

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 193848 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193848 has 119 members, 10 are drafts.

Phages represented in each track:

- Track 1 : PLOT_19, Visconti_18, Gumball_17, KandZ_18, WaldoWhy_19, Helpful_19, Delton_18, SirHarley_17, Thoth_18, Nova_18, BigMama_16, Chill_19, Prager_18, Penelope2018_18, Troll4_18, Adjutor_19, Erk16_18, Giuseppe_18, Mopey_18, PBI1_19, Butterscotch_18
- Track 2 : Hawkeye_20
- Track 3 : LilyPad_14
- Track 4 : Djokovic_13, Madi_13, Terapin_13, BiteSize_13, Sienna_13, Beyoncage_13
- Track 5 : Suzy_14
- Track 6 : LittleFella_15
- Track 7 : NorManre_19, Rumi_17, OtterstedtS21_18, Fulcrum_19, Ranch_18, Alyssamiracle_17, Gibbin_19, Lila22_18, Genamy16_17, Sampudon_18, ParvusTarda_18, Patos_19, DaviePasture_18, DoobyDoo_17, GretelLyn_18, MoiGyank_20, Sadboi_18, NovaSharks_17, Alephilan_15, Jalebi_18, Zany_17, Wojtek_17, BirthdayBoy_19, Jamemuya19_15, Yikes_19, GOATification_19, Erutan_18
- Track 8 : Mima20_17, Avian_16
- Track 9 : Lambo_18
- Track 10 : LuckyLeo_17, Apeppi_16
- Track 11 : DumpTruck_17, Xenia2_15
- Track 12 : Tillicus_18
- Track 13 : Neptune_20, Krampus_20, Snakehole_21, Dauntless_19, Chivey_19, Pharpay_20, Gilda_20, Anakin_20, Rachella_20, Erudite_19, FreddieHg_19, Haunter_20, Aesir_19, Kate_20, AnnaSerena_20, CoolCookie_20, Potty_20, DannyDe_19, Tedro_20, MortySmith_18, PhunaPhoke_20, Cybele_20, JDawG_19, OverHedge_20, NarutoRun_20, JingleBells_19, Hiddenleaf_19, Poultruss_19, Crestdrop_19
- Track 14 : Ajin_21, RikSengupta_21, Kors_22, TinyMiny_21, Sparcetus_21
- Track 15 : Rie18_20, Karate_19, Hager_21
- Track 16 : Predator_21
- Track 17 : Damien_17, Phreeze_17, Beckerton_17, Konstantine_22
- Track 18 : Cborch11_18
- Track 19 : Puissant_16
- Track 20 : Megatron06_19, Thumb_17, Oaker_17
- Track 21 : DrLupo_25
- Track 22 : Barnyard_23
- Track 23 : Madruga_23, Labelle_24, Patience_25

- Track 24 : Wollypog_8

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

The start number called the most often in the published annotations is 3, it was called in 75 of the 109 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adjutor_19, Aesir_19, Ajin_21, Anakin_20, AnnaSerena_20, Barnyard_23, Beyoncage_13, BigMama_16, BiteSize_13, Butterscotch_18, Chill_19, Chivey_19, CoolCookie_20, Crestdrop_19, Cybele_20, DannyDe_19, Dauntless_19, Delton_18, Djokovic_13, DrLupo_25, Erk16_18, Erudite_19, FreddieHg_19, Gilda_20, Giuseppe_18, Gumball_17, Hager_21, Haunter_20, Hawkeye_20, Helpful_19, Hiddenleaf_19, JDawG_19, JingleBells_19, KandZ_18, Karate_19, Kate_20, Kors_22, Krampus_20, Labelle_24, LilyPad_14, LittleFella_15, Madi_13, Madrug_23, Megatron06_19, Mopey_18, MortySmith_18, NarutoRun_20, Neptune_20, Nova_18, Oaker_17, OverHedge_20, PBI1_19, PLOT_19, Patience_25, Penelope2018_18, Pharpay_20, PhunaPhoke_20, Potty_20, Poultruss_19, Prager_18, Predator_21, Rachella_20, Rie18_20, RikSengupta_21, Sienna_13, SirHarley_17, Snakehole_21, Sparcetus_21, Suzy_14, Tedro_20, Terapin_13, Thoth_18, Thumb_17, TinyMiny_21, Troll4_18, Visconti_18, WaldoWhy_19, Wollypog_8,

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

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

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

- Alephlan_15, Alyssamiracle_17, Apeppi_16, Avian_16, BirthdayBoy_19, DaviePasture_18, DoobyDoo_17, DumpTruck_17, Erutan_18, Fulcrum_19, GOATification_19, Genamy16_17, Gibbin_19, GretellLyn_18, Jalebi_18, Jamemuya19_15, Lambo_18, Lila22_18, LuckyLeo_17, Mima20_17, MoiGyank_20, NorManre_19, NovaSharks_17, OtterstedtS21_18, ParvusTarda_18, Patos_19, Ranch_18, Rumi_17, Sadboi_18, Sampudon_18, Tillicus_18, Wojtek_17, Xenia2_15, Yikes_19, Zany_17,

Summary by start number:

Start 2:

- Found in 9 of 119 (7.6%) of genes in pham
- Manual Annotations of this start: 5 of 109
- 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 3:

- Found in 84 of 119 (70.6%) of genes in pham
- Manual Annotations of this start: 75 of 109
- Called 92.9% of time when present

- Phage (with cluster) where this start called: Adjutor_19 (D1), Aesir_19 (EF), Ajin_21 (EF), Anakin_20 (EF), AnnaSerena_20 (EF), Barnyard_23 (H2), Beyoncage_13 (DG1), BigMama_16 (D1), BiteSize_13 (DG1), Butterscotch_18 (D1), Chill_19 (D1), Chivey_19 (EF), CoolCookie_20 (EF), Crestdrop_19 (EF), Cybele_20 (EF), DannyDe_19 (EF), Dauntless_19 (EF), Delton_18 (D1), Djokovic_13 (DG1), DrLupo_25 (H2), Erk16_18 (D1), Erudite_19 (EF), FreddieHg_19 (EF), Gilda_20 (EF), Giuseppe_18 (D1), Gumball_17 (D1), Hager_21 (EF), Haunter_20 (EF), Hawkeye_20 (D2), Helpful_19 (D1), Hiddenleaf_19 (EF), JDawG_19 (EF), JingleBells_19 (EF), KandZ_18 (D1), Karate_19 (EF), Kate_20 (EF), Kors_22 (EF), Krampus_20 (EF), Labelle_24 (U), LilyPad_14 (DG1), LittleFella_15 (DG2), Madi_13 (DG1), Madrugá_23 (U), Megatron06_19 (H1), Mopey_18 (D1), MortySmith_18 (EF), NarutoRun_20 (EF), Neptune_20 (EF), Nova_18 (D1), Oaker_17 (H1), OverHedge_20 (EF), PBI1_19 (D1), PLOT_19 (D1), Patience_25 (U), Penelope2018_18 (D1), Pharpay_20 (EF), PhunaPhoke_20 (EF), Potty_20 (EF), Poultruss_19 (EF), Prager_18 (D1), Predator_21 (H1), Rachella_20 (EF), Rie18_20 (EF), RikSengupta_21 (EF), Sienna_13 (DG1), SirHarley_17 (D1), Snakehole_21 (EF), Sparcetus_21 (EF), Suzy_14 (DG1), Tedro_20 (EF), Terapin_13 (DG1), Thoth_18 (D1), Thumb_17 (H1), TinyMiny_21 (EF), Troll4_18 (D1), Visconti_18 (D1), WaldoWhy_19 (D1), Wollypog_8 (singleton),

Start 4:

- Found in 35 of 119 (29.4%) of genes in pham
- Manual Annotations of this start: 29 of 109
- Called 94.3% of time when present
- Phage (with cluster) where this start called: Alephilan_15 (DV), Alyssmiracle_17 (DV), Apeppi_16 (DV), BirthdayBoy_19 (DV), DaviePasture_18 (DV), DoobyDoo_17 (DV), 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), Lambo_18 (DV), Lila22_18 (DV), LuckyLeo_17 (DV), MoiGyank_20 (DV), NorManre_19 (DV), NovaSharks_17 (DV), OtterstedtS21_18 (DV), ParvusTarda_18 (DV), Patos_19 (DV), Ranch_18 (DV), Rumi_17 (DV), Sadboi_18 (DV), Sampudon_18 (DV), Tillicus_18 (DV), Wojtek_17 (DV), Xenia2_15 (DV), Yikes_19 (DV), Zany_17 (DV),

Start 7:

- Found in 64 of 119 (53.8%) of genes in pham
- No Manual Annotations of this start.
- Called 3.1% of time when present
- Phage (with cluster) where this start called: Avian_16 (DV), Mima20_17 (DV),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, H1, H2, EF, DG2, DG1, U, DV, D2, D1,

Info for manual annotations of cluster D1:

- Start number 3 was manually annotated 20 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 3 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 3 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 3 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 4 was manually annotated 29 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 3 was manually annotated 35 times for cluster EF.

Info for manual annotations of cluster H1:

- Start number 2 was manually annotated 5 times for cluster H1.
- Start number 3 was manually annotated 4 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 3 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster U:

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

Gene Information:

Gene: Adjutor_19 Start: 12400, Stop: 12732, Start Num: 3

Candidate Starts for Adjutor_19:

(Start: 3 @12400 has 75 MA's), (14, 12517), (17, 12538), (23, 12568), (27, 12619), (29, 12628), (34, 12694),

Gene: Aesir_19 Start: 11130, Stop: 11438, Start Num: 3

Candidate Starts for Aesir_19:

(Start: 3 @11130 has 75 MA's), (7, 11181), (31, 11385),

Gene: Ajin_21 Start: 11286, Stop: 11603, Start Num: 3

Candidate Starts for Ajin_21:

(Start: 3 @11286 has 75 MA's), (5, 11322), (16, 11421), (19, 11445), (25, 11490), (26, 11499),

Gene: Alephilan_15 Start: 12943, Stop: 13254, Start Num: 4

Candidate Starts for Alephilan_15:

(Start: 4 @12943 has 29 MA's), (7, 12985), (13, 13048), (22, 13096), (25, 13129), (26, 13138),

Gene: Alyssamiracle_17 Start: 11350, Stop: 11661, Start Num: 4

Candidate Starts for Alyssamiracle_17:

(Start: 4 @11350 has 29 MA's), (7, 11392), (13, 11455), (22, 11503), (25, 11536), (26, 11545),

Gene: Anakin_20 Start: 11340, Stop: 11648, Start Num: 3

Candidate Starts for Anakin_20:

(Start: 3 @11340 has 75 MA's), (7, 11391), (31, 11595),

Gene: AnnaSerena_20 Start: 11349, Stop: 11657, Start Num: 3

Candidate Starts for AnnaSerena_20:

(Start: 3 @11349 has 75 MA's), (7, 11400), (31, 11604),

Gene: Apeppi_16 Start: 13065, Stop: 13376, Start Num: 4
Candidate Starts for Apeppi_16:
(Start: 4 @13065 has 29 MA's), (9, 13140), (13, 13170), (22, 13218), (25, 13251),

Gene: Avian_16 Start: 11392, Stop: 11661, Start Num: 7
Candidate Starts for Avian_16:
(Start: 4 @11350 has 29 MA's), (7, 11392), (13, 11455), (22, 11503), (25, 11536), (26, 11545),

Gene: Barnyard_23 Start: 13941, Stop: 14273, Start Num: 3
Candidate Starts for Barnyard_23:
(Start: 3 @13941 has 75 MA's), (26, 14148), (28, 14169),

Gene: Beckerton_17 Start: 12784, Stop: 13161, Start Num: 2
Candidate Starts for Beckerton_17:
(Start: 2 @12784 has 5 MA's), (Start: 3 @12790 has 75 MA's), (11, 12895), (21, 12955), (28, 13021),
(30, 13030), (38, 13132), (39, 13150),

Gene: Beyoncage_13 Start: 8817, Stop: 9137, Start Num: 3
Candidate Starts for Beyoncage_13:
(Start: 3 @8817 has 75 MA's), (12, 8919), (22, 8976), (23, 8982),

Gene: BigMama_16 Start: 12476, Stop: 12808, Start Num: 3
Candidate Starts for BigMama_16:
(Start: 3 @12476 has 75 MA's), (14, 12593), (17, 12614), (23, 12644), (27, 12695), (29, 12704), (34,
12770),

Gene: BirthdayBoy_19 Start: 13796, Stop: 14107, Start Num: 4
Candidate Starts for BirthdayBoy_19:
(Start: 4 @13796 has 29 MA's), (7, 13838), (13, 13901), (22, 13949), (25, 13982), (26, 13991),

Gene: BiteSize_13 Start: 8817, Stop: 9137, Start Num: 3
Candidate Starts for BiteSize_13:
(Start: 3 @8817 has 75 MA's), (12, 8919), (22, 8976), (23, 8982),

Gene: Butterscotch_18 Start: 12460, Stop: 12792, Start Num: 3
Candidate Starts for Butterscotch_18:
(Start: 3 @12460 has 75 MA's), (14, 12577), (17, 12598), (23, 12628), (27, 12679), (29, 12688), (34,
12754),

Gene: Cborch11_18 Start: 12247, Stop: 12624, Start Num: 2
Candidate Starts for Cborch11_18:
(1, 12193), (Start: 2 @12247 has 5 MA's), (Start: 3 @12253 has 75 MA's), (11, 12358), (21, 12418),
(28, 12484), (30, 12493), (38, 12595), (39, 12613),

Gene: Chill_19 Start: 12466, Stop: 12798, Start Num: 3
Candidate Starts for Chill_19:
(Start: 3 @12466 has 75 MA's), (14, 12583), (17, 12604), (23, 12634), (27, 12685), (29, 12694), (34,
12760),

Gene: Chivey_19 Start: 10542, Stop: 10850, Start Num: 3
Candidate Starts for Chivey_19:
(Start: 3 @10542 has 75 MA's), (7, 10593), (31, 10797),

Gene: CoolCookie_20 Start: 11347, Stop: 11655, Start Num: 3
Candidate Starts for CoolCookie_20:
(Start: 3 @11347 has 75 MA's), (7, 11398), (31, 11602),

Gene: Crestdrop_19 Start: 10416, Stop: 10724, Start Num: 3
Candidate Starts for Crestdrop_19:
(Start: 3 @10416 has 75 MA's), (7, 10467), (31, 10671),

Gene: Cybele_20 Start: 11317, Stop: 11625, Start Num: 3
Candidate Starts for Cybele_20:
(Start: 3 @11317 has 75 MA's), (7, 11368), (31, 11572),

Gene: Damien_17 Start: 12246, Stop: 12623, Start Num: 2
Candidate Starts for Damien_17:
(Start: 2 @12246 has 5 MA's), (Start: 3 @12252 has 75 MA's), (11, 12357), (21, 12417), (28, 12483),
(30, 12492), (38, 12594), (39, 12612),

Gene: DannyDe_19 Start: 10534, Stop: 10842, Start Num: 3
Candidate Starts for DannyDe_19:
(Start: 3 @10534 has 75 MA's), (7, 10585), (31, 10789),

Gene: Dauntless_19 Start: 11059, Stop: 11367, Start Num: 3
Candidate Starts for Dauntless_19:
(Start: 3 @11059 has 75 MA's), (7, 11110), (31, 11314),

Gene: DaviePasture_18 Start: 13553, Stop: 13864, Start Num: 4
Candidate Starts for DaviePasture_18:
(Start: 4 @13553 has 29 MA's), (7, 13595), (13, 13658), (22, 13706), (25, 13739), (26, 13748),

Gene: Delton_18 Start: 12472, Stop: 12804, Start Num: 3
Candidate Starts for Delton_18:
(Start: 3 @12472 has 75 MA's), (14, 12589), (17, 12610), (23, 12640), (27, 12691), (29, 12700), (34,
12766),

Gene: Djokovic_13 Start: 8817, Stop: 9137, Start Num: 3
Candidate Starts for Djokovic_13:
(Start: 3 @8817 has 75 MA's), (12, 8919), (22, 8976), (23, 8982),

Gene: DoobyDoo_17 Start: 12730, Stop: 13041, Start Num: 4
Candidate Starts for DoobyDoo_17:
(Start: 4 @12730 has 29 MA's), (7, 12772), (13, 12835), (22, 12883), (25, 12916), (26, 12925),

Gene: DrLupo_25 Start: 14352, Stop: 14684, Start Num: 3
Candidate Starts for DrLupo_25:
(Start: 3 @14352 has 75 MA's), (26, 14559), (28, 14580), (32, 14628), (37, 14679),

Gene: DumpTruck_17 Start: 12984, Stop: 13295, Start Num: 4
Candidate Starts for DumpTruck_17:
(Start: 4 @12984 has 29 MA's), (7, 13026), (9, 13059), (25, 13170), (27, 13194), (28, 13200), (36,
13284),

Gene: Erk16_18 Start: 12463, Stop: 12795, Start Num: 3
Candidate Starts for Erk16_18:

(Start: 3 @12463 has 75 MA's), (14, 12580), (17, 12601), (23, 12631), (27, 12682), (29, 12691), (34, 12757),

Gene: Erudite_19 Start: 11059, Stop: 11367, Start Num: 3

Candidate Starts for Erudite_19:

(Start: 3 @11059 has 75 MA's), (7, 11110), (31, 11314),

Gene: Erutan_18 Start: 13243, Stop: 13554, Start Num: 4

Candidate Starts for Erutan_18:

(Start: 4 @13243 has 29 MA's), (7, 13285), (13, 13348), (22, 13396), (25, 13429), (26, 13438),

Gene: FreddieHg_19 Start: 10558, Stop: 10866, Start Num: 3

Candidate Starts for FreddieHg_19:

(Start: 3 @10558 has 75 MA's), (7, 10609), (31, 10813),

Gene: Fulcrum_19 Start: 13776, Stop: 14087, Start Num: 4

Candidate Starts for Fulcrum_19:

(Start: 4 @13776 has 29 MA's), (7, 13818), (13, 13881), (22, 13929), (25, 13962), (26, 13971),

Gene: GOATification_19 Start: 13776, Stop: 14087, Start Num: 4

Candidate Starts for GOATification_19:

(Start: 4 @13776 has 29 MA's), (7, 13818), (13, 13881), (22, 13929), (25, 13962), (26, 13971),

Gene: Genamy16_17 Start: 11350, Stop: 11661, Start Num: 4

Candidate Starts for Genamy16_17:

(Start: 4 @11350 has 29 MA's), (7, 11392), (13, 11455), (22, 11503), (25, 11536), (26, 11545),

Gene: Gibbin_19 Start: 13836, Stop: 14147, Start Num: 4

Candidate Starts for Gibbin_19:

(Start: 4 @13836 has 29 MA's), (7, 13878), (13, 13941), (22, 13989), (25, 14022), (26, 14031),

Gene: Gilda_20 Start: 11341, Stop: 11649, Start Num: 3

Candidate Starts for Gilda_20:

(Start: 3 @11341 has 75 MA's), (7, 11392), (31, 11596),

Gene: Giuseppe_18 Start: 12452, Stop: 12784, Start Num: 3

Candidate Starts for Giuseppe_18:

(Start: 3 @12452 has 75 MA's), (14, 12569), (17, 12590), (23, 12620), (27, 12671), (29, 12680), (34, 12746),

Gene: GretelLyn_18 Start: 14110, Stop: 14421, Start Num: 4

Candidate Starts for GretelLyn_18:

(Start: 4 @14110 has 29 MA's), (7, 14152), (13, 14215), (22, 14263), (25, 14296), (26, 14305),

Gene: Gumball_17 Start: 12410, Stop: 12742, Start Num: 3

Candidate Starts for Gumball_17:

(Start: 3 @12410 has 75 MA's), (14, 12527), (17, 12548), (23, 12578), (27, 12629), (29, 12638), (34, 12704),

Gene: Hager_21 Start: 10912, Stop: 11220, Start Num: 3

Candidate Starts for Hager_21:

(Start: 3 @10912 has 75 MA's), (7, 10963),

Gene: Haunter_20 Start: 10754, Stop: 11062, Start Num: 3

Candidate Starts for Haunter_20:

(Start: 3 @10754 has 75 MA's), (7, 10805), (31, 11009),

Gene: Hawkeye_20 Start: 12347, Stop: 12667, Start Num: 3

Candidate Starts for Hawkeye_20:

(Start: 3 @12347 has 75 MA's), (27, 12566),

Gene: Helpful_19 Start: 12460, Stop: 12792, Start Num: 3

Candidate Starts for Helpful_19:

(Start: 3 @12460 has 75 MA's), (14, 12577), (17, 12598), (23, 12628), (27, 12679), (29, 12688), (34, 12754),

Gene: Hiddenleaf_19 Start: 10542, Stop: 10850, Start Num: 3

Candidate Starts for Hiddenleaf_19:

(Start: 3 @10542 has 75 MA's), (7, 10593), (31, 10797),

Gene: JDawG_19 Start: 11124, Stop: 11432, Start Num: 3

Candidate Starts for JDawG_19:

(Start: 3 @11124 has 75 MA's), (7, 11175), (31, 11379),

Gene: Jalebi_18 Start: 14286, Stop: 14597, Start Num: 4

Candidate Starts for Jalebi_18:

(Start: 4 @14286 has 29 MA's), (7, 14328), (13, 14391), (22, 14439), (25, 14472), (26, 14481),

Gene: Jamemuya19_15 Start: 11350, Stop: 11661, Start Num: 4

Candidate Starts for Jamemuya19_15:

(Start: 4 @11350 has 29 MA's), (7, 11392), (13, 11455), (22, 11503), (25, 11536), (26, 11545),

Gene: JingleBells_19 Start: 10623, Stop: 10931, Start Num: 3

Candidate Starts for JingleBells_19:

(Start: 3 @10623 has 75 MA's), (7, 10674), (31, 10878),

Gene: KandZ_18 Start: 12560, Stop: 12892, Start Num: 3

Candidate Starts for KandZ_18:

(Start: 3 @12560 has 75 MA's), (14, 12677), (17, 12698), (23, 12728), (27, 12779), (29, 12788), (34, 12854),

Gene: Karate_19 Start: 10762, Stop: 11070, Start Num: 3

Candidate Starts for Karate_19:

(Start: 3 @10762 has 75 MA's), (7, 10813),

Gene: Kate_20 Start: 11349, Stop: 11657, Start Num: 3

Candidate Starts for Kate_20:

(Start: 3 @11349 has 75 MA's), (7, 11400), (31, 11604),

Gene: Konstantine_22 Start: 13448, Stop: 13825, Start Num: 2

Candidate Starts for Konstantine_22:

(Start: 2 @13448 has 5 MA's), (Start: 3 @13454 has 75 MA's), (11, 13559), (21, 13619), (28, 13685), (30, 13694), (38, 13796), (39, 13814),

Gene: Kors_22 Start: 11332, Stop: 11649, Start Num: 3

Candidate Starts for Kors_22:

(Start: 3 @11332 has 75 MA's), (5, 11368), (16, 11467), (19, 11491), (25, 11536), (26, 11545),

Gene: Krampus_20 Start: 11347, Stop: 11655, Start Num: 3

Candidate Starts for Krampus_20:

(Start: 3 @11347 has 75 MA's), (7, 11398), (31, 11602),

Gene: Labelle_24 Start: 15501, Stop: 15830, Start Num: 3

Candidate Starts for Labelle_24:

(Start: 3 @15501 has 75 MA's), (9, 15591), (10, 15594), (18, 15645), (20, 15660), (21, 15666), (31, 15771),

Gene: Lambo_18 Start: 13780, Stop: 14091, Start Num: 4

Candidate Starts for Lambo_18:

(Start: 4 @13780 has 29 MA's), (7, 13822), (13, 13885), (22, 13933), (25, 13966),

Gene: Lila22_18 Start: 13734, Stop: 14045, Start Num: 4

Candidate Starts for Lila22_18:

(Start: 4 @13734 has 29 MA's), (7, 13776), (13, 13839), (22, 13887), (25, 13920), (26, 13929),

Gene: LilyPad_14 Start: 9536, Stop: 9856, Start Num: 3

Candidate Starts for LilyPad_14:

(Start: 3 @9536 has 75 MA's), (12, 9638), (13, 9647), (22, 9695),

Gene: LittleFella_15 Start: 11437, Stop: 11757, Start Num: 3

Candidate Starts for LittleFella_15:

(Start: 3 @11437 has 75 MA's), (12, 11539),

Gene: LuckyLeo_17 Start: 13065, Stop: 13376, Start Num: 4

Candidate Starts for LuckyLeo_17:

(Start: 4 @13065 has 29 MA's), (9, 13140), (13, 13170), (22, 13218), (25, 13251),

Gene: Madi_13 Start: 8817, Stop: 9137, Start Num: 3

Candidate Starts for Madi_13:

(Start: 3 @8817 has 75 MA's), (12, 8919), (22, 8976), (23, 8982),

Gene: Madruga_23 Start: 15170, Stop: 15499, Start Num: 3

Candidate Starts for Madruga_23:

(Start: 3 @15170 has 75 MA's), (9, 15260), (10, 15263), (18, 15314), (20, 15329), (21, 15335), (31, 15440),

Gene: Megatron06_19 Start: 12787, Stop: 13158, Start Num: 3

Candidate Starts for Megatron06_19:

(Start: 2 @12781 has 5 MA's), (Start: 3 @12787 has 75 MA's), (11, 12892), (21, 12952), (28, 13018), (30, 13027), (38, 13129), (39, 13147),

Gene: Mima20_17 Start: 13505, Stop: 13774, Start Num: 7

Candidate Starts for Mima20_17:

(Start: 4 @13463 has 29 MA's), (7, 13505), (13, 13568), (22, 13616), (25, 13649), (26, 13658),

Gene: MoiGyank_20 Start: 14147, Stop: 14458, Start Num: 4

Candidate Starts for MoiGyank_20:

(Start: 4 @14147 has 29 MA's), (7, 14189), (13, 14252), (22, 14300), (25, 14333), (26, 14342),

Gene: Mopey_18 Start: 12460, Stop: 12792, Start Num: 3
Candidate Starts for Mopey_18:
(Start: 3 @12460 has 75 MA's), (14, 12577), (17, 12598), (23, 12628), (27, 12679), (29, 12688), (34, 12754),

Gene: MortySmith_18 Start: 10521, Stop: 10829, Start Num: 3
Candidate Starts for MortySmith_18:
(Start: 3 @10521 has 75 MA's), (7, 10572), (31, 10776),

Gene: NarutoRun_20 Start: 11340, Stop: 11648, Start Num: 3
Candidate Starts for NarutoRun_20:
(Start: 3 @11340 has 75 MA's), (7, 11391), (31, 11595),

Gene: Neptune_20 Start: 11317, Stop: 11625, Start Num: 3
Candidate Starts for Neptune_20:
(Start: 3 @11317 has 75 MA's), (7, 11368), (31, 11572),

Gene: NorManre_19 Start: 13342, Stop: 13653, Start Num: 4
Candidate Starts for NorManre_19:
(Start: 4 @13342 has 29 MA's), (7, 13384), (13, 13447), (22, 13495), (25, 13528), (26, 13537),

Gene: Nova_18 Start: 12887, Stop: 13219, Start Num: 3
Candidate Starts for Nova_18:
(Start: 3 @12887 has 75 MA's), (14, 13004), (17, 13025), (23, 13055), (27, 13106), (29, 13115), (34, 13181),

Gene: NovaSharks_17 Start: 11350, Stop: 11661, Start Num: 4
Candidate Starts for NovaSharks_17:
(Start: 4 @11350 has 29 MA's), (7, 11392), (13, 11455), (22, 11503), (25, 11536), (26, 11545),

Gene: Oaker_17 Start: 12511, Stop: 12882, Start Num: 3
Candidate Starts for Oaker_17:
(Start: 2 @12505 has 5 MA's), (Start: 3 @12511 has 75 MA's), (11, 12616), (21, 12676), (28, 12742), (30, 12751), (38, 12853), (39, 12871),

Gene: OtterstedtS21_18 Start: 13432, Stop: 13743, Start Num: 4
Candidate Starts for OtterstedtS21_18:
(Start: 4 @13432 has 29 MA's), (7, 13474), (13, 13537), (22, 13585), (25, 13618), (26, 13627),

Gene: OverHedge_20 Start: 11314, Stop: 11622, Start Num: 3
Candidate Starts for OverHedge_20:
(Start: 3 @11314 has 75 MA's), (7, 11365), (31, 11569),

Gene: PBI1_19 Start: 12391, Stop: 12723, Start Num: 3
Candidate Starts for PBI1_19:
(Start: 3 @12391 has 75 MA's), (14, 12508), (17, 12529), (23, 12559), (27, 12610), (29, 12619), (34, 12685),

Gene: PLOT_19 Start: 12463, Stop: 12795, Start Num: 3
Candidate Starts for PLOT_19:
(Start: 3 @12463 has 75 MA's), (14, 12580), (17, 12601), (23, 12631), (27, 12682), (29, 12691), (34, 12757),

Gene: ParvusTarda_18 Start: 12914, Stop: 13225, Start Num: 4
Candidate Starts for ParvusTarda_18:
(Start: 4 @12914 has 29 MA's), (7, 12956), (13, 13019), (22, 13067), (25, 13100), (26, 13109),

Gene: Patience_25 Start: 16060, Stop: 16389, Start Num: 3
Candidate Starts for Patience_25:
(Start: 3 @16060 has 75 MA's), (9, 16150), (10, 16153), (18, 16204), (20, 16219), (21, 16225), (31, 16330),

Gene: Patos_19 Start: 13342, Stop: 13653, Start Num: 4
Candidate Starts for Patos_19:
(Start: 4 @13342 has 29 MA's), (7, 13384), (13, 13447), (22, 13495), (25, 13528), (26, 13537),

Gene: Penelope2018_18 Start: 12460, Stop: 12792, Start Num: 3
Candidate Starts for Penelope2018_18:
(Start: 3 @12460 has 75 MA's), (14, 12577), (17, 12598), (23, 12628), (27, 12679), (29, 12688), (34, 12754),

Gene: Pharpay_20 Start: 11362, Stop: 11670, Start Num: 3
Candidate Starts for Pharpay_20:
(Start: 3 @11362 has 75 MA's), (7, 11413), (31, 11617),

Gene: Phreeze_17 Start: 12246, Stop: 12623, Start Num: 2
Candidate Starts for Phreeze_17:
(Start: 2 @12246 has 5 MA's), (Start: 3 @12252 has 75 MA's), (11, 12357), (21, 12417), (28, 12483), (30, 12492), (38, 12594), (39, 12612),

Gene: PhunaPhoke_20 Start: 11335, Stop: 11643, Start Num: 3
Candidate Starts for PhunaPhoke_20:
(Start: 3 @11335 has 75 MA's), (7, 11386), (31, 11590),

Gene: Potty_20 Start: 11340, Stop: 11648, Start Num: 3
Candidate Starts for Potty_20:
(Start: 3 @11340 has 75 MA's), (7, 11391), (31, 11595),

Gene: Poultruss_19 Start: 11113, Stop: 11421, Start Num: 3
Candidate Starts for Poultruss_19:
(Start: 3 @11113 has 75 MA's), (7, 11164), (31, 11368),

Gene: Prager_18 Start: 12472, Stop: 12804, Start Num: 3
Candidate Starts for Prager_18:
(Start: 3 @12472 has 75 MA's), (14, 12589), (17, 12610), (23, 12640), (27, 12691), (29, 12700), (34, 12766),

Gene: Predator_21 Start: 13774, Stop: 14148, Start Num: 3
Candidate Starts for Predator_21:
(Start: 3 @13774 has 75 MA's), (8, 13840), (9, 13864), (11, 13879), (21, 13939), (28, 14005), (38, 14119),

Gene: Puissant_16 Start: 12702, Stop: 13079, Start Num: 2
Candidate Starts for Puissant_16:
(Start: 2 @12702 has 5 MA's), (Start: 3 @12708 has 75 MA's), (6, 12747), (9, 12798), (11, 12813), (15, 12834), (21, 12873), (28, 12939), (30, 12948), (38, 13050), (39, 13068),

Gene: Rachella_20 Start: 11343, Stop: 11651, Start Num: 3

Candidate Starts for Rachella_20:

(Start: 3 @11343 has 75 MA's), (7, 11394), (31, 11598),

Gene: Ranch_18 Start: 12280, Stop: 12591, Start Num: 4

Candidate Starts for Ranch_18:

(Start: 4 @12280 has 29 MA's), (7, 12322), (13, 12385), (22, 12433), (25, 12466), (26, 12475),

Gene: Rie18_20 Start: 10694, Stop: 11002, Start Num: 3

Candidate Starts for Rie18_20:

(Start: 3 @10694 has 75 MA's), (7, 10745),

Gene: RikSengupta_21 Start: 11369, Stop: 11686, Start Num: 3

Candidate Starts for RikSengupta_21:

(Start: 3 @11369 has 75 MA's), (5, 11405), (16, 11504), (19, 11528), (25, 11573), (26, 11582),

Gene: Rumi_17 Start: 11350, Stop: 11661, Start Num: 4

Candidate Starts for Rumi_17:

(Start: 4 @11350 has 29 MA's), (7, 11392), (13, 11455), (22, 11503), (25, 11536), (26, 11545),

Gene: Sadboi_18 Start: 14110, Stop: 14421, Start Num: 4

Candidate Starts for Sadboi_18:

(Start: 4 @14110 has 29 MA's), (7, 14152), (13, 14215), (22, 14263), (25, 14296), (26, 14305),

Gene: Sampudon_18 Start: 14286, Stop: 14597, Start Num: 4

Candidate Starts for Sampudon_18:

(Start: 4 @14286 has 29 MA's), (7, 14328), (13, 14391), (22, 14439), (25, 14472), (26, 14481),

Gene: Sienna_13 Start: 8817, Stop: 9137, Start Num: 3

Candidate Starts for Sienna_13:

(Start: 3 @8817 has 75 MA's), (12, 8919), (22, 8976), (23, 8982),

Gene: SirHarley_17 Start: 12392, Stop: 12724, Start Num: 3

Candidate Starts for SirHarley_17:

(Start: 3 @12392 has 75 MA's), (14, 12509), (17, 12530), (23, 12560), (27, 12611), (29, 12620), (34, 12686),

Gene: Snakehole_21 Start: 10639, Stop: 10947, Start Num: 3

Candidate Starts for Snakehole_21:

(Start: 3 @10639 has 75 MA's), (7, 10690), (31, 10894),

Gene: Sparcetus_21 Start: 11248, Stop: 11565, Start Num: 3

Candidate Starts for Sparcetus_21:

(Start: 3 @11248 has 75 MA's), (5, 11284), (16, 11383), (19, 11407), (25, 11452), (26, 11461),

Gene: Suzy_14 Start: 10045, Stop: 10365, Start Num: 3

Candidate Starts for Suzy_14:

(Start: 3 @10045 has 75 MA's), (12, 10147), (22, 10204), (23, 10210), (24, 10228), (27, 10261),

Gene: Tedro_20 Start: 10813, Stop: 11121, Start Num: 3

Candidate Starts for Tedro_20:

(Start: 3 @10813 has 75 MA's), (7, 10864), (31, 11068),

Gene: Terapin_13 Start: 8817, Stop: 9137, Start Num: 3
Candidate Starts for Terapin_13:
(Start: 3 @8817 has 75 MA's), (12, 8919), (22, 8976), (23, 8982),

Gene: Thoth_18 Start: 12457, Stop: 12789, Start Num: 3
Candidate Starts for Thoth_18:
(Start: 3 @12457 has 75 MA's), (14, 12574), (17, 12595), (23, 12625), (27, 12676), (29, 12685), (34, 12751),

Gene: Thumb_17 Start: 12253, Stop: 12624, Start Num: 3
Candidate Starts for Thumb_17:
(Start: 2 @12247 has 5 MA's), (Start: 3 @12253 has 75 MA's), (11, 12358), (21, 12418), (28, 12484), (30, 12493), (38, 12595), (39, 12613),

Gene: Tillicus_18 Start: 12659, Stop: 12970, Start Num: 4
Candidate Starts for Tillicus_18:
(Start: 4 @12659 has 29 MA's), (13, 12764), (22, 12812), (25, 12845),

Gene: TinyMiny_21 Start: 11267, Stop: 11584, Start Num: 3
Candidate Starts for TinyMiny_21:
(Start: 3 @11267 has 75 MA's), (5, 11303), (16, 11402), (19, 11426), (25, 11471), (26, 11480),

Gene: Troll4_18 Start: 12461, Stop: 12793, Start Num: 3
Candidate Starts for Troll4_18:
(Start: 3 @12461 has 75 MA's), (14, 12578), (17, 12599), (23, 12629), (27, 12680), (29, 12689), (34, 12755),

Gene: Visconti_18 Start: 12470, Stop: 12802, Start Num: 3
Candidate Starts for Visconti_18:
(Start: 3 @12470 has 75 MA's), (14, 12587), (17, 12608), (23, 12638), (27, 12689), (29, 12698), (34, 12764),

Gene: WaldoWhy_19 Start: 12466, Stop: 12798, Start Num: 3
Candidate Starts for WaldoWhy_19:
(Start: 3 @12466 has 75 MA's), (14, 12583), (17, 12604), (23, 12634), (27, 12685), (29, 12694), (34, 12760),

Gene: Wojtek_17 Start: 12987, Stop: 13298, Start Num: 4
Candidate Starts for Wojtek_17:
(Start: 4 @12987 has 29 MA's), (7, 13029), (13, 13092), (22, 13140), (25, 13173), (26, 13182),

Gene: Wollypog_8 Start: 7934, Stop: 8242, Start Num: 3
Candidate Starts for Wollypog_8:
(Start: 3 @7934 has 75 MA's), (9, 8015), (28, 8156), (33, 8195), (35, 8228),

Gene: Xenia2_15 Start: 13026, Stop: 13337, Start Num: 4
Candidate Starts for Xenia2_15:
(Start: 4 @13026 has 29 MA's), (7, 13068), (9, 13101), (25, 13212), (27, 13236), (28, 13242), (36, 13326),

Gene: Yikes_19 Start: 14371, Stop: 14682, Start Num: 4
Candidate Starts for Yikes_19:

(Start: 4 @14371 has 29 MA's), (7, 14413), (13, 14476), (22, 14524), (25, 14557), (26, 14566),

Gene: Zany_17 Start: 13500, Stop: 13811, Start Num: 4

Candidate Starts for Zany_17:

(Start: 4 @13500 has 29 MA's), (7, 13542), (13, 13605), (22, 13653), (25, 13686), (26, 13695),