

Gene: Tweety19_59 Start: 37551, Stop: 37787, Start Num: 11

Candidate Starts for Tweety19_59:

(Start: 11 @37551 has 4 MA's), (21, 37605), (33, 37752),

Gene: TyDawg_43 Start: 34226, Stop: 33996, Start Num: 10

Candidate Starts for TyDawg_43:

(2, 34427), (4, 34370), (5, 34328), (6, 34292), (7, 34283), (Start: 10 @34226 has 28 MA's), (Start: 20 @34178 has 25 MA's), (26, 34106), (27, 34100), (32, 34049), (34, 34010),

Gene: Underpass_59 Start: 41796, Stop: 41975, Start Num: 20

Candidate Starts for Underpass_59:

(9, 41730), (Start: 10 @41745 has 28 MA's), (14, 41763), (Start: 20 @41796 has 25 MA's), (28, 41874), (30, 41895), (32, 41919),

Gene: Vetrix_68 Start: 46764, Stop: 46946, Start Num: 20

Candidate Starts for Vetrix_68:

(9, 46698), (Start: 10 @46713 has 28 MA's), (14, 46731), (Start: 20 @46764 has 25 MA's), (28, 46845), (30, 46866), (32, 46890),

Gene: Wigglewigggle_68 Start: 46784, Stop: 46963, Start Num: 20

Candidate Starts for Wigglewigggle_68:

(9, 46718), (Start: 10 @46733 has 28 MA's), (14, 46751), (Start: 20 @46784 has 25 MA's), (28, 46862), (30, 46883), (32, 46907),

Gene: Wilder_69 Start: 46730, Stop: 46912, Start Num: 20

Candidate Starts for Wilder_69:

(9, 46664), (Start: 10 @46679 has 28 MA's), (14, 46697), (Start: 20 @46730 has 25 MA's), (28, 46811), (30, 46832), (32, 46856),

Gene: Winky_68 Start: 46673, Stop: 46906, Start Num: 10

Candidate Starts for Winky_68:

(9, 46658), (Start: 10 @46673 has 28 MA's), (14, 46691), (Start: 20 @46724 has 25 MA's), (28, 46805), (30, 46826), (32, 46850),

Gene: Zakai_69 Start: 47050, Stop: 47232, Start Num: 20

Candidate Starts for Zakai_69:

(9, 46984), (Start: 10 @46999 has 28 MA's), (14, 47017), (Start: 20 @47050 has 25 MA's), (28, 47131), (30, 47152), (32, 47176),

Gene: ZhongYanYuan_67 Start: 46619, Stop: 46801, Start Num: 20

Candidate Starts for ZhongYanYuan_67:

(9, 46553), (Start: 10 @46568 has 28 MA's), (14, 46586), (Start: 20 @46619 has 25 MA's), (31, 46733), (32, 46745),