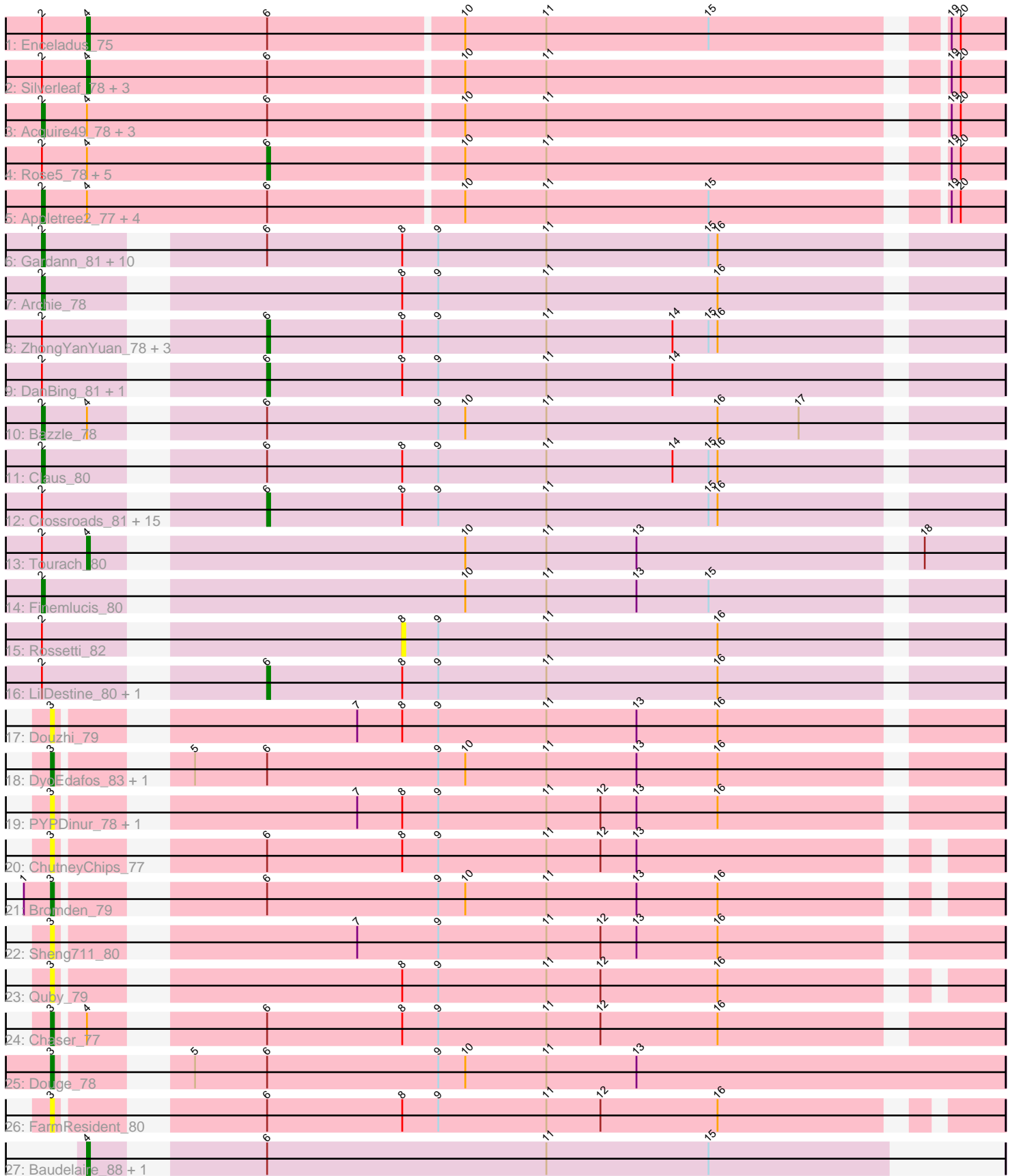


Pham 296514



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 296514 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296514 has 75 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Enceladus_75
- Track 2 : Silverleaf_78, Tyson_79, Calm_80, Halena_76
- Track 3 : Acquire49_78, MAckerman_76, Wyatt2_79, Zaria_79
- Track 4 : Rose5_78, CicholasNage_75, AvadaKedavra_78, UPIE_77, Wamburgrxpress_78, LeBron_77
- Track 5 : Appletree2_77, JoeDirt_78, Poochiewood_76, DirkDirk_75, OhShagHennessy_75
- Track 6 : Gardann_81, Itos_80, Winky_81, Miley16_81, Wilder_82, Kahlid_81, MkaliMitinis3_82, Rumpelstiltskin_78, Zakai_82, Breezona_81, Faith1_81
- Track 7 : Archie_78
- Track 8 : ZhongYanYuan_78, DHan_84, Hafay_82, Wigglewiggle_80
- Track 9 : DanBing_81, Baoshan_79
- Track 10 : Bazzle_78
- Track 11 : Claus_80
- Track 12 : Crossroads_81, Loadrie_80, SoJulia_83, Sarshaun_82, BobsGarage_81, Soap141_81, Netyap_82, BigCheese_81, Gabriela_80, Underpass_72, Lynnae_83, DrSeegs_81, Nicholasp3_81, Lewan_82, OverPar_83, GuuelaD_79
- Track 13 : Tourach_80
- Track 14 : Finemlucis_80
- Track 15 : Rossetti_82
- Track 16 : LilDestine_80, Vetrix_80
- Track 17 : Douzhi_79
- Track 18 : DyoEdafos_83, Kropertea_75
- Track 19 : PYPDinur_78, BrainDrainer_79
- Track 20 : ChutneyChips_77
- Track 21 : Bromden_79
- Track 22 : Sheng711_80
- Track 23 : Quby_79
- Track 24 : Chaser_77
- Track 25 : Douge_78
- Track 26 : FarmResident_80
- Track 27 : Baudelaire_88, Aegeus_88

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

The start number called the most often in the published annotations is 2, it was called in 23 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49_78, Appletree2_77, Archie_78, Bazzle_78, Breezona_81, Claus_80, DirkDirk_75, Faith1_81, Finemlucis_80, Gardann_81, Itos_80, JoeDirt_78, Kahlid_81, MAckerman_76, Miley16_81, MkaliMitinis3_82, OhShagHennessy_75, Poochiewood_76, Rumpelstiltskin_78, Wilder_82, Winky_81, Wyatt2_79, Zakai_82, Zaria_79,

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

- AvadaKedavra_78, Baoshan_79, BigCheese_81, BobsGarage_81, Calm_80, CicholasNage_75, Crossroads_81, DHan_84, DanBing_81, DrSeegs_81, Enceladus_75, Gabriela_80, GuuelaD_79, Hafay_82, Halena_76, LeBron_77, Lewan_82, LilDestine_80, Loadrie_80, Lynnae_83, Netyap_82, Nicholasp3_81, OverPar_83, Rose5_78, Rossetti_82, Sarshaun_82, Silverleaf_78, SoJulia_83, Soap141_81, Tourach_80, Tyson_79, UPIE_77, Underpass_72, Vetrix_80, Wamburgxpress_78, Wigglewiggles_80, ZhongYanYuan_78,

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

- Aegeus_88, Baudelaire_88, BrainDrainer_79, Bromden_79, Chaser_77, ChutneyChips_77, Douge_78, Douzhi_79, DyoEdafos_83, FarmResident_80, Kropertea_75, PYPDinur_78, Quby_79, Sheng711_80,

Summary by start number:

Start 2:

- Found in 61 of 75 (81.3%) of genes in pham
- Manual Annotations of this start: 23 of 56
- Called 39.3% of time when present
- Phage (with cluster) where this start called: Acquire49_78 (L1), Appletree2_77 (L1), Archie_78 (L2), Bazzle_78 (L2), Breezona_81 (L2), Claus_80 (L2), DirkDirk_75 (L1), Faith1_81 (L2), Finemlucis_80 (L2), Gardann_81 (L2), Itos_80 (L2), JoeDirt_78 (L1), Kahlid_81 (L2), MAckerman_76 (L1), Miley16_81 (L2), MkaliMitinis3_82 (L2), OhShagHennessy_75 (L1), Poochiewood_76 (L1), Rumpelstiltskin_78 (L2), Wilder_82 (L2), Winky_81 (L2), Wyatt2_79 (L1), Zakai_82 (L2), Zaria_79 (L1),

Start 3:

- Found in 12 of 75 (16.0%) of genes in pham
- Manual Annotations of this start: 4 of 56
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrainDrainer_79 (L4), Bromden_79 (L4), Chaser_77 (L4), ChutneyChips_77 (L4), Douge_78 (L4), Douzhi_79 (L4), DyoEdafos_83 (L4), FarmResident_80 (L4), Kropertea_75 (L4), PYPDinur_78 (L4), Quby_79 (L4), Sheng711_80 (L4),

Start 4:

- Found in 25 of 75 (33.3%) of genes in pham
- Manual Annotations of this start: 8 of 56
- Called 32.0% of time when present
- Phage (with cluster) where this start called: Aegeus_88 (L5), Baudelaire_88 (L5), Calm_80 (L1), Enceladus_75 (L1), Halena_76 (L1), Silverleaf_78 (L1), Tourach_80

(L2), Tyson_79 (L1),

Start 6:

- Found in 66 of 75 (88.0%) of genes in pham
- Manual Annotations of this start: 21 of 56
- Called 45.5% of time when present
- Phage (with cluster) where this start called: AvadaKedavra_78 (L1), Baoshan_79 (L2), BigCheese_81 (L2), BobsGarage_81 (L2), CicholasNage_75 (L1), Crossroads_81 (L2), DHan_84 (L2), DanBing_81 (L2), DrSeegs_81 (L2), Gabriela_80 (L2), GuuelaD_79 (L2), Hafay_82 (L2), LeBron_77 (L1), Lewan_82 (L2), LilDestine_80 (L2), Loadrie_80 (L2), Lynnae_83 (L2), Netyap_82 (L2), Nicholasp3_81 (L2), OverPar_83 (L2), Rose5_78 (L1), Sarshaun_82 (L2), SoJulia_83 (L2), Soap141_81 (L2), UPIE_77 (L1), Underpass_72 (L2), Vetrrix_80 (L2), Wamburgxpress_78 (L1), Wigglewiggles_80 (L2), ZhongYanYuan_78 (L2),

Start 8:

- Found in 45 of 75 (60.0%) of genes in pham
- No Manual Annotations of this start.
- Called 2.2% of time when present
- Phage (with cluster) where this start called: Rossetti_82 (L2),

Summary by clusters:

There are 4 clusters represented in this pham: L4, L5, L2, L1,

Info for manual annotations of cluster L1:

- Start number 2 was manually annotated 8 times for cluster L1.
- Start number 4 was manually annotated 5 times for cluster L1.
- Start number 6 was manually annotated 6 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 2 was manually annotated 15 times for cluster L2.
- Start number 4 was manually annotated 1 time for cluster L2.
- Start number 6 was manually annotated 15 times for cluster L2.

Info for manual annotations of cluster L4:

- Start number 3 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 4 was manually annotated 2 times for cluster L5.

Gene Information:

Gene: Acquire49_78 Start: 52009, Stop: 52314, Start Num: 2

Candidate Starts for Acquire49_78:

(Start: 2 @52009 has 23 MA's), (Start: 4 @52024 has 8 MA's), (Start: 6 @52084 has 21 MA's), (10, 52147), (11, 52174), (19, 52297), (20, 52300),

Gene: Aegeus_88 Start: 54840, Stop: 55091, Start Num: 4

Candidate Starts for Aegeus_88:

(Start: 4 @54840 has 8 MA's), (Start: 6 @54885 has 21 MA's), (11, 54978), (15, 55032),

Gene: Appletree2_77 Start: 51620, Stop: 51925, Start Num: 2
Candidate Starts for Appletree2_77:
(Start: 2 @51620 has 23 MA's), (Start: 4 @51635 has 8 MA's), (Start: 6 @51695 has 21 MA's), (10, 51758), (11, 51785), (15, 51839), (19, 51908), (20, 51911),

Gene: Archie_78 Start: 53502, Stop: 53798, Start Num: 2
Candidate Starts for Archie_78:
(Start: 2 @53502 has 23 MA's), (8, 53607), (9, 53619), (11, 53655), (16, 53712),

Gene: AvadaKedavra_78 Start: 52163, Stop: 52393, Start Num: 6
Candidate Starts for AvadaKedavra_78:
(Start: 2 @52088 has 23 MA's), (Start: 4 @52103 has 8 MA's), (Start: 6 @52163 has 21 MA's), (10, 52226), (11, 52253), (19, 52376), (20, 52379),

Gene: Baoshan_79 Start: 53848, Stop: 54084, Start Num: 6
Candidate Starts for Baoshan_79:
(Start: 2 @53788 has 23 MA's), (Start: 6 @53848 has 21 MA's), (8, 53893), (9, 53905), (11, 53941), (14, 53983),

Gene: Baudelaire_88 Start: 54840, Stop: 55091, Start Num: 4
Candidate Starts for Baudelaire_88:
(Start: 4 @54840 has 8 MA's), (Start: 6 @54885 has 21 MA's), (11, 54978), (15, 55032),

Gene: Bazzle_78 Start: 53691, Stop: 53987, Start Num: 2
Candidate Starts for Bazzle_78:
(Start: 2 @53691 has 23 MA's), (Start: 4 @53706 has 8 MA's), (Start: 6 @53751 has 21 MA's), (9, 53808), (10, 53817), (11, 53844), (16, 53901), (17, 53928),

Gene: BigCheese_81 Start: 53978, Stop: 54214, Start Num: 6
Candidate Starts for BigCheese_81:
(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071), (15, 54125), (16, 54128),

Gene: BobsGarage_81 Start: 53978, Stop: 54214, Start Num: 6
Candidate Starts for BobsGarage_81:
(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071), (15, 54125), (16, 54128),

Gene: BrainDrainer_79 Start: 52733, Stop: 53023, Start Num: 3
Candidate Starts for BrainDrainer_79:
(Start: 3 @52733 has 4 MA's), (7, 52817), (8, 52832), (9, 52844), (11, 52880), (12, 52898), (13, 52910), (16, 52937),

Gene: Breezona_81 Start: 53918, Stop: 54214, Start Num: 2
Candidate Starts for Breezona_81:
(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071), (15, 54125), (16, 54128),

Gene: Bromden_79 Start: 53366, Stop: 53650, Start Num: 3
Candidate Starts for Bromden_79:
(1, 53357), (Start: 3 @53366 has 4 MA's), (Start: 6 @53420 has 21 MA's), (9, 53477), (10, 53486), (11, 53513), (13, 53543), (16, 53570),

Gene: Calm_80 Start: 52346, Stop: 52636, Start Num: 4

Candidate Starts for Calm_80:

(Start: 2 @52331 has 23 MA's), (Start: 4 @52346 has 8 MA's), (Start: 6 @52406 has 21 MA's), (10, 52469), (11, 52496), (19, 52619), (20, 52622),

Gene: Chaser_77 Start: 52365, Stop: 52655, Start Num: 3

Candidate Starts for Chaser_77:

(Start: 3 @52365 has 4 MA's), (Start: 4 @52374 has 8 MA's), (Start: 6 @52419 has 21 MA's), (8, 52464), (9, 52476), (11, 52512), (12, 52530), (16, 52569),

Gene: ChutneyChips_77 Start: 52710, Stop: 52994, Start Num: 3

Candidate Starts for ChutneyChips_77:

(Start: 3 @52710 has 4 MA's), (Start: 6 @52764 has 21 MA's), (8, 52809), (9, 52821), (11, 52857), (12, 52875), (13, 52887),

Gene: CicholasNage_75 Start: 51748, Stop: 51978, Start Num: 6

Candidate Starts for CicholasNage_75:

(Start: 2 @51673 has 23 MA's), (Start: 4 @51688 has 8 MA's), (Start: 6 @51748 has 21 MA's), (10, 51811), (11, 51838), (19, 51961), (20, 51964),

Gene: Claus_80 Start: 53853, Stop: 54149, Start Num: 2

Candidate Starts for Claus_80:

(Start: 2 @53853 has 23 MA's), (Start: 6 @53913 has 21 MA's), (8, 53958), (9, 53970), (11, 54006), (14, 54048), (15, 54060), (16, 54063),

Gene: Crossroads_81 Start: 54053, Stop: 54289, Start Num: 6

Candidate Starts for Crossroads_81:

(Start: 2 @53993 has 23 MA's), (Start: 6 @54053 has 21 MA's), (8, 54098), (9, 54110), (11, 54146), (15, 54200), (16, 54203),

Gene: DHan_84 Start: 54131, Stop: 54367, Start Num: 6

Candidate Starts for DHan_84:

(Start: 2 @54071 has 23 MA's), (Start: 6 @54131 has 21 MA's), (8, 54176), (9, 54188), (11, 54224), (14, 54266), (15, 54278), (16, 54281),

Gene: DanBing_81 Start: 53783, Stop: 54019, Start Num: 6

Candidate Starts for DanBing_81:

(Start: 2 @53723 has 23 MA's), (Start: 6 @53783 has 21 MA's), (8, 53828), (9, 53840), (11, 53876), (14, 53918),

Gene: DirkDirk_75 Start: 51200, Stop: 51505, Start Num: 2

Candidate Starts for DirkDirk_75:

(Start: 2 @51200 has 23 MA's), (Start: 4 @51215 has 8 MA's), (Start: 6 @51275 has 21 MA's), (10, 51338), (11, 51365), (15, 51419), (19, 51488), (20, 51491),

Gene: Douge_78 Start: 52288, Stop: 52587, Start Num: 3

Candidate Starts for Douge_78:

(Start: 3 @52288 has 4 MA's), (5, 52318), (Start: 6 @52342 has 21 MA's), (9, 52399), (10, 52408), (11, 52435), (13, 52465),

Gene: Douzhi_79 Start: 52550, Stop: 52840, Start Num: 3

Candidate Starts for Douzhi_79:

(Start: 3 @52550 has 4 MA's), (7, 52634), (8, 52649), (9, 52661), (11, 52697), (13, 52727), (16, 52754),

Gene: DrSeegs_81 Start: 53978, Stop: 54214, Start Num: 6

Candidate Starts for DrSeegs_81:

(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071), (15, 54125), (16, 54128),

Gene: DyoEdafos_83 Start: 53198, Stop: 53488, Start Num: 3

Candidate Starts for DyoEdafos_83:

(Start: 3 @53198 has 4 MA's), (5, 53228), (Start: 6 @53252 has 21 MA's), (9, 53309), (10, 53318), (11, 53345), (13, 53375), (16, 53402),

Gene: Enceladus_75 Start: 51992, Stop: 52282, Start Num: 4

Candidate Starts for Enceladus_75:

(Start: 2 @51977 has 23 MA's), (Start: 4 @51992 has 8 MA's), (Start: 6 @52052 has 21 MA's), (10, 52115), (11, 52142), (15, 52196), (19, 52265), (20, 52268),

Gene: Faith1_81 Start: 53918, Stop: 54214, Start Num: 2

Candidate Starts for Faith1_81:

(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071), (15, 54125), (16, 54128),

Gene: FarmResident_80 Start: 52292, Stop: 52576, Start Num: 3

Candidate Starts for FarmResident_80:

(Start: 3 @52292 has 4 MA's), (Start: 6 @52346 has 21 MA's), (8, 52391), (9, 52403), (11, 52439), (12, 52457), (16, 52496),

Gene: Finemlucis_80 Start: 54386, Stop: 54682, Start Num: 2

Candidate Starts for Finemlucis_80:

(Start: 2 @54386 has 23 MA's), (10, 54512), (11, 54539), (13, 54569), (15, 54593),

Gene: Gabriela_80 Start: 53324, Stop: 53560, Start Num: 6

Candidate Starts for Gabriela_80:

(Start: 2 @53264 has 23 MA's), (Start: 6 @53324 has 21 MA's), (8, 53369), (9, 53381), (11, 53417), (15, 53471), (16, 53474),

Gene: Gardann_81 Start: 53753, Stop: 54049, Start Num: 2

Candidate Starts for Gardann_81:

(Start: 2 @53753 has 23 MA's), (Start: 6 @53813 has 21 MA's), (8, 53858), (9, 53870), (11, 53906), (15, 53960), (16, 53963),

Gene: GuuelaD_79 Start: 54093, Stop: 54329, Start Num: 6

Candidate Starts for GuuelaD_79:

(Start: 2 @54033 has 23 MA's), (Start: 6 @54093 has 21 MA's), (8, 54138), (9, 54150), (11, 54186), (15, 54240), (16, 54243),

Gene: Hafay_82 Start: 53908, Stop: 54144, Start Num: 6

Candidate Starts for Hafay_82:

(Start: 2 @53848 has 23 MA's), (Start: 6 @53908 has 21 MA's), (8, 53953), (9, 53965), (11, 54001), (14, 54043), (15, 54055), (16, 54058),

Gene: Halena_76 Start: 51262, Stop: 51552, Start Num: 4

Candidate Starts for Halena_76:

(Start: 2 @51247 has 23 MA's), (Start: 4 @51262 has 8 MA's), (Start: 6 @51322 has 21 MA's), (10, 51385), (11, 51412), (19, 51535), (20, 51538),

Gene: Itos_80 Start: 52824, Stop: 53120, Start Num: 2

Candidate Starts for Itos_80:

(Start: 2 @52824 has 23 MA's), (Start: 6 @52884 has 21 MA's), (8, 52929), (9, 52941), (11, 52977), (15, 53031), (16, 53034),

Gene: JoeDirt_78 Start: 52575, Stop: 52880, Start Num: 2

Candidate Starts for JoeDirt_78:

(Start: 2 @52575 has 23 MA's), (Start: 4 @52590 has 8 MA's), (Start: 6 @52650 has 21 MA's), (10, 52713), (11, 52740), (15, 52794), (19, 52863), (20, 52866),

Gene: Kahlid_81 Start: 53924, Stop: 54220, Start Num: 2

Candidate Starts for Kahlid_81:

(Start: 2 @53924 has 23 MA's), (Start: 6 @53984 has 21 MA's), (8, 54029), (9, 54041), (11, 54077), (15, 54131), (16, 54134),

Gene: Kropertea_75 Start: 52480, Stop: 52770, Start Num: 3

Candidate Starts for Kropertea_75:

(Start: 3 @52480 has 4 MA's), (5, 52510), (Start: 6 @52534 has 21 MA's), (9, 52591), (10, 52600), (11, 52627), (13, 52657), (16, 52684),

Gene: LeBron_77 Start: 51321, Stop: 51551, Start Num: 6

Candidate Starts for LeBron_77:

(Start: 2 @51246 has 23 MA's), (Start: 4 @51261 has 8 MA's), (Start: 6 @51321 has 21 MA's), (10, 51384), (11, 51411), (19, 51534), (20, 51537),

Gene: Lewan_82 Start: 54036, Stop: 54272, Start Num: 6

Candidate Starts for Lewan_82:

(Start: 2 @53976 has 23 MA's), (Start: 6 @54036 has 21 MA's), (8, 54081), (9, 54093), (11, 54129), (15, 54183), (16, 54186),

Gene: LilDestine_80 Start: 53888, Stop: 54124, Start Num: 6

Candidate Starts for LilDestine_80:

(Start: 2 @53828 has 23 MA's), (Start: 6 @53888 has 21 MA's), (8, 53933), (9, 53945), (11, 53981), (16, 54038),

Gene: Loadrie_80 Start: 54063, Stop: 54299, Start Num: 6

Candidate Starts for Loadrie_80:

(Start: 2 @54003 has 23 MA's), (Start: 6 @54063 has 21 MA's), (8, 54108), (9, 54120), (11, 54156), (15, 54210), (16, 54213),

Gene: Lynnae_83 Start: 53996, Stop: 54232, Start Num: 6

Candidate Starts for Lynnae_83:

(Start: 2 @53936 has 23 MA's), (Start: 6 @53996 has 21 MA's), (8, 54041), (9, 54053), (11, 54089), (15, 54143), (16, 54146),

Gene: MAckerman_76 Start: 51240, Stop: 51545, Start Num: 2

Candidate Starts for MAckerman_76:

(Start: 2 @51240 has 23 MA's), (Start: 4 @51255 has 8 MA's), (Start: 6 @51315 has 21 MA's), (10, 51378), (11, 51405), (19, 51528), (20, 51531),

Gene: Miley16_81 Start: 53918, Stop: 54214, Start Num: 2
Candidate Starts for Miley16_81:
(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071),
(15, 54125), (16, 54128),

Gene: MkaliMitinis3_82 Start: 53987, Stop: 54283, Start Num: 2
Candidate Starts for MkaliMitinis3_82:
(Start: 2 @53987 has 23 MA's), (Start: 6 @54047 has 21 MA's), (8, 54092), (9, 54104), (11, 54140),
(15, 54194), (16, 54197),

Gene: Netyap_82 Start: 53979, Stop: 54215, Start Num: 6
Candidate Starts for Netyap_82:
(Start: 2 @53919 has 23 MA's), (Start: 6 @53979 has 21 MA's), (8, 54024), (9, 54036), (11, 54072),
(15, 54126), (16, 54129),

Gene: Nicholasp3_81 Start: 53813, Stop: 54049, Start Num: 6
Candidate Starts for Nicholasp3_81:
(Start: 2 @53753 has 23 MA's), (Start: 6 @53813 has 21 MA's), (8, 53858), (9, 53870), (11, 53906),
(15, 53960), (16, 53963),

Gene: OhShagHennessy_75 Start: 51278, Stop: 51583, Start Num: 2
Candidate Starts for OhShagHennessy_75:
(Start: 2 @51278 has 23 MA's), (Start: 4 @51293 has 8 MA's), (Start: 6 @51353 has 21 MA's), (10,
51416), (11, 51443), (15, 51497), (19, 51566), (20, 51569),

Gene: OverPar_83 Start: 54063, Stop: 54299, Start Num: 6
Candidate Starts for OverPar_83:
(Start: 2 @54003 has 23 MA's), (Start: 6 @54063 has 21 MA's), (8, 54108), (9, 54120), (11, 54156),
(15, 54210), (16, 54213),

Gene: PYPDinur_78 Start: 52985, Stop: 53275, Start Num: 3
Candidate Starts for PYPDinur_78:
(Start: 3 @52985 has 4 MA's), (7, 53069), (8, 53084), (9, 53096), (11, 53132), (12, 53150), (13, 53162),
(16, 53189),

Gene: Poochiewood_76 Start: 52583, Stop: 52888, Start Num: 2
Candidate Starts for Poochiewood_76:
(Start: 2 @52583 has 23 MA's), (Start: 4 @52598 has 8 MA's), (Start: 6 @52658 has 21 MA's), (10,
52721), (11, 52748), (15, 52802), (19, 52871), (20, 52874),

Gene: Quby_79 Start: 52316, Stop: 52600, Start Num: 3
Candidate Starts for Quby_79:
(Start: 3 @52316 has 4 MA's), (8, 52415), (9, 52427), (11, 52463), (12, 52481), (16, 52520),

Gene: Rose5_78 Start: 52495, Stop: 52725, Start Num: 6
Candidate Starts for Rose5_78:
(Start: 2 @52420 has 23 MA's), (Start: 4 @52435 has 8 MA's), (Start: 6 @52495 has 21 MA's), (10,
52558), (11, 52585), (19, 52708), (20, 52711),

Gene: Rossetti_82 Start: 54432, Stop: 54623, Start Num: 8
Candidate Starts for Rossetti_82:
(Start: 2 @54327 has 23 MA's), (8, 54432), (9, 54444), (11, 54480), (16, 54537),

Gene: Rumpelstiltskin_78 Start: 53546, Stop: 53842, Start Num: 2
Candidate Starts for Rumpelstiltskin_78:
(Start: 2 @53546 has 23 MA's), (Start: 6 @53606 has 21 MA's), (8, 53651), (9, 53663), (11, 53699),
(15, 53753), (16, 53756),

Gene: Sarshaun_82 Start: 54071, Stop: 54307, Start Num: 6
Candidate Starts for Sarshaun_82:
(Start: 2 @54011 has 23 MA's), (Start: 6 @54071 has 21 MA's), (8, 54116), (9, 54128), (11, 54164),
(15, 54218), (16, 54221),

Gene: Sheng711_80 Start: 52619, Stop: 52909, Start Num: 3
Candidate Starts for Sheng711_80:
(Start: 3 @52619 has 4 MA's), (7, 52703), (9, 52730), (11, 52766), (12, 52784), (13, 52796), (16,
52823),

Gene: Silverleaf_78 Start: 51891, Stop: 52181, Start Num: 4
Candidate Starts for Silverleaf_78:
(Start: 2 @51876 has 23 MA's), (Start: 4 @51891 has 8 MA's), (Start: 6 @51951 has 21 MA's), (10,
52014), (11, 52041), (19, 52164), (20, 52167),

Gene: SoJulia_83 Start: 55139, Stop: 55375, Start Num: 6
Candidate Starts for SoJulia_83:
(Start: 2 @55079 has 23 MA's), (Start: 6 @55139 has 21 MA's), (8, 55184), (9, 55196), (11, 55232),
(15, 55286), (16, 55289),

Gene: Soap141_81 Start: 54071, Stop: 54307, Start Num: 6
Candidate Starts for Soap141_81:
(Start: 2 @54011 has 23 MA's), (Start: 6 @54071 has 21 MA's), (8, 54116), (9, 54128), (11, 54164),
(15, 54218), (16, 54221),

Gene: Tourach_80 Start: 54051, Stop: 54332, Start Num: 4
Candidate Starts for Tourach_80:
(Start: 2 @54036 has 23 MA's), (Start: 4 @54051 has 8 MA's), (10, 54162), (11, 54189), (13, 54219),
(18, 54306),

Gene: Tyson_79 Start: 52361, Stop: 52651, Start Num: 4
Candidate Starts for Tyson_79:
(Start: 2 @52346 has 23 MA's), (Start: 4 @52361 has 8 MA's), (Start: 6 @52421 has 21 MA's), (10,
52484), (11, 52511), (19, 52634), (20, 52637),

Gene: UPIE_77 Start: 52017, Stop: 52247, Start Num: 6
Candidate Starts for UPIE_77:
(Start: 2 @51942 has 23 MA's), (Start: 4 @51957 has 8 MA's), (Start: 6 @52017 has 21 MA's), (10,
52080), (11, 52107), (19, 52230), (20, 52233),

Gene: Underpass_72 Start: 48849, Stop: 49085, Start Num: 6
Candidate Starts for Underpass_72:
(Start: 2 @48789 has 23 MA's), (Start: 6 @48849 has 21 MA's), (8, 48894), (9, 48906), (11, 48942),
(15, 48996), (16, 48999),

Gene: Vetrix_80 Start: 53895, Stop: 54131, Start Num: 6
Candidate Starts for Vetrix_80:

(Start: 2 @53835 has 23 MA's), (Start: 6 @53895 has 21 MA's), (8, 53940), (9, 53952), (11, 53988), (16, 54045),

Gene: Wamburgexpress_78 Start: 52456, Stop: 52686, Start Num: 6

Candidate Starts for Wamburgexpress_78:

(Start: 2 @52381 has 23 MA's), (Start: 4 @52396 has 8 MA's), (Start: 6 @52456 has 21 MA's), (10, 52519), (11, 52546), (19, 52669), (20, 52672),

Gene: Wigglewigggle_80 Start: 53840, Stop: 54076, Start Num: 6

Candidate Starts for Wigglewigggle_80:

(Start: 2 @53780 has 23 MA's), (Start: 6 @53840 has 21 MA's), (8, 53885), (9, 53897), (11, 53933), (14, 53975), (15, 53987), (16, 53990),

Gene: Wilder_82 Start: 53924, Stop: 54220, Start Num: 2

Candidate Starts for Wilder_82:

(Start: 2 @53924 has 23 MA's), (Start: 6 @53984 has 21 MA's), (8, 54029), (9, 54041), (11, 54077), (15, 54131), (16, 54134),

Gene: Winky_81 Start: 53918, Stop: 54214, Start Num: 2

Candidate Starts for Winky_81:

(Start: 2 @53918 has 23 MA's), (Start: 6 @53978 has 21 MA's), (8, 54023), (9, 54035), (11, 54071), (15, 54125), (16, 54128),

Gene: Wyatt2_79 Start: 52344, Stop: 52649, Start Num: 2

Candidate Starts for Wyatt2_79:

(Start: 2 @52344 has 23 MA's), (Start: 4 @52359 has 8 MA's), (Start: 6 @52419 has 21 MA's), (10, 52482), (11, 52509), (19, 52632), (20, 52635),

Gene: Zakai_82 Start: 54244, Stop: 54540, Start Num: 2

Candidate Starts for Zakai_82:

(Start: 2 @54244 has 23 MA's), (Start: 6 @54304 has 21 MA's), (8, 54349), (9, 54361), (11, 54397), (15, 54451), (16, 54454),

Gene: Zaria_79 Start: 51796, Stop: 52101, Start Num: 2

Candidate Starts for Zaria_79:

(Start: 2 @51796 has 23 MA's), (Start: 4 @51811 has 8 MA's), (Start: 6 @51871 has 21 MA's), (10, 51934), (11, 51961), (19, 52084), (20, 52087),

Gene: ZhongYanYuan_78 Start: 53431, Stop: 53667, Start Num: 6

Candidate Starts for ZhongYanYuan_78:

(Start: 2 @53371 has 23 MA's), (Start: 6 @53431 has 21 MA's), (8, 53476), (9, 53488), (11, 53524), (14, 53566), (15, 53578), (16, 53581),