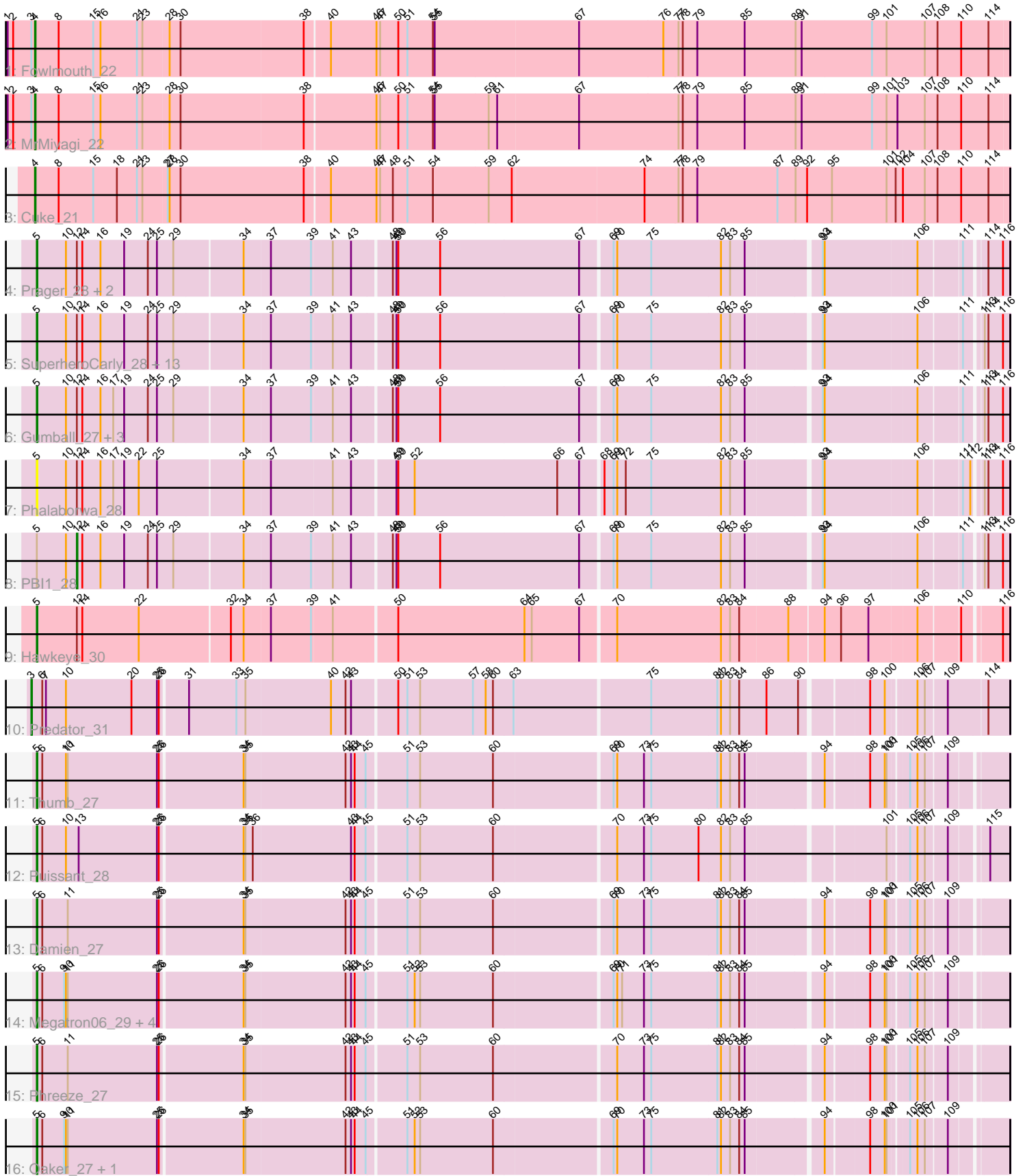


Pham 308906



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 308906 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308906 has 39 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_22
- Track 2 : MrMiyagi_22
- Track 3 : Cuke_21
- Track 4 : Prager_28, BigMama_26, Penelope2018_28
- Track 5 : SuperheroCarly_28, Butterscotch_28, Erk16_28, Visconti_28, Troll4_28, PLOT_29, Giuseppe_28, Adjutor_29, Mopey_28, Chill_29, WaldoWhy_29, Delton_28, Helpful_29, Thoth_28
- Track 6 : Gumball_27, KandZ_28, Nova_28, SirHarley_27
- Track 7 : Phalaborwa_28
- Track 8 : PBI1_28
- Track 9 : Hawkeye_30
- Track 10 : Predator_31
- Track 11 : Thumb_27
- Track 12 : Puissant_28
- Track 13 : Damien_27
- Track 14 : Megatron06_29, Beckerton_27, BobtimousPrime_29, Nish23_28, Cborch11_28
- Track 15 : Phreeze_27
- Track 16 : Oaker_27, Konstantine_32

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

The start number called the most often in the published annotations is 5, it was called in 32 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adjutor_29, Beckerton_27, BigMama_26, BobtimousPrime_29, Butterscotch_28, Cborch11_28, Chill_29, Damien_27, Delton_28, Erk16_28, Giuseppe_28, Gumball_27, Hawkeye_30, Helpful_29, KandZ_28, Konstantine_32, Megatron06_29, Mopey_28, Nish23_28, Nova_28, Oaker_27, PLOT_29, Penelope2018_28, Phalaborwa_28, Phreeze_27, Prager_28, Puissant_28, SirHarley_27, SuperheroCarly_28, Thoth_28, Thumb_27, Troll4_28, Visconti_28, WaldoWhy_29,

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

- PBI1_28,

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

- Cuke_21, Fowlmouth_22, MrMiyagi_22, Predator_31,

Summary by start number:

Start 3:

- Found in 3 of 39 (7.7%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Predator_31 (H1),

Start 4:

- Found in 3 of 39 (7.7%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cuke_21 (AC), Fowlmouth_22 (AC), MrMiyagi_22 (AC),

Start 5:

- Found in 35 of 39 (89.7%) of genes in pham
- Manual Annotations of this start: 32 of 37
- Called 97.1% of time when present
- Phage (with cluster) where this start called: Adjutor_29 (D1), Beckerton_27 (H1), BigMama_26 (D1), BobtimousPrime_29 (H1), Butterscotch_28 (D1), Cborch11_28 (H1), Chill_29 (D1), Damien_27 (H1), Delton_28 (D1), Erk16_28 (D1), Giuseppe_28 (D1), Gumball_27 (D1), Hawkeye_30 (D2), Helpful_29 (D1), KandZ_28 (D1), Konstantine_32 (H1), Megatron06_29 (H1), Mopey_28 (D1), Nish23_28 (H1), Nova_28 (D1), Oaker_27 (H1), PLOT_29 (D1), Penelope2018_28 (D1), Phalaborwa_28 (D1), Phreeze_27 (H1), Prager_28 (D1), Puissant_28 (H1), SirHarley_27 (D1), SuperheroCarly_28 (D1), Thoth_28 (D1), Thumb_27 (H1), Troll4_28 (D1), Visconti_28 (D1), WaldoWhy_29 (D1),

Start 12:

- Found in 24 of 39 (61.5%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 4.2% of time when present
- Phage (with cluster) where this start called: PBI1_28 (D1),

Summary by clusters:

There are 4 clusters represented in this pham: AC, H1, D2, D1,

Info for manual annotations of cluster AC:

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

Info for manual annotations of cluster D1:

- Start number 5 was manually annotated 21 times for cluster D1.
- Start number 12 was manually annotated 1 time for cluster D1.

Info for manual annotations of cluster D2:

- Start number 5 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster H1:

- Start number 3 was manually annotated 1 time for cluster H1.
- Start number 5 was manually annotated 10 times for cluster H1.

Gene Information:

Gene: Adjutor_29 Start: 21084, Stop: 22604, Start Num: 5

Candidate Starts for Adjutor_29:

(Start: 5 @21084 has 32 MA's), (10, 21129), (Start: 12 @21147 has 1 MA's), (14, 21156), (16, 21186), (19, 21225), (24, 21264), (25, 21279), (29, 21306), (34, 21414), (37, 21456), (39, 21522), (41, 21555), (43, 21585), (48, 21645), (49, 21651), (50, 21654), (56, 21723), (67, 21951), (69, 21999), (70, 22005), (75, 22059), (82, 22173), (83, 22188), (85, 22212), (93, 22326), (94, 22329), (106, 22476), (111, 22542), (113, 22563), (114, 22569), (116, 22593),

Gene: Beckerton_27 Start: 23092, Stop: 24594, Start Num: 5

Candidate Starts for Beckerton_27:

(Start: 5 @23092 has 32 MA's), (6, 23098), (9, 23134), (10, 23137), (11, 23140), (25, 23287), (26, 23290), (34, 23422), (35, 23425), (42, 23587), (43, 23596), (44, 23602), (45, 23620), (51, 23680), (52, 23692), (53, 23701), (60, 23821), (69, 24007), (70, 24013), (71, 24019), (73, 24055), (75, 24067), (81, 24175), (82, 24181), (83, 24196), (84, 24211), (85, 24220), (94, 24337), (98, 24400), (100, 24424), (101, 24427), (105, 24454), (106, 24466), (107, 24478), (109, 24511),

Gene: BigMama_26 Start: 21160, Stop: 22680, Start Num: 5

Candidate Starts for BigMama_26:

(Start: 5 @21160 has 32 MA's), (10, 21205), (Start: 12 @21223 has 1 MA's), (14, 21232), (16, 21262), (19, 21301), (24, 21340), (25, 21355), (29, 21382), (34, 21490), (37, 21532), (39, 21598), (41, 21631), (43, 21661), (48, 21721), (49, 21727), (50, 21730), (56, 21799), (67, 22027), (69, 22075), (70, 22081), (75, 22135), (82, 22249), (83, 22264), (85, 22288), (93, 22402), (94, 22405), (106, 22552), (111, 22618), (114, 22645), (116, 22669),

Gene: BobtimousPrime_29 Start: 23012, Stop: 24514, Start Num: 5

Candidate Starts for BobtimousPrime_29:

(Start: 5 @23012 has 32 MA's), (6, 23018), (9, 23054), (10, 23057), (11, 23060), (25, 23207), (26, 23210), (34, 23342), (35, 23345), (42, 23507), (43, 23516), (44, 23522), (45, 23540), (51, 23600), (52, 23612), (53, 23621), (60, 23741), (69, 23927), (70, 23933), (71, 23939), (73, 23975), (75, 23987), (81, 24095), (82, 24101), (83, 24116), (84, 24131), (85, 24140), (94, 24257), (98, 24320), (100, 24344), (101, 24347), (105, 24374), (106, 24386), (107, 24398), (109, 24431),

Gene: Butterscotch_28 Start: 21144, Stop: 22664, Start Num: 5

Candidate Starts for Butterscotch_28:

(Start: 5 @21144 has 32 MA's), (10, 21189), (Start: 12 @21207 has 1 MA's), (14, 21216), (16, 21246), (19, 21285), (24, 21324), (25, 21339), (29, 21366), (34, 21474), (37, 21516), (39, 21582), (41, 21615), (43, 21645), (48, 21705), (49, 21711), (50, 21714), (56, 21783), (67, 22011), (69, 22059), (70, 22065), (75, 22119), (82, 22233), (83, 22248), (85, 22272), (93, 22386), (94, 22389), (106, 22536), (111, 22602), (113, 22623), (114, 22629), (116, 22653),

Gene: Cborch11_28 Start: 22554, Stop: 24056, Start Num: 5

Candidate Starts for Cborch11_28:

(Start: 5 @22554 has 32 MA's), (6, 22560), (9, 22596), (10, 22599), (11, 22602), (25, 22749), (26, 22752), (34, 22884), (35, 22887), (42, 23049), (43, 23058), (44, 23064), (45, 23082), (51, 23142), (52,

23154), (53, 23163), (60, 23283), (69, 23469), (70, 23475), (71, 23481), (73, 23517), (75, 23529), (81, 23637), (82, 23643), (83, 23658), (84, 23673), (85, 23682), (94, 23799), (98, 23862), (100, 23886), (101, 23889), (105, 23916), (106, 23928), (107, 23940), (109, 23973),

Gene: Chill_29 Start: 21150, Stop: 22670, Start Num: 5

Candidate Starts for Chill_29:

(Start: 5 @21150 has 32 MA's), (10, 21195), (Start: 12 @21213 has 1 MA's), (14, 21222), (16, 21252), (19, 21291), (24, 21330), (25, 21345), (29, 21372), (34, 21480), (37, 21522), (39, 21588), (41, 21621), (43, 21651), (48, 21711), (49, 21717), (50, 21720), (56, 21789), (67, 22017), (69, 22065), (70, 22071), (75, 22125), (82, 22239), (83, 22254), (85, 22278), (93, 22392), (94, 22395), (106, 22542), (111, 22608), (113, 22629), (114, 22635), (116, 22659),

Gene: Cuke_21 Start: 17673, Stop: 19247, Start Num: 4

Candidate Starts for Cuke_21:

(Start: 4 @17673 has 3 MA's), (8, 17709), (15, 17766), (18, 17805), (21, 17838), (23, 17847), (27, 17886), (28, 17889), (30, 17907), (38, 18108), (40, 18147), (46, 18222), (47, 18228), (48, 18249), (51, 18273), (54, 18315), (59, 18405), (62, 18441), (74, 18654), (77, 18708), (78, 18714), (79, 18738), (87, 18870), (89, 18900), (92, 18918), (95, 18957), (101, 19047), (102, 19062), (104, 19074), (107, 19110), (108, 19131), (110, 19170), (114, 19215),

Gene: Damien_27 Start: 22555, Stop: 24057, Start Num: 5

Candidate Starts for Damien_27:

(Start: 5 @22555 has 32 MA's), (6, 22561), (11, 22603), (25, 22750), (26, 22753), (34, 22885), (35, 22888), (42, 23050), (43, 23059), (44, 23065), (45, 23083), (51, 23143), (53, 23164), (60, 23284), (69, 23470), (70, 23476), (73, 23518), (75, 23530), (81, 23638), (82, 23644), (83, 23659), (84, 23674), (85, 23683), (94, 23800), (98, 23863), (100, 23887), (101, 23890), (105, 23917), (106, 23929), (107, 23941), (109, 23974),

Gene: Delton_28 Start: 21156, Stop: 22676, Start Num: 5

Candidate Starts for Delton_28:

(Start: 5 @21156 has 32 MA's), (10, 21201), (Start: 12 @21219 has 1 MA's), (14, 21228), (16, 21258), (19, 21297), (24, 21336), (25, 21351), (29, 21378), (34, 21486), (37, 21528), (39, 21594), (41, 21627), (43, 21657), (48, 21717), (49, 21723), (50, 21726), (56, 21795), (67, 22023), (69, 22071), (70, 22077), (75, 22131), (82, 22245), (83, 22260), (85, 22284), (93, 22398), (94, 22401), (106, 22548), (111, 22614), (113, 22635), (114, 22641), (116, 22665),

Gene: Erk16_28 Start: 21147, Stop: 22667, Start Num: 5

Candidate Starts for Erk16_28:

(Start: 5 @21147 has 32 MA's), (10, 21192), (Start: 12 @21210 has 1 MA's), (14, 21219), (16, 21249), (19, 21288), (24, 21327), (25, 21342), (29, 21369), (34, 21477), (37, 21519), (39, 21585), (41, 21618), (43, 21648), (48, 21708), (49, 21714), (50, 21717), (56, 21786), (67, 22014), (69, 22062), (70, 22068), (75, 22122), (82, 22236), (83, 22251), (85, 22275), (93, 22389), (94, 22392), (106, 22539), (111, 22605), (113, 22626), (114, 22632), (116, 22656),

Gene: Fowlmouth_22 Start: 17800, Stop: 19377, Start Num: 4

Candidate Starts for Fowlmouth_22:

(1, 17755), (2, 17764), (Start: 3 @17794 has 1 MA's), (Start: 4 @17800 has 3 MA's), (8, 17839), (15, 17896), (16, 17908), (21, 17968), (23, 17977), (28, 18019), (30, 18037), (38, 18235), (40, 18274), (46, 18349), (47, 18355), (50, 18385), (51, 18400), (54, 18442), (55, 18445), (67, 18676), (76, 18814), (77, 18838), (78, 18844), (79, 18868), (85, 18946), (89, 19030), (91, 19039), (99, 19153), (101, 19177), (107, 19240), (108, 19261), (110, 19300), (114, 19345),

Gene: Giuseppe_28 Start: 21136, Stop: 22656, Start Num: 5

Candidate Starts for Giuseppe_28:

(Start: 5 @21136 has 32 MA's), (10, 21181), (Start: 12 @21199 has 1 MA's), (14, 21208), (16, 21238), (19, 21277), (24, 21316), (25, 21331), (29, 21358), (34, 21466), (37, 21508), (39, 21574), (41, 21607), (43, 21637), (48, 21697), (49, 21703), (50, 21706), (56, 21775), (67, 22003), (69, 22051), (70, 22057), (75, 22111), (82, 22225), (83, 22240), (85, 22264), (93, 22378), (94, 22381), (106, 22528), (111, 22594), (113, 22615), (114, 22621), (116, 22645),

Gene: Gumball_27 Start: 21094, Stop: 22614, Start Num: 5

Candidate Starts for Gumball_27:

(Start: 5 @21094 has 32 MA's), (10, 21139), (Start: 12 @21157 has 1 MA's), (14, 21166), (16, 21196), (17, 21217), (19, 21235), (24, 21274), (25, 21289), (29, 21316), (34, 21424), (37, 21466), (39, 21532), (41, 21565), (43, 21595), (48, 21655), (49, 21661), (50, 21664), (56, 21733), (67, 21961), (69, 22009), (70, 22015), (75, 22069), (82, 22183), (83, 22198), (85, 22222), (93, 22336), (94, 22339), (106, 22486), (111, 22552), (113, 22573), (114, 22579), (116, 22603),

Gene: Hawkeye_30 Start: 21123, Stop: 22649, Start Num: 5

Candidate Starts for Hawkeye_30:

(Start: 5 @21123 has 32 MA's), (Start: 12 @21186 has 1 MA's), (14, 21195), (22, 21288), (32, 21432), (34, 21453), (37, 21495), (39, 21561), (41, 21594), (50, 21693), (64, 21900), (65, 21912), (67, 21990), (70, 22044), (82, 22212), (83, 22227), (84, 22242), (88, 22320), (94, 22374), (96, 22401), (97, 22446), (106, 22521), (110, 22584), (116, 22638),

Gene: Helpful_29 Start: 21144, Stop: 22664, Start Num: 5

Candidate Starts for Helpful_29:

(Start: 5 @21144 has 32 MA's), (10, 21189), (Start: 12 @21207 has 1 MA's), (14, 21216), (16, 21246), (19, 21285), (24, 21324), (25, 21339), (29, 21366), (34, 21474), (37, 21516), (39, 21582), (41, 21615), (43, 21645), (48, 21705), (49, 21711), (50, 21714), (56, 21783), (67, 22011), (69, 22059), (70, 22065), (75, 22119), (82, 22233), (83, 22248), (85, 22272), (93, 22386), (94, 22389), (106, 22536), (111, 22602), (113, 22623), (114, 22629), (116, 22653),

Gene: KandZ_28 Start: 21244, Stop: 22764, Start Num: 5

Candidate Starts for KandZ_28:

(Start: 5 @21244 has 32 MA's), (10, 21289), (Start: 12 @21307 has 1 MA's), (14, 21316), (16, 21346), (17, 21367), (19, 21385), (24, 21424), (25, 21439), (29, 21466), (34, 21574), (37, 21616), (39, 21682), (41, 21715), (43, 21745), (48, 21805), (49, 21811), (50, 21814), (56, 21883), (67, 22111), (69, 22159), (70, 22165), (75, 22219), (82, 22333), (83, 22348), (85, 22372), (93, 22486), (94, 22489), (106, 22636), (111, 22702), (113, 22723), (114, 22729), (116, 22753),

Gene: Konstantine_32 Start: 23756, Stop: 25258, Start Num: 5

Candidate Starts for Konstantine_32:

(Start: 5 @23756 has 32 MA's), (6, 23762), (9, 23798), (10, 23801), (11, 23804), (25, 23951), (26, 23954), (34, 24086), (35, 24089), (42, 24251), (43, 24260), (44, 24266), (45, 24284), (51, 24344), (52, 24356), (53, 24365), (60, 24485), (69, 24671), (70, 24677), (73, 24719), (75, 24731), (81, 24839), (82, 24845), (83, 24860), (84, 24875), (85, 24884), (94, 25001), (98, 25064), (100, 25088), (101, 25091), (105, 25118), (106, 25130), (107, 25142), (109, 25175),

Gene: Megatron06_29 Start: 23088, Stop: 24590, Start Num: 5

Candidate Starts for Megatron06_29:

(Start: 5 @23088 has 32 MA's), (6, 23094), (9, 23130), (10, 23133), (11, 23136), (25, 23283), (26, 23286), (34, 23418), (35, 23421), (42, 23583), (43, 23592), (44, 23598), (45, 23616), (51, 23676), (52, 23688), (53, 23697), (60, 23817), (69, 24003), (70, 24009), (71, 24015), (73, 24051), (75, 24063), (81, 24171), (82, 24177), (83, 24192), (84, 24207), (85, 24216), (94, 24333), (98, 24396), (100, 24420), (101, 24423), (105, 24450), (106, 24462), (107, 24474), (109, 24507),

Gene: Mopey_28 Start: 21144, Stop: 22664, Start Num: 5

Candidate Starts for Mopey_28:

(Start: 5 @21144 has 32 MA's), (10, 21189), (Start: 12 @21207 has 1 MA's), (14, 21216), (16, 21246), (19, 21285), (24, 21324), (25, 21339), (29, 21366), (34, 21474), (37, 21516), (39, 21582), (41, 21615), (43, 21645), (48, 21705), (49, 21711), (50, 21714), (56, 21783), (67, 22011), (69, 22059), (70, 22065), (75, 22119), (82, 22233), (83, 22248), (85, 22272), (93, 22386), (94, 22389), (106, 22536), (111, 22602), (113, 22623), (114, 22629), (116, 22653),

Gene: MrMiyagi_22 Start: 17820, Stop: 19397, Start Num: 4

Candidate Starts for MrMiyagi_22:

(1, 17775), (2, 17784), (Start: 3 @17814 has 1 MA's), (Start: 4 @17820 has 3 MA's), (8, 17859), (15, 17916), (16, 17928), (21, 17988), (23, 17997), (28, 18039), (30, 18057), (38, 18255), (46, 18369), (47, 18375), (50, 18405), (51, 18420), (54, 18462), (55, 18465), (59, 18552), (61, 18564), (67, 18696), (77, 18858), (78, 18864), (79, 18888), (85, 18966), (89, 19050), (91, 19059), (99, 19173), (101, 19197), (103, 19215), (107, 19260), (108, 19281), (110, 19320), (114, 19365),

Gene: Nish23_28 Start: 22554, Stop: 24056, Start Num: 5

Candidate Starts for Nish23_28:

(Start: 5 @22554 has 32 MA's), (6, 22560), (9, 22596), (10, 22599), (11, 22602), (25, 22749), (26, 22752), (34, 22884), (35, 22887), (42, 23049), (43, 23058), (44, 23064), (45, 23082), (51, 23142), (52, 23154), (53, 23163), (60, 23283), (69, 23469), (70, 23475), (71, 23481), (73, 23517), (75, 23529), (81, 23637), (82, 23643), (83, 23658), (84, 23673), (85, 23682), (94, 23799), (98, 23862), (100, 23886), (101, 23889), (105, 23916), (106, 23928), (107, 23940), (109, 23973),

Gene: Nova_28 Start: 21571, Stop: 23091, Start Num: 5

Candidate Starts for Nova_28:

(Start: 5 @21571 has 32 MA's), (10, 21616), (Start: 12 @21634 has 1 MA's), (14, 21643), (16, 21673), (17, 21694), (19, 21712), (24, 21751), (25, 21766), (29, 21793), (34, 21901), (37, 21943), (39, 22009), (41, 22042), (43, 22072), (48, 22132), (49, 22138), (50, 22141), (56, 22210), (67, 22438), (69, 22486), (70, 22492), (75, 22546), (82, 22660), (83, 22675), (85, 22699), (93, 22813), (94, 22816), (106, 22963), (111, 23029), (113, 23050), (114, 23056), (116, 23080),

Gene: Oaker_27 Start: 22812, Stop: 24314, Start Num: 5

Candidate Starts for Oaker_27:

(Start: 5 @22812 has 32 MA's), (6, 22818), (9, 22854), (10, 22857), (11, 22860), (25, 23007), (26, 23010), (34, 23142), (35, 23145), (42, 23307), (43, 23316), (44, 23322), (45, 23340), (51, 23400), (52, 23412), (53, 23421), (60, 23541), (69, 23727), (70, 23733), (73, 23775), (75, 23787), (81, 23895), (82, 23901), (83, 23916), (84, 23931), (85, 23940), (94, 24057), (98, 24120), (100, 24144), (101, 24147), (105, 24174), (106, 24186), (107, 24198), (109, 24231),

Gene: PBI1_28 Start: 21138, Stop: 22595, Start Num: 12

Candidate Starts for PBI1_28:

(Start: 5 @21075 has 32 MA's), (10, 21120), (Start: 12 @21138 has 1 MA's), (14, 21147), (16, 21177), (19, 21216), (24, 21255), (25, 21270), (29, 21297), (34, 21405), (37, 21447), (39, 21513), (41, 21546), (43, 21576), (48, 21636), (49, 21642), (50, 21645), (56, 21714), (67, 21942), (69, 21990), (70, 21996), (75, 22050), (82, 22164), (83, 22179), (85, 22203), (93, 22317), (94, 22320), (106, 22467), (111, 22533), (113, 22554), (114, 22560), (116, 22584),

Gene: PLOT_29 Start: 21147, Stop: 22667, Start Num: 5

Candidate Starts for PLOT_29:

(Start: 5 @21147 has 32 MA's), (10, 21192), (Start: 12 @21210 has 1 MA's), (14, 21219), (16, 21249), (19, 21288), (24, 21327), (25, 21342), (29, 21369), (34, 21477), (37, 21519), (39, 21585), (41, 21618),

(43, 21648), (48, 21708), (49, 21714), (50, 21717), (56, 21786), (67, 22014), (69, 22062), (70, 22068), (75, 22122), (82, 22236), (83, 22251), (85, 22275), (93, 22389), (94, 22392), (106, 22539), (111, 22605), (113, 22626), (114, 22632), (116, 22656),

Gene: Penelope2018_28 Start: 21144, Stop: 22664, Start Num: 5

Candidate Starts for Penelope2018_28:

(Start: 5 @21144 has 32 MA's), (10, 21189), (Start: 12 @21207 has 1 MA's), (14, 21216), (16, 21246), (19, 21285), (24, 21324), (25, 21339), (29, 21366), (34, 21474), (37, 21516), (39, 21582), (41, 21615), (43, 21645), (48, 21705), (49, 21711), (50, 21714), (56, 21783), (67, 22011), (69, 22059), (70, 22065), (75, 22119), (82, 22233), (83, 22248), (85, 22272), (93, 22386), (94, 22389), (106, 22536), (111, 22602), (114, 22629), (116, 22653),

Gene: Phalaborwa_28 Start: 21171, Stop: 22691, Start Num: 5

Candidate Starts for Phalaborwa_28:

(Start: 5 @21171 has 32 MA's), (10, 21216), (Start: 12 @21234 has 1 MA's), (14, 21243), (16, 21273), (17, 21294), (19, 21312), (22, 21336), (25, 21366), (34, 21501), (37, 21543), (41, 21642), (43, 21672), (49, 21738), (50, 21741), (52, 21768), (66, 22002), (67, 22038), (68, 22071), (69, 22086), (70, 22092), (72, 22104), (75, 22146), (82, 22260), (83, 22275), (85, 22299), (93, 22413), (94, 22416), (106, 22563), (111, 22629), (112, 22641), (113, 22650), (114, 22656), (116, 22680),

Gene: Phreeze_27 Start: 22555, Stop: 24057, Start Num: 5

Candidate Starts for Phreeze_27:

(Start: 5 @22555 has 32 MA's), (6, 22561), (11, 22603), (25, 22750), (26, 22753), (34, 22885), (35, 22888), (42, 23050), (43, 23059), (44, 23065), (45, 23083), (51, 23143), (53, 23164), (60, 23284), (70, 23476), (73, 23518), (75, 23530), (81, 23638), (82, 23644), (83, 23659), (84, 23674), (85, 23683), (94, 23800), (98, 23863), (100, 23887), (101, 23890), (105, 23917), (106, 23929), (107, 23941), (109, 23974),

Gene: Prager_28 Start: 21156, Stop: 22676, Start Num: 5

Candidate Starts for Prager_28:

(Start: 5 @21156 has 32 MA's), (10, 21201), (Start: 12 @21219 has 1 MA's), (14, 21228), (16, 21258), (19, 21297), (24, 21336), (25, 21351), (29, 21378), (34, 21486), (37, 21528), (39, 21594), (41, 21627), (43, 21657), (48, 21717), (49, 21723), (50, 21726), (56, 21795), (67, 22023), (69, 22071), (70, 22077), (75, 22131), (82, 22245), (83, 22260), (85, 22284), (93, 22398), (94, 22401), (106, 22548), (111, 22614), (114, 22641), (116, 22665),

Gene: Predator_31 Start: 24112, Stop: 25638, Start Num: 3

Candidate Starts for Predator_31:

(Start: 3 @24112 has 1 MA's), (6, 24127), (7, 24133), (10, 24166), (20, 24274), (25, 24316), (26, 24319), (31, 24361), (33, 24439), (35, 24454), (40, 24592), (42, 24616), (43, 24625), (50, 24694), (51, 24709), (53, 24730), (57, 24817), (58, 24838), (60, 24850), (63, 24883), (75, 25096), (81, 25204), (82, 25210), (83, 25225), (84, 25240), (86, 25285), (90, 25336), (98, 25432), (100, 25456), (106, 25498), (107, 25510), (109, 25543), (114, 25603),

Gene: Puissant_28 Start: 23018, Stop: 24520, Start Num: 5

Candidate Starts for Puissant_28:

(Start: 5 @23018 has 32 MA's), (6, 23024), (10, 23063), (13, 23084), (25, 23213), (26, 23216), (34, 23348), (35, 23351), (36, 23363), (43, 23522), (44, 23528), (45, 23546), (51, 23606), (53, 23627), (60, 23747), (70, 23939), (73, 23981), (75, 23993), (80, 24071), (82, 24107), (83, 24122), (85, 24146), (101, 24353), (105, 24380), (106, 24392), (107, 24404), (109, 24437), (115, 24488),

Gene: SirHarley_27 Start: 21076, Stop: 22596, Start Num: 5

Candidate Starts for SirHarley_27:

(Start: 5 @21076 has 32 MA's), (10, 21121), (Start: 12 @21139 has 1 MA's), (14, 21148), (16, 21178), (17, 21199), (19, 21217), (24, 21256), (25, 21271), (29, 21298), (34, 21406), (37, 21448), (39, 21514), (41, 21547), (43, 21577), (48, 21637), (49, 21643), (50, 21646), (56, 21715), (67, 21943), (69, 21991), (70, 21997), (75, 22051), (82, 22165), (83, 22180), (85, 22204), (93, 22318), (94, 22321), (106, 22468), (111, 22534), (113, 22555), (114, 22561), (116, 22585),

Gene: SuperheroCarly_28 Start: 21006, Stop: 22526, Start Num: 5

Candidate Starts for SuperheroCarly_28:

(Start: 5 @21006 has 32 MA's), (10, 21051), (Start: 12 @21069 has 1 MA's), (14, 21078), (16, 21108), (19, 21147), (24, 21186), (25, 21201), (29, 21228), (34, 21336), (37, 21378), (39, 21444), (41, 21477), (43, 21507), (48, 21567), (49, 21573), (50, 21576), (56, 21645), (67, 21873), (69, 21921), (70, 21927), (75, 21981), (82, 22095), (83, 22110), (85, 22134), (93, 22248), (94, 22251), (106, 22398), (111, 22464), (113, 22485), (114, 22491), (116, 22515),

Gene: Thoth_28 Start: 21141, Stop: 22661, Start Num: 5

Candidate Starts for Thoth_28:

(Start: 5 @21141 has 32 MA's), (10, 21186), (Start: 12 @21204 has 1 MA's), (14, 21213), (16, 21243), (19, 21282), (24, 21321), (25, 21336), (29, 21363), (34, 21471), (37, 21513), (39, 21579), (41, 21612), (43, 21642), (48, 21702), (49, 21708), (50, 21711), (56, 21780), (67, 22008), (69, 22056), (70, 22062), (75, 22116), (82, 22230), (83, 22245), (85, 22269), (93, 22383), (94, 22386), (106, 22533), (111, 22599), (113, 22620), (114, 22626), (116, 22650),

Gene: Thumb_27 Start: 22555, Stop: 24057, Start Num: 5

Candidate Starts for Thumb_27:

(Start: 5 @22555 has 32 MA's), (6, 22561), (10, 22600), (11, 22603), (25, 22750), (26, 22753), (34, 22885), (35, 22888), (42, 23050), (43, 23059), (44, 23065), (45, 23083), (51, 23143), (53, 23164), (60, 23284), (69, 23470), (70, 23476), (73, 23518), (75, 23530), (81, 23638), (82, 23644), (83, 23659), (84, 23674), (85, 23683), (94, 23800), (98, 23863), (100, 23887), (101, 23890), (105, 23917), (106, 23929), (107, 23941), (109, 23974),

Gene: Troll4_28 Start: 21145, Stop: 22665, Start Num: 5

Candidate Starts for Troll4_28:

(Start: 5 @21145 has 32 MA's), (10, 21190), (Start: 12 @21208 has 1 MA's), (14, 21217), (16, 21247), (19, 21286), (24, 21325), (25, 21340), (29, 21367), (34, 21475), (37, 21517), (39, 21583), (41, 21616), (43, 21646), (48, 21706), (49, 21712), (50, 21715), (56, 21784), (67, 22012), (69, 22060), (70, 22066), (75, 22120), (82, 22234), (83, 22249), (85, 22273), (93, 22387), (94, 22390), (106, 22537), (111, 22603), (113, 22624), (114, 22630), (116, 22654),

Gene: Visconti_28 Start: 21154, Stop: 22674, Start Num: 5

Candidate Starts for Visconti_28:

(Start: 5 @21154 has 32 MA's), (10, 21199), (Start: 12 @21217 has 1 MA's), (14, 21226), (16, 21256), (19, 21295), (24, 21334), (25, 21349), (29, 21376), (34, 21484), (37, 21526), (39, 21592), (41, 21625), (43, 21655), (48, 21715), (49, 21721), (50, 21724), (56, 21793), (67, 22021), (69, 22069), (70, 22075), (75, 22129), (82, 22243), (83, 22258), (85, 22282), (93, 22396), (94, 22399), (106, 22546), (111, 22612), (113, 22633), (114, 22639), (116, 22663),

Gene: WaldoWhy_29 Start: 21150, Stop: 22670, Start Num: 5

Candidate Starts for WaldoWhy_29:

(Start: 5 @21150 has 32 MA's), (10, 21195), (Start: 12 @21213 has 1 MA's), (14, 21222), (16, 21252), (19, 21291), (24, 21330), (25, 21345), (29, 21372), (34, 21480), (37, 21522), (39, 21588), (41, 21621), (43, 21651), (48, 21711), (49, 21717), (50, 21720), (56, 21789), (67, 22017), (69, 22065), (70, 22071), (75, 22125), (82, 22239), (83, 22254), (85, 22278), (93, 22392), (94, 22395), (106, 22542), (111, 22608), (113, 22629), (114, 22635), (116, 22659),

