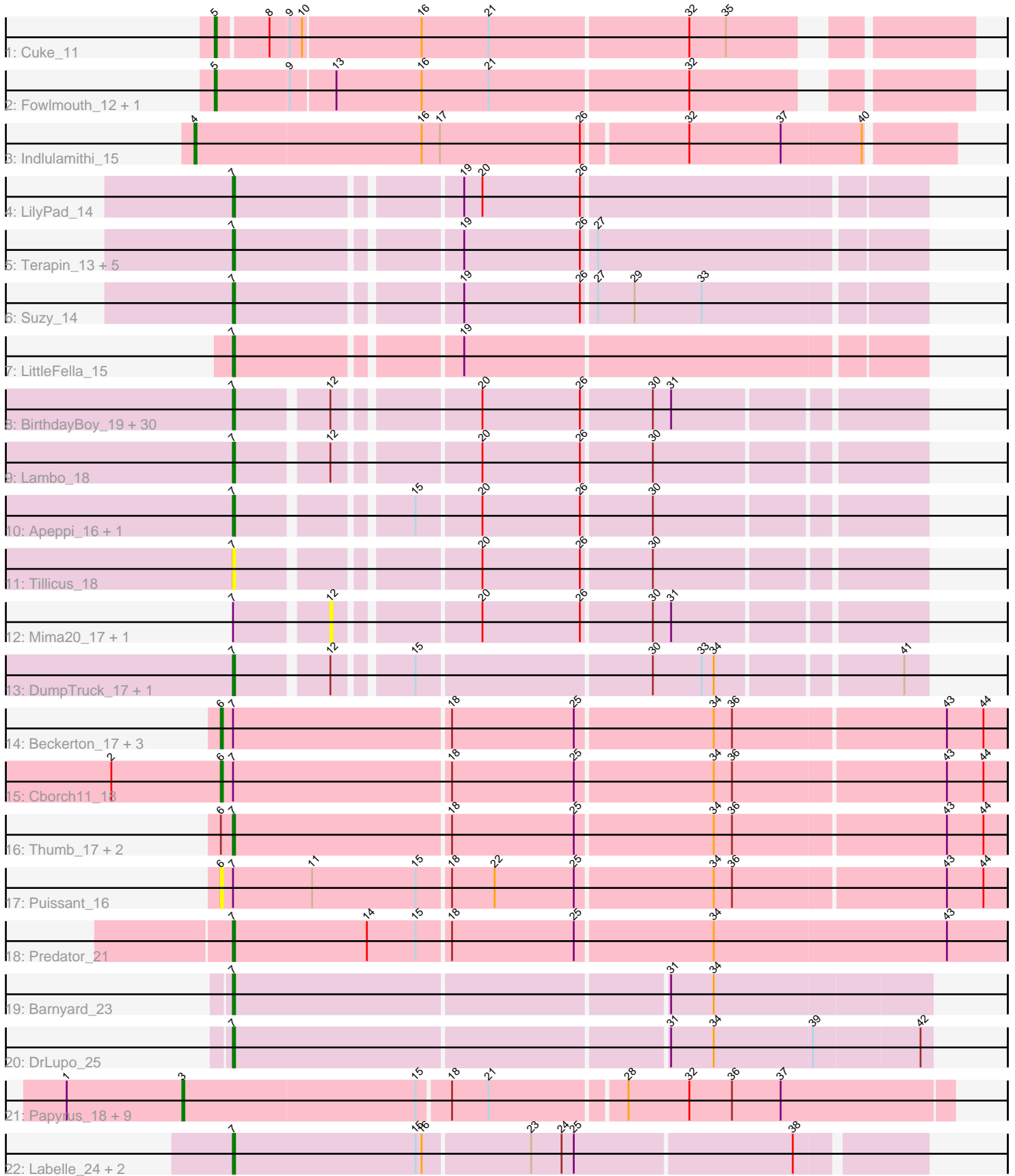


Pham 216101



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 216101 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216101 has 77 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Cuke_11
- Track 2 : Fowlmouth_12, MrMiyagi_12
- Track 3 : Indlulamithi_15
- Track 4 : LilyPad_14
- Track 5 : Terapin_13, Djokovic_13, Madi_13, Sienna_13, BiteSize_13, Beyoncage_13
- Track 6 : Suzy_14
- Track 7 : LittleFella_15
- Track 8 : BirthdayBoy_19, Genamy16_17, NovaSharks_17, Patos_19, Stormer_16, LavAbarElk_16, Jamemuya19_15, Rumi_17, Gibbin_19, NorManre_19, OtterstedtS21_18, Fulcrum_19, Sampudon_18, Alephlan_15, GOATification_19, RazorC_16, DaviePasture_18, DoobyDoo_17, Erutan_18, GretelLyn_18, Yikes_19, MoiGyank_20, Ranch_18, Alyssamiracle_17, Astralis_16, Zany_17, Lila22_18, Wojtek_17, ParvusTarda_18, Sadboi_18, Jalebi_18
- Track 9 : Lambo_18
- Track 10 : Apeppi_16, LuckyLeo_17
- Track 11 : Tillicus_18
- Track 12 : Mima20_17, Avian_16
- Track 13 : DumpTruck_17, Xenia2_18
- Track 14 : Beckerton_17, Konstantine_22, Phreeze_17, Damien_17
- Track 15 : Cborch11_18
- Track 16 : Thumb_17, Megatron06_19, Oaker_17
- Track 17 : Puissant_16
- Track 18 : Predator_21
- Track 19 : Barnyard_23
- Track 20 : DrLupo_25
- Track 21 : Papyrus_18, Send513_18, Nilo_19, Riparian_18, MontyDev_18, Candle_18, Rope_18, Yelo_18, Weiss13_18, Zenon_19
- Track 22 : Labelle_24, Madruga_23, Patience_25

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

The start number called the most often in the published annotations is 7, it was called in 48 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alephlan_15, Alyssamiracle_17, Apeppi_16, Astralis_16, Barnyard_23, Beyoncage_13, BirthdayBoy_19, BiteSize_13, DaviePasture_18, Djokovic_13, DoobyDoo_17, DrLupo_25, DumpTruck_17, Erutan_18, Fulcrum_19, GOATification_19, Genamy16_17, Gibbin_19, Gretellyn_18, Jalebi_18, Jamemuya19_15, Labelle_24, Lambo_18, LavAbarElk_16, Lila22_18, LilyPad_14, LittleFella_15, LuckyLeo_17, Madi_13, Madrugua_23, Megatron06_19, MoiGyank_20, NorManre_19, NovaSharks_17, Oaker_17, OtterstedtS21_18, ParvusTarda_18, Patience_25, Patos_19, Predator_21, Ranch_18, RazorC_16, Rumi_17, Sadboi_18, Sampudon_18, Sienna_13, Stormer_16, Suzy_14, Terapin_13, Thumb_17, Tillicus_18, Wojtek_17, Xenia2_18, Yikes_19, Zany_17,

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

- Avian_16, Beckerton_17, Cborch11_18, Damien_17, Konstantine_22, Mima20_17, Phreeze_17, Puissant_16,

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

- Candle_18, Cuke_11, Fowlmouth_12, Indlulamithi_15, MontyDev_18, MrMiyagi_12, Nilo_19, Papyrus_18, Riparian_18, Rope_18, Send513_18, Weiss13_18, Yelo_18, Zenon_19,

Summary by start number:

Start 3:

- Found in 10 of 77 (13.0%) of genes in pham
- Manual Annotations of this start: 9 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Candle_18 (R), MontyDev_18 (R), Nilo_19 (R), Papyrus_18 (R), Riparian_18 (R), Rope_18 (R), Send513_18 (R), Weiss13_18 (R), Yelo_18 (R), Zenon_19 (R),

Start 4:

- Found in 1 of 77 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi_15 (AC),

Start 5:

- Found in 3 of 77 (3.9%) of genes in pham
- Manual Annotations of this start: 3 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cuke_11 (AC), Fowlmouth_12 (AC), MrMiyagi_12 (AC),

Start 6:

- Found in 9 of 77 (11.7%) of genes in pham
- Manual Annotations of this start: 5 of 66
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Beckerton_17 (H1), Cborch11_18 (H1), Damien_17 (H1), Konstantine_22 (H1), Phreeze_17 (H1), Puissant_16 (H1),

Start 7:

- Found in 63 of 77 (81.8%) of genes in pham
- Manual Annotations of this start: 48 of 66
- Called 87.3% of time when present
- Phage (with cluster) where this start called: Alephilan_15 (DV), Alyssamiracle_17 (DV), Apeppi_16 (DV), Astralis_16 (DV), Barnyard_23 (H2), Beyoncage_13 (DG1), BirthdayBoy_19 (DV), BiteSize_13 (DG1), DaviePasture_18 (DV), Djokovic_13 (DG1), DoobyDoo_17 (DV), DrLupo_25 (H2), DumpTruck_17 (DV), Erutan_18 (DV), Fulcrum_19 (DV), GOATification_19 (DV), Genamy16_17 (DV), Gibbin_19 (DV), GretelLyn_18 (DV), Jalebi_18 (DV), Jamemuya19_15 (DV), Labelle_24 (U), Lambo_18 (DV), LavAbarElk_16 (DV), Lila22_18 (DV), LilyPad_14 (DG1), LittleFella_15 (DG2), LuckyLeo_17 (DV), Madi_13 (DG1), Madruga_23 (U), Megatron06_19 (H1), MoiGyank_20 (DV), NorManre_19 (DV), NovaSharks_17 (DV), Oaker_17 (H1), OtterstedtS21_18 (DV), ParvusTarda_18 (DV), Patience_25 (U), Patos_19 (DV), Predator_21 (H1), Ranch_18 (DV), RazorC_16 (DV), Rumi_17 (DV), Sadboi_18 (DV), Sampudon_18 (DV), Sienna_13 (DG1), Stormer_16 (DV), Suzy_14 (DG1), Terapin_13 (DG1), Thumb_17 (H1), Tillicus_18 (DV), Wojtek_17 (DV), Xenia2_18 (DV), Yikes_19 (DV), Zany_17 (DV),

Start 12:

- Found in 36 of 77 (46.8%) of genes in pham
- No Manual Annotations of this start.
- Called 5.6% of time when present
- Phage (with cluster) where this start called: Avian_16 (DV), Mima20_17 (DV),

Summary by clusters:

There are 8 clusters represented in this pham: AC, H2, H1, DG2, DG1, U, DV, R,

Info for manual annotations of cluster AC:

- Start number 4 was manually annotated 1 time for cluster AC.
- Start number 5 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster DG1:

- Start number 7 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 7 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 7 was manually annotated 30 times for cluster DV.

Info for manual annotations of cluster H1:

- Start number 6 was manually annotated 5 times for cluster H1.
- Start number 7 was manually annotated 4 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 7 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 3 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 7 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Alephilan_15 Start: 12943, Stop: 13254, Start Num: 7

Candidate Starts for Alephilan_15:

(Start: 7 @12943 has 48 MA's), (12, 12985), (20, 13048), (26, 13096), (30, 13129), (31, 13138),

Gene: Alyssamiracle_17 Start: 11350, Stop: 11661, Start Num: 7

Candidate Starts for Alyssamiracle_17:

(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Apeppi_16 Start: 13065, Stop: 13376, Start Num: 7

Candidate Starts for Apeppi_16:

(Start: 7 @13065 has 48 MA's), (15, 13140), (20, 13170), (26, 13218), (30, 13251),

Gene: Astralis_16 Start: 11350, Stop: 11661, Start Num: 7

Candidate Starts for Astralis_16:

(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Avian_16 Start: 11392, Stop: 11661, Start Num: 12

Candidate Starts for Avian_16:

(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Barnyard_23 Start: 13941, Stop: 14273, Start Num: 7

Candidate Starts for Barnyard_23:

(Start: 7 @13941 has 48 MA's), (31, 14148), (34, 14169),

Gene: Beckerton_17 Start: 12784, Stop: 13161, Start Num: 6

Candidate Starts for Beckerton_17:

(Start: 6 @12784 has 5 MA's), (Start: 7 @12790 has 48 MA's), (18, 12895), (25, 12955), (34, 13021), (36, 13030), (43, 13132), (44, 13150),

Gene: Beyoncage_13 Start: 8817, Stop: 9137, Start Num: 7

Candidate Starts for Beyoncage_13:

(Start: 7 @8817 has 48 MA's), (19, 8919), (26, 8976), (27, 8982),

Gene: BirthdayBoy_19 Start: 13796, Stop: 14107, Start Num: 7

Candidate Starts for BirthdayBoy_19:

(Start: 7 @13796 has 48 MA's), (12, 13838), (20, 13901), (26, 13949), (30, 13982), (31, 13991),

Gene: BiteSize_13 Start: 8817, Stop: 9137, Start Num: 7

Candidate Starts for BiteSize_13:

(Start: 7 @8817 has 48 MA's), (19, 8919), (26, 8976), (27, 8982),

Gene: Candle_18 Start: 12792, Stop: 13160, Start Num: 3

Candidate Starts for Candle_18:

(1, 12735), (Start: 3 @12792 has 9 MA's), (15, 12906), (18, 12921), (21, 12939), (28, 13002), (32, 13032), (36, 13053), (37, 13077),

Gene: Cborch11_18 Start: 12247, Stop: 12624, Start Num: 6

Candidate Starts for Cborch11_18:

(2, 12193), (Start: 6 @12247 has 5 MA's), (Start: 7 @12253 has 48 MA's), (18, 12358), (25, 12418), (34, 12484), (36, 12493), (43, 12595), (44, 12613),

Gene: Cuke_11 Start: 7988, Stop: 8332, Start Num: 5

Candidate Starts for Cuke_11:

(Start: 5 @7988 has 3 MA's), (8, 8012), (9, 8021), (10, 8027), (16, 8084), (21, 8117), (32, 8213), (35, 8231),

Gene: Damien_17 Start: 12246, Stop: 12623, Start Num: 6

Candidate Starts for Damien_17:

(Start: 6 @12246 has 5 MA's), (Start: 7 @12252 has 48 MA's), (18, 12357), (25, 12417), (34, 12483), (36, 12492), (43, 12594), (44, 12612),

Gene: DaviePasture_18 Start: 13553, Stop: 13864, Start Num: 7

Candidate Starts for DaviePasture_18:

(Start: 7 @13553 has 48 MA's), (12, 13595), (20, 13658), (26, 13706), (30, 13739), (31, 13748),

Gene: Djokovic_13 Start: 8817, Stop: 9137, Start Num: 7

Candidate Starts for Djokovic_13:

(Start: 7 @8817 has 48 MA's), (19, 8919), (26, 8976), (27, 8982),

Gene: DoobyDoo_17 Start: 12730, Stop: 13041, Start Num: 7

Candidate Starts for DoobyDoo_17:

(Start: 7 @12730 has 48 MA's), (12, 12772), (20, 12835), (26, 12883), (30, 12916), (31, 12925),

Gene: DrLupo_25 Start: 14352, Stop: 14684, Start Num: 7

Candidate Starts for DrLupo_25:

(Start: 7 @14352 has 48 MA's), (31, 14559), (34, 14580), (39, 14628), (42, 14679),

Gene: DumpTruck_17 Start: 12984, Stop: 13295, Start Num: 7

Candidate Starts for DumpTruck_17:

(Start: 7 @12984 has 48 MA's), (12, 13026), (15, 13059), (30, 13170), (33, 13194), (34, 13200), (41, 13284),

Gene: Erutan_18 Start: 13243, Stop: 13554, Start Num: 7

Candidate Starts for Erutan_18:

(Start: 7 @13243 has 48 MA's), (12, 13285), (20, 13348), (26, 13396), (30, 13429), (31, 13438),

Gene: Fowlmouth_12 Start: 8156, Stop: 8503, Start Num: 5

Candidate Starts for Fowlmouth_12:

(Start: 5 @8156 has 3 MA's), (9, 8192), (13, 8213), (16, 8255), (21, 8288), (32, 8384),

Gene: Fulcrum_19 Start: 13776, Stop: 14087, Start Num: 7

Candidate Starts for Fulcrum_19:

(Start: 7 @13776 has 48 MA's), (12, 13818), (20, 13881), (26, 13929), (30, 13962), (31, 13971),

Gene: GOATification_19 Start: 13776, Stop: 14087, Start Num: 7

Candidate Starts for GOATification_19:

(Start: 7 @13776 has 48 MA's), (12, 13818), (20, 13881), (26, 13929), (30, 13962), (31, 13971),

Gene: Genamy16_17 Start: 11350, Stop: 11661, Start Num: 7

Candidate Starts for Genamy16_17:

(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Gibbin_19 Start: 13836, Stop: 14147, Start Num: 7

Candidate Starts for Gibbin_19:

(Start: 7 @13836 has 48 MA's), (12, 13878), (20, 13941), (26, 13989), (30, 14022), (31, 14031),

Gene: Gretellyn_18 Start: 14110, Stop: 14421, Start Num: 7

Candidate Starts for Gretellyn_18:

(Start: 7 @14110 has 48 MA's), (12, 14152), (20, 14215), (26, 14263), (30, 14296), (31, 14305),

Gene: Indlulamithi_15 Start: 10237, Stop: 10599, Start Num: 4

Candidate Starts for Indlulamithi_15:

(Start: 4 @10237 has 1 MA's), (16, 10348), (17, 10357), (26, 10426), (32, 10474), (37, 10519), (40, 10558),

Gene: Jalebi_18 Start: 14286, Stop: 14597, Start Num: 7

Candidate Starts for Jalebi_18:

(Start: 7 @14286 has 48 MA's), (12, 14328), (20, 14391), (26, 14439), (30, 14472), (31, 14481),

Gene: Jamemuya19_15 Start: 11350, Stop: 11661, Start Num: 7

Candidate Starts for Jamemuya19_15:

(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Konstantine_22 Start: 13448, Stop: 13825, Start Num: 6

Candidate Starts for Konstantine_22:

(Start: 6 @13448 has 5 MA's), (Start: 7 @13454 has 48 MA's), (18, 13559), (25, 13619), (34, 13685), (36, 13694), (43, 13796), (44, 13814),

Gene: Labelle_24 Start: 15501, Stop: 15830, Start Num: 7

Candidate Starts for Labelle_24:

(Start: 7 @15501 has 48 MA's), (15, 15591), (16, 15594), (23, 15645), (24, 15660), (25, 15666), (38, 15771),

Gene: Lambo_18 Start: 13780, Stop: 14091, Start Num: 7

Candidate Starts for Lambo_18:

(Start: 7 @13780 has 48 MA's), (12, 13822), (20, 13885), (26, 13933), (30, 13966),

Gene: LavAbarElk_16 Start: 12213, Stop: 12524, Start Num: 7

Candidate Starts for LavAbarElk_16:

(Start: 7 @12213 has 48 MA's), (12, 12255), (20, 12318), (26, 12366), (30, 12399), (31, 12408),

Gene: Lila22_18 Start: 13734, Stop: 14045, Start Num: 7

Candidate Starts for Lila22_18:

(Start: 7 @13734 has 48 MA's), (12, 13776), (20, 13839), (26, 13887), (30, 13920), (31, 13929),

Gene: LilyPad_14 Start: 9536, Stop: 9856, Start Num: 7

Candidate Starts for LilyPad_14:

(Start: 7 @9536 has 48 MA's), (19, 9638), (20, 9647), (26, 9695),

Gene: LittleFella_15 Start: 11437, Stop: 11757, Start Num: 7

Candidate Starts for LittleFella_15:

(Start: 7 @11437 has 48 MA's), (19, 11539),

Gene: LuckyLeo_17 Start: 13065, Stop: 13376, Start Num: 7

Candidate Starts for LuckyLeo_17:
(Start: 7 @13065 has 48 MA's), (15, 13140), (20, 13170), (26, 13218), (30, 13251),

Gene: Madi_13 Start: 8817, Stop: 9137, Start Num: 7
Candidate Starts for Madi_13:
(Start: 7 @8817 has 48 MA's), (19, 8919), (26, 8976), (27, 8982),

Gene: Madruga_23 Start: 15170, Stop: 15499, Start Num: 7
Candidate Starts for Madruga_23:
(Start: 7 @15170 has 48 MA's), (15, 15260), (16, 15263), (23, 15314), (24, 15329), (25, 15335), (38, 15440),

Gene: Megatron06_19 Start: 12787, Stop: 13158, Start Num: 7
Candidate Starts for Megatron06_19:
(Start: 6 @12781 has 5 MA's), (Start: 7 @12787 has 48 MA's), (18, 12892), (25, 12952), (34, 13018), (36, 13027), (43, 13129), (44, 13147),

Gene: Mima20_17 Start: 13505, Stop: 13774, Start Num: 12
Candidate Starts for Mima20_17:
(Start: 7 @13463 has 48 MA's), (12, 13505), (20, 13568), (26, 13616), (30, 13649), (31, 13658),

Gene: MoiGyank_20 Start: 14147, Stop: 14458, Start Num: 7
Candidate Starts for MoiGyank_20:
(Start: 7 @14147 has 48 MA's), (12, 14189), (20, 14252), (26, 14300), (30, 14333), (31, 14342),

Gene: MontyDev_18 Start: 12450, Stop: 12818, Start Num: 3
Candidate Starts for MontyDev_18:
(1, 12393), (Start: 3 @12450 has 9 MA's), (15, 12564), (18, 12579), (21, 12597), (28, 12660), (32, 12690), (36, 12711), (37, 12735),

Gene: MrMiyagi_12 Start: 8156, Stop: 8503, Start Num: 5
Candidate Starts for MrMiyagi_12:
(Start: 5 @8156 has 3 MA's), (9, 8192), (13, 8213), (16, 8255), (21, 8288), (32, 8384),

Gene: Nilo_19 Start: 12789, Stop: 13157, Start Num: 3
Candidate Starts for Nilo_19:
(1, 12732), (Start: 3 @12789 has 9 MA's), (15, 12903), (18, 12918), (21, 12936), (28, 12999), (32, 13029), (36, 13050), (37, 13074),

Gene: NorManre_19 Start: 13342, Stop: 13653, Start Num: 7
Candidate Starts for NorManre_19:
(Start: 7 @13342 has 48 MA's), (12, 13384), (20, 13447), (26, 13495), (30, 13528), (31, 13537),

Gene: NovaSharks_17 Start: 11350, Stop: 11661, Start Num: 7
Candidate Starts for NovaSharks_17:
(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Oaker_17 Start: 12511, Stop: 12882, Start Num: 7
Candidate Starts for Oaker_17:
(Start: 6 @12505 has 5 MA's), (Start: 7 @12511 has 48 MA's), (18, 12616), (25, 12676), (34, 12742), (36, 12751), (43, 12853), (44, 12871),

Gene: OtterstedtS21_18 Start: 13432, Stop: 13743, Start Num: 7

Candidate Starts for OtterstedtS21_18:

(Start: 7 @13432 has 48 MA's), (12, 13474), (20, 13537), (26, 13585), (30, 13618), (31, 13627),

Gene: Papyrus_18 Start: 12451, Stop: 12819, Start Num: 3

Candidate Starts for Papyrus_18:

(1, 12394), (Start: 3 @12451 has 9 MA's), (15, 12565), (18, 12580), (21, 12598), (28, 12661), (32, 12691), (36, 12712), (37, 12736),

Gene: ParvusTarda_18 Start: 12914, Stop: 13225, Start Num: 7

Candidate Starts for ParvusTarda_18:

(Start: 7 @12914 has 48 MA's), (12, 12956), (20, 13019), (26, 13067), (30, 13100), (31, 13109),

Gene: Patience_25 Start: 16060, Stop: 16389, Start Num: 7

Candidate Starts for Patience_25:

(Start: 7 @16060 has 48 MA's), (15, 16150), (16, 16153), (23, 16204), (24, 16219), (25, 16225), (38, 16330),

Gene: Patos_19 Start: 13342, Stop: 13653, Start Num: 7

Candidate Starts for Patos_19:

(Start: 7 @13342 has 48 MA's), (12, 13384), (20, 13447), (26, 13495), (30, 13528), (31, 13537),

Gene: Phreeze_17 Start: 12246, Stop: 12623, Start Num: 6

Candidate Starts for Phreeze_17:

(Start: 6 @12246 has 5 MA's), (Start: 7 @12252 has 48 MA's), (18, 12357), (25, 12417), (34, 12483), (36, 12492), (43, 12594), (44, 12612),

Gene: Predator_21 Start: 13774, Stop: 14148, Start Num: 7

Candidate Starts for Predator_21:

(Start: 7 @13774 has 48 MA's), (14, 13840), (15, 13864), (18, 13879), (25, 13939), (34, 14005), (43, 14119),

Gene: Puissant_16 Start: 12702, Stop: 13079, Start Num: 6

Candidate Starts for Puissant_16:

(Start: 6 @12702 has 5 MA's), (Start: 7 @12708 has 48 MA's), (11, 12747), (15, 12798), (18, 12813), (22, 12834), (25, 12873), (34, 12939), (36, 12948), (43, 13050), (44, 13068),

Gene: Ranch_18 Start: 12280, Stop: 12591, Start Num: 7

Candidate Starts for Ranch_18:

(Start: 7 @12280 has 48 MA's), (12, 12322), (20, 12385), (26, 12433), (30, 12466), (31, 12475),

Gene: RazorC_16 Start: 11350, Stop: 11661, Start Num: 7

Candidate Starts for RazorC_16:

(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Riparian_18 Start: 12250, Stop: 12618, Start Num: 3

Candidate Starts for Riparian_18:

(1, 12193), (Start: 3 @12250 has 9 MA's), (15, 12364), (18, 12379), (21, 12397), (28, 12460), (32, 12490), (36, 12511), (37, 12535),

Gene: Rope_18 Start: 12442, Stop: 12810, Start Num: 3

Candidate Starts for Rope_18:

(1, 12385), (Start: 3 @12442 has 9 MA's), (15, 12556), (18, 12571), (21, 12589), (28, 12652), (32, 12682), (36, 12703), (37, 12727),

Gene: Rumi_17 Start: 11350, Stop: 11661, Start Num: 7
Candidate Starts for Rumi_17:
(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Sadboi_18 Start: 14110, Stop: 14421, Start Num: 7
Candidate Starts for Sadboi_18:
(Start: 7 @14110 has 48 MA's), (12, 14152), (20, 14215), (26, 14263), (30, 14296), (31, 14305),

Gene: Sampudon_18 Start: 14286, Stop: 14597, Start Num: 7
Candidate Starts for Sampudon_18:
(Start: 7 @14286 has 48 MA's), (12, 14328), (20, 14391), (26, 14439), (30, 14472), (31, 14481),

Gene: Send513_18 Start: 12792, Stop: 13160, Start Num: 3
Candidate Starts for Send513_18:
(1, 12735), (Start: 3 @12792 has 9 MA's), (15, 12906), (18, 12921), (21, 12939), (28, 13002), (32, 13032), (36, 13053), (37, 13077),

Gene: Sienna_13 Start: 8817, Stop: 9137, Start Num: 7
Candidate Starts for Sienna_13:
(Start: 7 @8817 has 48 MA's), (19, 8919), (26, 8976), (27, 8982),

Gene: Stormer_16 Start: 11350, Stop: 11661, Start Num: 7
Candidate Starts for Stormer_16:
(Start: 7 @11350 has 48 MA's), (12, 11392), (20, 11455), (26, 11503), (30, 11536), (31, 11545),

Gene: Suzy_14 Start: 10045, Stop: 10365, Start Num: 7
Candidate Starts for Suzy_14:
(Start: 7 @10045 has 48 MA's), (19, 10147), (26, 10204), (27, 10210), (29, 10228), (33, 10261),

Gene: Terapin_13 Start: 8817, Stop: 9137, Start Num: 7
Candidate Starts for Terapin_13:
(Start: 7 @8817 has 48 MA's), (19, 8919), (26, 8976), (27, 8982),

Gene: Thumb_17 Start: 12253, Stop: 12624, Start Num: 7
Candidate Starts for Thumb_17:
(Start: 6 @12247 has 5 MA's), (Start: 7 @12253 has 48 MA's), (18, 12358), (25, 12418), (34, 12484), (36, 12493), (43, 12595), (44, 12613),

Gene: Tillicus_18 Start: 12659, Stop: 12970, Start Num: 7
Candidate Starts for Tillicus_18:
(Start: 7 @12659 has 48 MA's), (20, 12764), (26, 12812), (30, 12845),

Gene: Weiss13_18 Start: 12482, Stop: 12850, Start Num: 3
Candidate Starts for Weiss13_18:
(1, 12425), (Start: 3 @12482 has 9 MA's), (15, 12596), (18, 12611), (21, 12629), (28, 12692), (32, 12722), (36, 12743), (37, 12767),

Gene: Wojtek_17 Start: 12987, Stop: 13298, Start Num: 7
Candidate Starts for Wojtek_17:
(Start: 7 @12987 has 48 MA's), (12, 13029), (20, 13092), (26, 13140), (30, 13173), (31, 13182),

Gene: Xenia2_18 Start: 13026, Stop: 13337, Start Num: 7

Candidate Starts for Xenia2_18:

(Start: 7 @13026 has 48 MA's), (12, 13068), (15, 13101), (30, 13212), (33, 13236), (34, 13242), (41, 13326),

Gene: Yelo_18 Start: 12792, Stop: 13160, Start Num: 3

Candidate Starts for Yelo_18:

(1, 12735), (Start: 3 @12792 has 9 MA's), (15, 12906), (18, 12921), (21, 12939), (28, 13002), (32, 13032), (36, 13053), (37, 13077),

Gene: Yikes_19 Start: 14371, Stop: 14682, Start Num: 7

Candidate Starts for Yikes_19:

(Start: 7 @14371 has 48 MA's), (12, 14413), (20, 14476), (26, 14524), (30, 14557), (31, 14566),

Gene: Zany_17 Start: 13500, Stop: 13811, Start Num: 7

Candidate Starts for Zany_17:

(Start: 7 @13500 has 48 MA's), (12, 13542), (20, 13605), (26, 13653), (30, 13686), (31, 13695),

Gene: Zenon_19 Start: 12794, Stop: 13162, Start Num: 3

Candidate Starts for Zenon_19:

(1, 12737), (Start: 3 @12794 has 9 MA's), (15, 12908), (18, 12923), (21, 12941), (28, 13004), (32, 13034), (36, 13055), (37, 13079),