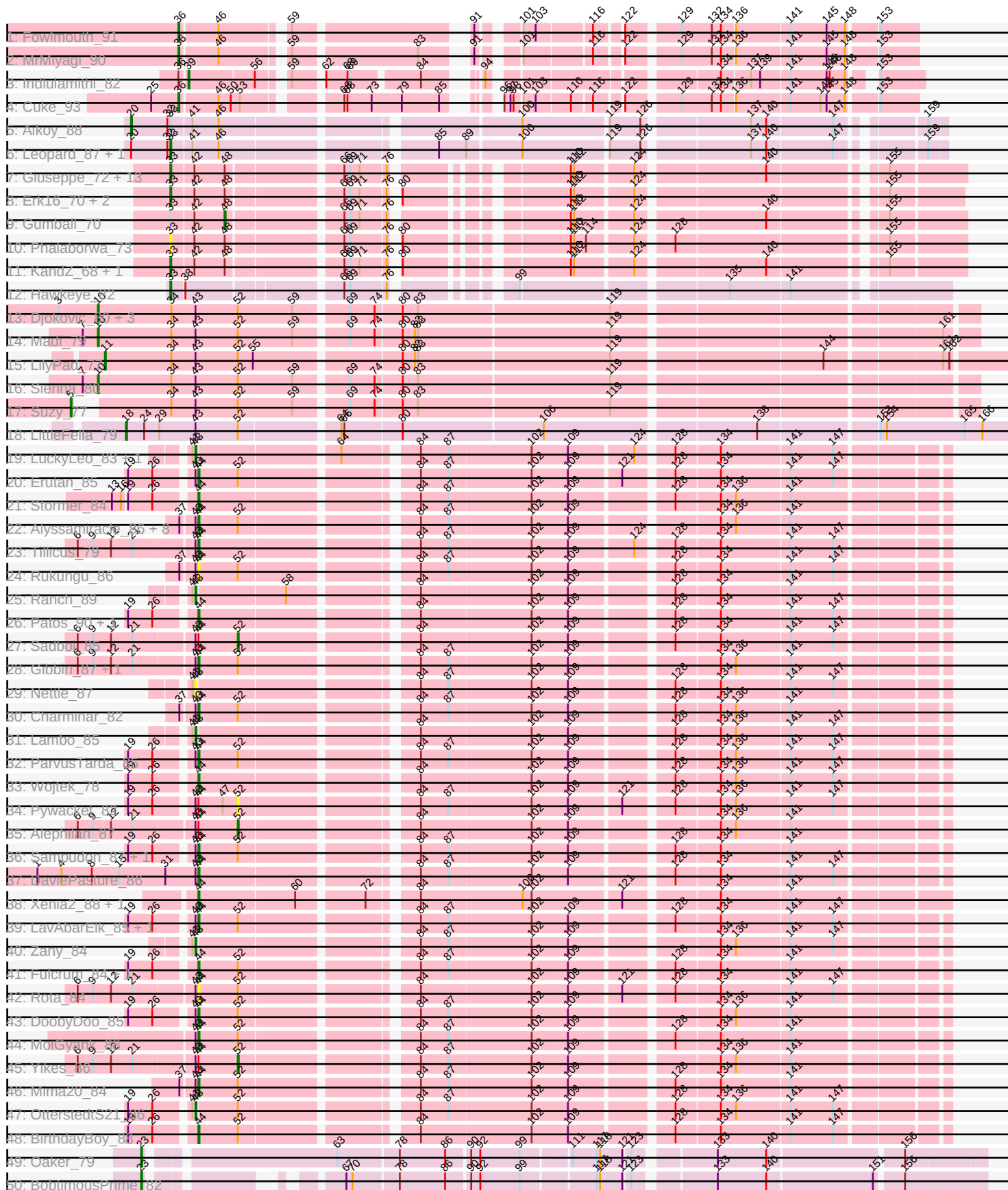
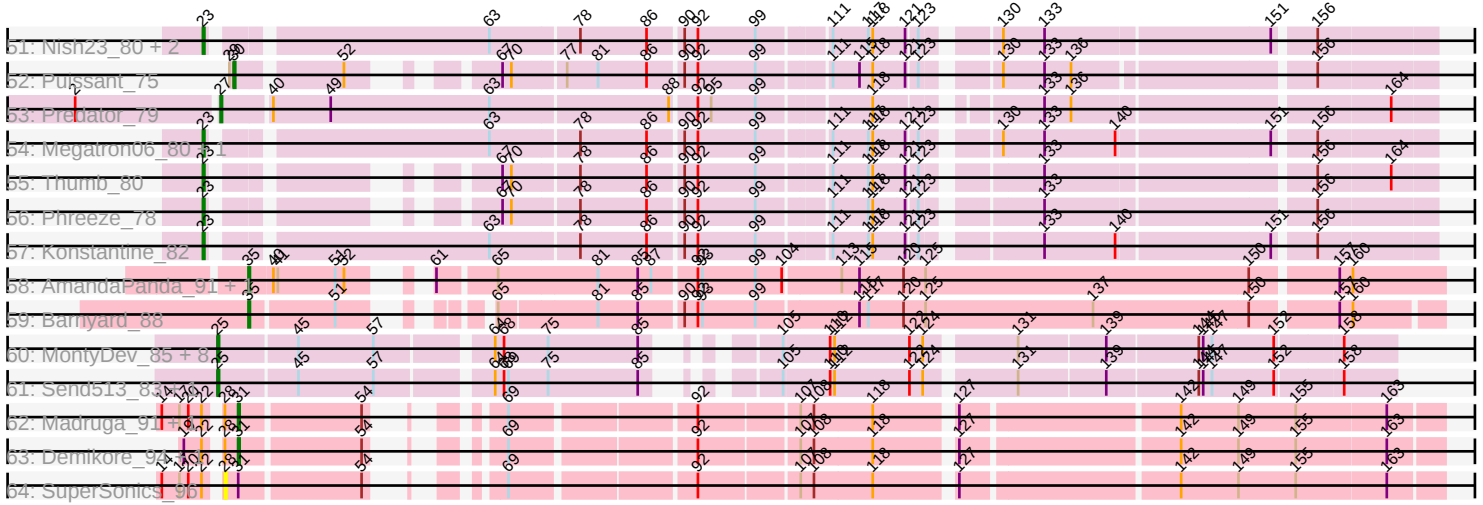


Pham 330655



Pham 330655



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 330655 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330655 has 114 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_91
- Track 2 : MrMiyagi_90
- Track 3 : Indlulamithi_82
- Track 4 : Cuke_93
- Track 5 : Aikoy_88
- Track 6 : Leopard_87, Onyinye_87
- Track 7 : Giuseppe_72, Mopey_72, Visconti_71, Adjutor_68, Helpful_73, SuperheroCarly_70, Butterscotch_68, Penelope2018_70, Thoth_70, SirHarley_72, Delton_70, Nova_70, BigMama_68, Prager_71
- Track 8 : Erk16_70, WaldoWhy_72, Chill_72
- Track 9 : Gumball_70
- Track 10 : Phalaborwa_73
- Track 11 : KandZ_68, PLOT_70
- Track 12 : Hawkeye_82
- Track 13 : Djokovic_80, Terapin_81, BiteSize_80, Beyoncage_80
- Track 14 : Madi_79
- Track 15 : LilyPad_77
- Track 16 : Sienna_80
- Track 17 : Suzy_77
- Track 18 : LittleFella_79
- Track 19 : LuckyLeo_83, Apeppi_81
- Track 20 : Erutan_85
- Track 21 : Stormer_84
- Track 22 : Alyssamiracle_86, Genamy16_86, Rumi_84, Riduram_82, Avian_81, RazorC_83, NovaSharks_85, Jamemuya19_81, Astralis_83
- Track 23 : Tillicus_79
- Track 24 : Rukungu_86
- Track 25 : Ranch_89
- Track 26 : Patos_90, NorManre_90
- Track 27 : Sadboi_85
- Track 28 : Gibbin_87, GretelLyn_85
- Track 29 : Nettle_87
- Track 30 : Charminar_82
- Track 31 : Lambo_85
- Track 32 : ParvusTarda_85
- Track 33 : Wojtek_78
- Track 34 : Pywacket_82

- Track 35 : Alephilan_87
- Track 36 : Sampudon_87, Jalebi_85
- Track 37 : DaviePasture_86
- Track 38 : Xenia2_88, DumpTruck_88
- Track 39 : LavAbarElk_85, Lila22_86
- Track 40 : Zany_84
- Track 41 : Fulcrum_84, GOATification_84
- Track 42 : Rota_84
- Track 43 : DoobyDoo_85
- Track 44 : MoiGyank_88
- Track 45 : Yikes_86
- Track 46 : Mima20_84
- Track 47 : OtterstedtS21_86
- Track 48 : BirthdayBoy_88
- Track 49 : Oaker_79
- Track 50 : BobtimousPrime_82
- Track 51 : Nish23_80, Damien_79, Cborch11_80
- Track 52 : Puissant_75
- Track 53 : Predator_79
- Track 54 : Megatron06_80, Beckerton_78
- Track 55 : Thumb_80
- Track 56 : Phreeze_78
- Track 57 : Konstantine_82
- Track 58 : AmandaPanda_91, DrLupo_91
- Track 59 : Barnyard_88
- Track 60 : MontyDev_85, Nilo_86, Gimesa_84, Riparian_85, Candle_81, Weiss13_83, Zenon_85, Yelo_82, Papyrus_82
- Track 61 : Send513_83, Rope_83
- Track 62 : Madrugá_91, Patience_93
- Track 63 : Demikore_94, Labelle_92
- Track 64 : SuperSonics_96

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

The start number called the most often in the published annotations is 44, it was called in 31 of the 103 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alyssamiracle_86, Astralis_83, Avian_81, BirthdayBoy_88, Charminar_82, DaviePasture_86, DoobyDoo_85, DumpTruck_88, Erutan_85, Fulcrum_84, GOATification_84, Genamy16_86, Gibbin_87, Gretellyn_85, Jalebi_85, Jamemuya19_81, LavAbarElk_85, Lila22_86, Mima20_84, MoiGyank_88, NorManre_90, NovaSharks_85, ParvusTarda_85, Patos_90, RazorC_83, Riduram_82, Rota_84, Rukungu_86, Rumi_84, Sampudon_87, Stormer_84, Tillicus_79, Wojtek_78, Xenia2_88,

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

- Alephilan_87, Pywacket_82, Sadboi_85, Yikes_86,

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

• Adjutor_68, Aikoy_88, AmandaPanda_91, Apeppi_81, Barnyard_88, Beckerton_78, Beyoncage_80, BigMama_68, BiteSize_80, BobtimousPrime_82, Butterscotch_68, Candle_81, Cborch11_80, Chill_72, Cuke_93, Damien_79, Delton_70, Demikore_94, Djokovic_80, DrLupo_91, Erk16_70, Fowlmouth_91, Gimesa_84, Giuseppe_72, Gumball_70, Hawkeye_82, Helpful_73, Indlulamithi_82, KandZ_68, Konstantine_82, Labelle_92, Lambo_85, Leopard_87, LilyPad_77, LittleFella_79, LuckyLeo_83, Madi_79, Madruga_91, Megatron06_80, MontyDev_85, Mopey_72, MrMiyagi_90, Nettle_87, Nilo_86, Nish23_80, Nova_70, Oaker_79, Onyinye_87, OtterstedtS21_86, PLOT_70, Papyrus_82, Patience_93, Penelope2018_70, Phalaborwa_73, Phreeze_78, Prager_71, Predator_79, Puissant_75, Ranch_89, Riparian_85, Rope_83, Send513_83, Sienna_80, SirHarley_72, SuperSonics_96, SuperheroCarly_70, Suzy_77, Terapin_81, Thoth_70, Thumb_80, Visconti_71, WaldoWhy_72, Weiss13_83, Yelo_82, Zany_84, Zenon_85,

Summary by start number:

Start 5:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Suzy_77 (DG1),

Start 10:

- Found in 6 of 114 (5.3%) of genes in pham
- Manual Annotations of this start: 6 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beyoncage_80 (DG1), BiteSize_80 (DG1), Djokovic_80 (DG1), Madi_79 (DG1), Sienna_80 (DG1), Terapin_81 (DG1),

Start 11:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilyPad_77 (DG1),

Start 18:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LittleFella_79 (DG2),

Start 20:

- Found in 6 of 114 (5.3%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Aikoy_88 (AE),

Start 23:

- Found in 10 of 114 (8.8%) of genes in pham
- Manual Annotations of this start: 9 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton_78 (H1), BobtimousPrime_82 (H1), Cborch11_80 (H1), Damien_79 (H1), Konstantine_82 (H1), Megatron06_80

(H1), Nish23_80 (H1), Oaker_79 (H1), Phreeze_78 (H1), Thumb_80 (H1),

Start 25:

- Found in 12 of 114 (10.5%) of genes in pham
- Manual Annotations of this start: 10 of 103
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Candle_81 (R), Gimesa_84 (R), MontyDev_85 (R), Nilo_86 (R), Papyrus_82 (R), Riparian_85 (R), Rope_83 (R), Send513_83 (R), Weiss13_83 (R), Yelo_82 (R), Zenon_85 (R),

Start 27:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Predator_79 (H1),

Start 28:

- Found in 5 of 114 (4.4%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: SuperSonics_96 (U),

Start 30:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Puissant_75 (H1),

Start 31:

- Found in 6 of 114 (5.3%) of genes in pham
- Manual Annotations of this start: 3 of 103
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Demikore_94 (U), Labelle_92 (U), Madrug_91 (U), Patience_93 (U),

Start 33:

- Found in 25 of 114 (21.9%) of genes in pham
- Manual Annotations of this start: 22 of 103
- Called 92.0% of time when present
- Phage (with cluster) where this start called: Adjutor_68 (D1), BigMama_68 (D1), Butterscotch_68 (D1), Chill_72 (D1), Delton_70 (D1), Erk16_70 (D1), Giuseppe_72 (D1), Hawkeye_82 (D2), Helpful_73 (D1), KandZ_68 (D1), Leopard_87 (AE), Mopey_72 (D1), Nova_70 (D1), Onyinye_87 (AE), PLOT_70 (D1), Penelope2018_70 (D1), Phalaborwa_73 (D1), Prager_71 (D1), SirHarley_72 (D1), SuperheroCarly_70 (D1), Thoth_70 (D1), Visconti_71 (D1), WaldoWhy_72 (D1),

Start 35:

- Found in 3 of 114 (2.6%) of genes in pham
- Manual Annotations of this start: 2 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AmandaPanda_91 (H2), Barnyard_88 (H2), DrLupo_91 (H2),

Start 36:

- Found in 4 of 114 (3.5%) of genes in pham
- Manual Annotations of this start: 3 of 103
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Cuke_93 (AC), Fowlmouth_91 (AC), MrMiyagi_90 (AC),

Start 39:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi_82 (AC),

Start 43:

- Found in 45 of 114 (39.5%) of genes in pham
- Manual Annotations of this start: 6 of 103
- Called 15.6% of time when present
- Phage (with cluster) where this start called: Apeppi_81 (DV), Lambo_85 (DV), LuckyLeo_83 (DV), Nettle_87 (DV), OtterstedtS21_86 (DV), Ranch_89 (DV), Zany_84 (DV),

Start 44:

- Found in 38 of 114 (33.3%) of genes in pham
- Manual Annotations of this start: 31 of 103
- Called 89.5% of time when present
- Phage (with cluster) where this start called: Alyssamiracle_86 (DV), Astralis_83 (DV), Avian_81 (DV), BirthdayBoy_88 (DV), Charminar_82 (DV), DaviePasture_86 (DV), DoobyDoo_85 (DV), DumpTruck_88 (DV), Erutan_85 (DV), Fulcrum_84 (DV), GOATification_84 (DV), Genamy16_86 (DV), Gibbin_87 (DV), Gretellyn_85 (DV), Jalebi_85 (DV), Jamemuya19_81 (DV), LavAbarElk_85 (DV), Lila22_86 (DV), Mima20_84 (DV), MoiGyank_88 (DV), NorManre_90 (DV), NovaSharks_85 (DV), ParvusTarda_85 (DV), Patos_90 (DV), RazorC_83 (DV), Riduram_82 (DV), Rota_84 (DV), Rukungu_86 (DV), Rumi_84 (DV), Sampudon_87 (DV), Stormer_84 (DV), Tillicus_79 (DV), Wojtek_78 (DV), Xenia2_88 (DV),

Start 48:

- Found in 21 of 114 (18.4%) of genes in pham
- Manual Annotations of this start: 1 of 103
- Called 4.8% of time when present
- Phage (with cluster) where this start called: Gumball_70 (D1),

Start 52:

- Found in 43 of 114 (37.7%) of genes in pham
- Manual Annotations of this start: 3 of 103
- Called 9.3% of time when present
- Phage (with cluster) where this start called: Alephilan_87 (DV), Pywacket_82 (DV), Sadboi_85 (DV), Yikes_86 (DV),

Summary by clusters:

There are 11 clusters represented in this pham: AC, AE, H2, H1, DG2, R, U, DV, DG1, D2, D1,

Info for manual annotations of cluster AC:

- Start number 36 was manually annotated 3 times for cluster AC.
- Start number 39 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AE:

- Start number 20 was manually annotated 1 time for cluster AE.
- Start number 33 was manually annotated 2 times for cluster AE.

Info for manual annotations of cluster D1:

- Start number 33 was manually annotated 19 times for cluster D1.
- Start number 48 was manually annotated 1 time for cluster D1.

Info for manual annotations of cluster D2:

- Start number 33 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 5 was manually annotated 1 time for cluster DG1.
- Start number 10 was manually annotated 6 times for cluster DG1.
- Start number 11 was manually annotated 1 time for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 18 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 43 was manually annotated 6 times for cluster DV.
- Start number 44 was manually annotated 31 times for cluster DV.
- Start number 52 was manually annotated 3 times for cluster DV.

Info for manual annotations of cluster H1:

- Start number 23 was manually annotated 9 times for cluster H1.
- Start number 27 was manually annotated 1 time for cluster H1.
- Start number 30 was manually annotated 1 time for cluster H1.

Info for manual annotations of cluster H2:

- Start number 35 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 25 was manually annotated 10 times for cluster R.

Info for manual annotations of cluster U:

- Start number 31 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Adjutor_68 Start: 54806, Stop: 55477, Start Num: 33

Candidate Starts for Adjutor_68:

(Start: 33 @54806 has 22 MA's), (42, 54827), (Start: 48 @54857 has 1 MA's), (66, 54959), (69, 54965), (71, 54974), (76, 54998), (110, 55133), (112, 55136), (124, 55190), (140, 55307), (155, 55406),

Gene: Aikoy_88 Start: 61398, Stop: 62117, Start Num: 20

Candidate Starts for Aikoy_88:

(Start: 20 @61398 has 1 MA's), (32, 61434), (Start: 33 @61437 has 22 MA's), (41, 61455), (46, 61479), (100, 61746), (119, 61827), (126, 61857), (137, 61953), (140, 61968), (147, 62031), (159, 62100),

Gene: Alephilan_87 Start: 58613, Stop: 59248, Start Num: 52

Candidate Starts for Alephilan_87:

(6, 58460), (9, 58475), (12, 58493), (21, 58514), (Start: 43 @58571 has 6 MA's), (Start: 44 @58574 has 31 MA's), (Start: 52 @58613 has 3 MA's), (84, 58766), (102, 58874), (109, 58910), (134, 59042), (136, 59057), (141, 59108),

Gene: Alyssamiracle_86 Start: 56530, Stop: 57204, Start Num: 44

Candidate Starts for Alyssamiracle_86:

(37, 56515), (Start: 43 @56527 has 6 MA's), (Start: 44 @56530 has 31 MA's), (Start: 52 @56569 has 3 MA's), (84, 56722), (87, 56749), (102, 56830), (109, 56866), (134, 56998), (136, 57013), (141, 57064),

Gene: AmandaPanda_91 Start: 60981, Stop: 61727, Start Num: 35

Candidate Starts for AmandaPanda_91:

(Start: 35 @60981 has 2 MA's), (40, 60996), (41, 60999), (51, 61038), (Start: 52 @61044 has 3 MA's), (61, 61068), (65, 61104), (81, 61170), (85, 61197), (87, 61206), (92, 61233), (93, 61236), (99, 61272), (104, 61290), (113, 61326), (115, 61338), (120, 61368), (125, 61383), (150, 61602), (157, 61656), (160, 61665),

Gene: Apeppi_81 Start: 57772, Stop: 58446, Start Num: 43

Candidate Starts for Apeppi_81:

(41, 57769), (Start: 43 @57772 has 6 MA's), (64, 57901), (84, 57964), (87, 57991), (102, 58072), (109, 58108), (124, 58168), (128, 58198), (134, 58240), (141, 58306), (147, 58348),

Gene: Astralis_83 Start: 56109, Stop: 56783, Start Num: 44

Candidate Starts for Astralis_83:

(37, 56094), (Start: 43 @56106 has 6 MA's), (Start: 44 @56109 has 31 MA's), (Start: 52 @56148 has 3 MA's), (84, 56301), (87, 56328), (102, 56409), (109, 56445), (134, 56577), (136, 56592), (141, 56643),

Gene: Avian_81 Start: 56261, Stop: 56935, Start Num: 44

Candidate Starts for Avian_81:

(37, 56246), (Start: 43 @56258 has 6 MA's), (Start: 44 @56261 has 31 MA's), (Start: 52 @56300 has 3 MA's), (84, 56453), (87, 56480), (102, 56561), (109, 56597), (134, 56729), (136, 56744), (141, 56795),

Gene: Barnyard_88 Start: 60764, Stop: 61486, Start Num: 35

Candidate Starts for Barnyard_88:

(Start: 35 @60764 has 2 MA's), (51, 60818), (65, 60872), (81, 60935), (85, 60962), (90, 60989), (92, 60998), (93, 61001), (99, 61037), (115, 61103), (117, 61109), (120, 61133), (125, 61148), (137, 61262), (150, 61367), (157, 61421), (160, 61430),

Gene: Beckerton_78 Start: 59931, Stop: 60683, Start Num: 23

Candidate Starts for Beckerton_78:

(Start: 23 @59931 has 9 MA's), (63, 60102), (78, 60159), (86, 60204), (90, 60225), (92, 60234), (99, 60273), (111, 60315), (117, 60339), (118, 60342), (121, 60363), (123, 60369), (130, 60408), (133, 60435), (140, 60483), (151, 60582), (156, 60606),

Gene: Beyoncage_80 Start: 55697, Stop: 56518, Start Num: 10

Candidate Starts for Beyoncage_80:

(3, 55658), (Start: 10 @55697 has 6 MA's), (34, 55769), (Start: 43 @55793 has 6 MA's), (Start: 52 @55835 has 3 MA's), (59, 55889), (69, 55937), (74, 55961), (80, 55985), (83, 56000), (119, 56186),

Gene: BigMama_68 Start: 54879, Stop: 55550, Start Num: 33

Candidate Starts for BigMama_68:

(Start: 33 @54879 has 22 MA's), (42, 54900), (Start: 48 @54930 has 1 MA's), (66, 55032), (69, 55038), (71, 55047), (76, 55071), (110, 55206), (112, 55209), (124, 55263), (140, 55380), (155, 55479),

Gene: BirthdayBoy_88 Start: 58563, Stop: 59237, Start Num: 44

Candidate Starts for BirthdayBoy_88:

(19, 58503), (26, 58527), (Start: 44 @58563 has 31 MA's), (Start: 52 @58602 has 3 MA's), (84, 58755), (102, 58863), (109, 58899), (128, 58989), (134, 59031), (141, 59097), (147, 59139),

Gene: BiteSize_80 Start: 55783, Stop: 56604, Start Num: 10

Candidate Starts for BiteSize_80:

(3, 55744), (Start: 10 @55783 has 6 MA's), (34, 55855), (Start: 43 @55879 has 6 MA's), (Start: 52 @55921 has 3 MA's), (59, 55975), (69, 56023), (74, 56047), (80, 56071), (83, 56086), (119, 56272),

Gene: BobtimousPrime_82 Start: 60220, Stop: 60924, Start Num: 23

Candidate Starts for BobtimousPrime_82:

(Start: 23 @60220 has 9 MA's), (67, 60352), (70, 60358), (78, 60400), (86, 60445), (90, 60466), (92, 60475), (99, 60514), (117, 60580), (118, 60583), (121, 60604), (123, 60610), (133, 60676), (140, 60724), (151, 60823), (156, 60847),

Gene: Butterscotch_68 Start: 54857, Stop: 55528, Start Num: 33

Candidate Starts for Butterscotch_68:

(Start: 33 @54857 has 22 MA's), (42, 54878), (Start: 48 @54908 has 1 MA's), (66, 55010), (69, 55016), (71, 55025), (76, 55049), (110, 55184), (112, 55187), (124, 55241), (140, 55358), (155, 55457),

Gene: Candle_81 Start: 62723, Stop: 63430, Start Num: 25

Candidate Starts for Candle_81:

(Start: 25 @62723 has 10 MA's), (45, 62774), (57, 62825), (64, 62894), (68, 62900), (75, 62930), (85, 62990), (105, 63038), (110, 63068), (112, 63071), (122, 63122), (124, 63131), (131, 63185), (139, 63242), (144, 63302), (145, 63305), (147, 63311), (152, 63353), (158, 63395),

Gene: Cborch11_80 Start: 59117, Stop: 59869, Start Num: 23

Candidate Starts for Cborch11_80:

(Start: 23 @59117 has 9 MA's), (63, 59288), (78, 59345), (86, 59390), (90, 59411), (92, 59420), (99, 59459), (111, 59501), (117, 59525), (118, 59528), (121, 59549), (123, 59555), (130, 59594), (133, 59621), (151, 59768), (156, 59792),

Gene: Charminar_82 Start: 55769, Stop: 56443, Start Num: 44

Candidate Starts for Charminar_82:

(37, 55754), (Start: 43 @55766 has 6 MA's), (Start: 44 @55769 has 31 MA's), (Start: 52 @55808 has 3 MA's), (84, 55961), (87, 55988), (102, 56069), (109, 56105), (128, 56195), (134, 56237), (136, 56252), (141, 56303),

Gene: Chill_72 Start: 54894, Stop: 55562, Start Num: 33

Candidate Starts for Chill_72:

(Start: 33 @54894 has 22 MA's), (42, 54915), (Start: 48 @54945 has 1 MA's), (66, 55047), (69, 55053), (71, 55062), (76, 55086), (80, 55089), (110, 55221), (112, 55224), (124, 55278), (155, 55494),

Gene: Cuke_93 Start: 54589, Stop: 55197, Start Num: 36

Candidate Starts for Cuke_93:

(Start: 25 @54562 has 10 MA's), (Start: 36 @54589 has 3 MA's), (46, 54625), (50, 54637), (53, 54646), (66, 54724), (68, 54727), (73, 54751), (79, 54781), (85, 54817), (96, 54838), (97, 54844), (98, 54847),

(101, 54853), (103, 54865), (110, 54895), (116, 54913), (122, 54934), (129, 54979), (132, 55009), (134, 55018), (136, 55030), (141, 55081), (143, 55111), (145, 55117), (148, 55135), (153, 55162),

Gene: Damien_79 Start: 59427, Stop: 60179, Start Num: 23

Candidate Starts for Damien_79:

(Start: 23 @59427 has 9 MA's), (63, 59598), (78, 59655), (86, 59700), (90, 59721), (92, 59730), (99, 59769), (111, 59811), (117, 59835), (118, 59838), (121, 59859), (123, 59865), (130, 59904), (133, 59931), (151, 60078), (156, 60102),

Gene: DaviePasture_86 Start: 58094, Stop: 58768, Start Num: 44

Candidate Starts for DaviePasture_86:

(1, 57935), (4, 57959), (8, 57989), (15, 58016), (Start: 31 @58061 has 3 MA's), (Start: 43 @58091 has 6 MA's), (Start: 44 @58094 has 31 MA's), (84, 58286), (87, 58313), (102, 58394), (109, 58430), (128, 58520), (134, 58562), (141, 58628), (147, 58670),

Gene: Delton_70 Start: 55255, Stop: 55926, Start Num: 33

Candidate Starts for Delton_70:

(Start: 33 @55255 has 22 MA's), (42, 55276), (Start: 48 @55306 has 1 MA's), (66, 55408), (69, 55414), (71, 55423), (76, 55447), (110, 55582), (112, 55585), (124, 55639), (140, 55756), (155, 55855),

Gene: Demikore_94 Start: 61253, Stop: 61951, Start Num: 31

Candidate Starts for Demikore_94:

(19, 61226), (22, 61238), (28, 61244), (Start: 31 @61253 has 3 MA's), (54, 61331), (69, 61367), (92, 61481), (107, 61544), (108, 61553), (118, 61592), (127, 61640), (142, 61778), (149, 61817), (155, 61856), (163, 61916),

Gene: Djokovic_80 Start: 55696, Stop: 56517, Start Num: 10

Candidate Starts for Djokovic_80:

(3, 55657), (Start: 10 @55696 has 6 MA's), (34, 55768), (Start: 43 @55792 has 6 MA's), (Start: 52 @55834 has 3 MA's), (59, 55888), (69, 55936), (74, 55960), (80, 55984), (83, 55999), (119, 56185),

Gene: DoobyDoo_85 Start: 56890, Stop: 57564, Start Num: 44

Candidate Starts for DoobyDoo_85:

(19, 56830), (26, 56854), (Start: 43 @56887 has 6 MA's), (Start: 44 @56890 has 31 MA's), (Start: 52 @56929 has 3 MA's), (84, 57082), (87, 57109), (102, 57190), (109, 57226), (134, 57358), (136, 57373), (141, 57424),

Gene: DrLupo_91 Start: 60981, Stop: 61727, Start Num: 35

Candidate Starts for DrLupo_91:

(Start: 35 @60981 has 2 MA's), (40, 60996), (41, 60999), (51, 61038), (Start: 52 @61044 has 3 MA's), (61, 61068), (65, 61104), (81, 61170), (85, 61197), (87, 61206), (92, 61233), (93, 61236), (99, 61272), (104, 61290), (113, 61326), (115, 61338), (120, 61368), (125, 61383), (150, 61602), (157, 61656), (160, 61665),

Gene: DumpTruck_88 Start: 58077, Stop: 58757, Start Num: 44

Candidate Starts for DumpTruck_88:

(Start: 44 @58077 has 31 MA's), (60, 58170), (72, 58230), (84, 58269), (100, 58368), (102, 58377), (121, 58461), (134, 58545), (141, 58611),

Gene: Erk16_70 Start: 54972, Stop: 55640, Start Num: 33

Candidate Starts for Erk16_70:

(Start: 33 @54972 has 22 MA's), (42, 54993), (Start: 48 @55023 has 1 MA's), (66, 55125), (69, 55131), (71, 55140), (76, 55164), (80, 55167), (110, 55299), (112, 55302), (124, 55356), (155, 55572),

Gene: Erutan_85 Start: 58028, Stop: 58702, Start Num: 44

Candidate Starts for Erutan_85:

(19, 57968), (26, 57992), (Start: 43 @58025 has 6 MA's), (Start: 44 @58028 has 31 MA's), (Start: 52 @58067 has 3 MA's), (84, 58220), (87, 58247), (102, 58328), (109, 58364), (121, 58412), (128, 58454), (134, 58496), (141, 58562), (147, 58604),

Gene: Fowlmouth_91 Start: 56536, Stop: 57147, Start Num: 36

Candidate Starts for Fowlmouth_91:

(Start: 36 @56536 has 3 MA's), (46, 56572), (59, 56629), (91, 56776), (101, 56803), (103, 56815), (116, 56863), (122, 56884), (129, 56929), (132, 56959), (134, 56968), (136, 56980), (141, 57031), (145, 57067), (148, 57085), (153, 57112),

Gene: Fulcrum_84 Start: 57717, Stop: 58391, Start Num: 44

Candidate Starts for Fulcrum_84:

(19, 57657), (26, 57681), (Start: 44 @57717 has 31 MA's), (Start: 52 @57756 has 3 MA's), (84, 57909), (87, 57936), (102, 58017), (109, 58053), (128, 58143), (134, 58185), (141, 58251),

Gene: GOATification_84 Start: 57717, Stop: 58391, Start Num: 44

Candidate Starts for GOATification_84:

(19, 57657), (26, 57681), (Start: 44 @57717 has 31 MA's), (Start: 52 @57756 has 3 MA's), (84, 57909), (87, 57936), (102, 58017), (109, 58053), (128, 58143), (134, 58185), (141, 58251),

Gene: Genamy16_86 Start: 56519, Stop: 57193, Start Num: 44

Candidate Starts for Genamy16_86:

(37, 56504), (Start: 43 @56516 has 6 MA's), (Start: 44 @56519 has 31 MA's), (Start: 52 @56558 has 3 MA's), (84, 56711), (87, 56738), (102, 56819), (109, 56855), (134, 56987), (136, 57002), (141, 57053),

Gene: Gibbin_87 Start: 58357, Stop: 59031, Start Num: 44

Candidate Starts for Gibbin_87:

(6, 58243), (9, 58258), (12, 58276), (21, 58297), (Start: 43 @58354 has 6 MA's), (Start: 44 @58357 has 31 MA's), (Start: 52 @58396 has 3 MA's), (84, 58549), (87, 58576), (102, 58657), (109, 58693), (134, 58825), (136, 58840), (141, 58891),

Gene: Gimesa_84 Start: 62573, Stop: 63280, Start Num: 25

Candidate Starts for Gimesa_84:

(Start: 25 @62573 has 10 MA's), (45, 62624), (57, 62675), (64, 62744), (68, 62750), (75, 62780), (85, 62840), (105, 62888), (110, 62918), (112, 62921), (122, 62972), (124, 62981), (131, 63035), (139, 63092), (144, 63152), (145, 63155), (147, 63161), (152, 63203), (158, 63245),

Gene: Giuseppe_72 Start: 54784, Stop: 55455, Start Num: 33

Candidate Starts for Giuseppe_72:

(Start: 33 @54784 has 22 MA's), (42, 54805), (Start: 48 @54835 has 1 MA's), (66, 54937), (69, 54943), (71, 54952), (76, 54976), (110, 55111), (112, 55114), (124, 55168), (140, 55285), (155, 55384),

Gene: Gretellyn_85 Start: 58084, Stop: 58758, Start Num: 44

Candidate Starts for Gretellyn_85:

(6, 57970), (9, 57985), (12, 58003), (21, 58024), (Start: 43 @58081 has 6 MA's), (Start: 44 @58084 has 31 MA's), (Start: 52 @58123 has 3 MA's), (84, 58276), (87, 58303), (102, 58384), (109, 58420), (134, 58552), (136, 58567), (141, 58618),

Gene: Gumball_70 Start: 55377, Stop: 55997, Start Num: 48

Candidate Starts for Gumball_70:

(Start: 33 @55326 has 22 MA's), (42, 55347), (Start: 48 @55377 has 1 MA's), (66, 55479), (69, 55485), (71, 55494), (76, 55518), (110, 55653), (112, 55656), (124, 55710), (140, 55827), (155, 55926),

Gene: Hawkeye_82 Start: 56674, Stop: 57330, Start Num: 33

Candidate Starts for Hawkeye_82:

(Start: 33 @56674 has 22 MA's), (38, 56686), (66, 56824), (69, 56830), (76, 56863), (99, 56950), (135, 57136), (141, 57193),

Gene: Helpful_73 Start: 55172, Stop: 55843, Start Num: 33

Candidate Starts for Helpful_73:

(Start: 33 @55172 has 22 MA's), (42, 55193), (Start: 48 @55223 has 1 MA's), (66, 55325), (69, 55331), (71, 55340), (76, 55364), (110, 55499), (112, 55502), (124, 55556), (140, 55673), (155, 55772),

Gene: Indlulamithi_82 Start: 58260, Stop: 58847, Start Num: 39

Candidate Starts for Indlulamithi_82:

(Start: 36 @58254 has 3 MA's), (Start: 39 @58260 has 1 MA's), (56, 58323), (59, 58344), (62, 58368), (68, 58389), (69, 58392), (84, 58452), (94, 58485), (134, 58674), (137, 58701), (139, 58710), (141, 58737), (145, 58773), (146, 58776), (148, 58791), (153, 58806),

Gene: Jalebi_85 Start: 59002, Stop: 59676, Start Num: 44

Candidate Starts for Jalebi_85:

(19, 58942), (26, 58966), (Start: 43 @58999 has 6 MA's), (Start: 44 @59002 has 31 MA's), (Start: 52 @59041 has 3 MA's), (84, 59194), (87, 59221), (102, 59302), (109, 59338), (128, 59428), (134, 59470), (141, 59536),

Gene: Jamemuya19_81 Start: 56124, Stop: 56798, Start Num: 44

Candidate Starts for Jamemuya19_81:

(37, 56109), (Start: 43 @56121 has 6 MA's), (Start: 44 @56124 has 31 MA's), (Start: 52 @56163 has 3 MA's), (84, 56316), (87, 56343), (102, 56424), (109, 56460), (134, 56592), (136, 56607), (141, 56658),

Gene: KandZ_68 Start: 55001, Stop: 55672, Start Num: 33

Candidate Starts for KandZ_68:

(Start: 33 @55001 has 22 MA's), (42, 55022), (Start: 48 @55052 has 1 MA's), (66, 55154), (69, 55160), (71, 55169), (76, 55193), (80, 55196), (110, 55328), (112, 55331), (124, 55385), (140, 55502), (155, 55601),

Gene: Konstantine_82 Start: 59921, Stop: 60673, Start Num: 23

Candidate Starts for Konstantine_82:

(Start: 23 @59921 has 9 MA's), (63, 60092), (78, 60149), (86, 60194), (90, 60215), (92, 60224), (99, 60263), (111, 60305), (117, 60329), (118, 60332), (121, 60353), (123, 60359), (133, 60425), (140, 60473), (151, 60572), (156, 60596),

Gene: Labelle_92 Start: 61441, Stop: 62139, Start Num: 31

Candidate Starts for Labelle_92:

(19, 61414), (22, 61426), (28, 61432), (Start: 31 @61441 has 3 MA's), (54, 61519), (69, 61555), (92, 61669), (107, 61732), (108, 61741), (118, 61780), (127, 61828), (142, 61966), (149, 62005), (155, 62044), (163, 62104),

Gene: Lambo_85 Start: 58114, Stop: 58788, Start Num: 43

Candidate Starts for Lambo_85:

(41, 58111), (Start: 43 @58114 has 6 MA's), (84, 58306), (102, 58414), (109, 58450), (128, 58540), (134, 58582), (136, 58597), (141, 58648), (147, 58690),

Gene: LavAbarElk_85 Start: 57175, Stop: 57849, Start Num: 44

Candidate Starts for LavAbarElk_85:

(19, 57115), (26, 57139), (Start: 43 @57172 has 6 MA's), (Start: 44 @57175 has 31 MA's), (Start: 52 @57214 has 3 MA's), (84, 57367), (87, 57394), (102, 57475), (109, 57511), (128, 57601), (134, 57643), (141, 57709), (147, 57751),

Gene: Leopard_87 Start: 61735, Stop: 62415, Start Num: 33

Candidate Starts for Leopard_87:

(Start: 20 @61696 has 1 MA's), (32, 61732), (Start: 33 @61735 has 22 MA's), (41, 61753), (46, 61777), (85, 61966), (89, 61993), (100, 62044), (119, 62125), (126, 62155), (137, 62251), (140, 62266), (147, 62329), (159, 62398),

Gene: Lila22_86 Start: 58477, Stop: 59151, Start Num: 44

Candidate Starts for Lila22_86:

(19, 58417), (26, 58441), (Start: 43 @58474 has 6 MA's), (Start: 44 @58477 has 31 MA's), (Start: 52 @58516 has 3 MA's), (84, 58669), (87, 58696), (102, 58777), (109, 58813), (128, 58903), (134, 58945), (141, 59011), (147, 59053),

Gene: LilyPad_77 Start: 54664, Stop: 55503, Start Num: 11

Candidate Starts for LilyPad_77:

(Start: 11 @54664 has 1 MA's), (34, 54727), (Start: 43 @54751 has 6 MA's), (Start: 52 @54793 has 3 MA's), (55, 54808), (80, 54943), (82, 54955), (83, 54958), (119, 55144), (144, 55339), (161, 55447), (162, 55453),

Gene: LittleFella_79 Start: 55168, Stop: 56049, Start Num: 18

Candidate Starts for LittleFella_79:

(Start: 18 @55168 has 1 MA's), (24, 55186), (29, 55201), (Start: 43 @55237 has 6 MA's), (Start: 52 @55279 has 3 MA's), (64, 55369), (66, 55372), (80, 55426), (106, 55561), (138, 55759), (153, 55870), (154, 55876), (165, 55951), (166, 55969),

Gene: LuckyLeo_83 Start: 57772, Stop: 58446, Start Num: 43

Candidate Starts for LuckyLeo_83:

(41, 57769), (Start: 43 @57772 has 6 MA's), (64, 57901), (84, 57964), (87, 57991), (102, 58072), (109, 58108), (124, 58168), (128, 58198), (134, 58240), (141, 58306), (147, 58348),

Gene: Madi_79 Start: 55533, Stop: 56354, Start Num: 10

Candidate Starts for Madi_79:

(7, 55518), (Start: 10 @55533 has 6 MA's), (34, 55605), (Start: 43 @55629 has 6 MA's), (Start: 52 @55671 has 3 MA's), (59, 55725), (69, 55773), (74, 55797), (80, 55821), (82, 55833), (83, 55836), (119, 56022), (161, 56325),

Gene: Madruga_91 Start: 61056, Stop: 61754, Start Num: 31

Candidate Starts for Madruga_91:

(14, 61014), (17, 61026), (Start: 20 @61032 has 1 MA's), (22, 61041), (28, 61047), (Start: 31 @61056 has 3 MA's), (54, 61134), (69, 61170), (92, 61284), (107, 61347), (108, 61356), (118, 61395), (127, 61443), (142, 61581), (149, 61620), (155, 61659), (163, 61719),

Gene: Megatron06_80 Start: 60012, Stop: 60764, Start Num: 23

Candidate Starts for Megatron06_80:

(Start: 23 @60012 has 9 MA's), (63, 60183), (78, 60240), (86, 60285), (90, 60306), (92, 60315), (99, 60354), (111, 60396), (117, 60420), (118, 60423), (121, 60444), (123, 60450), (130, 60489), (133, 60516), (140, 60564), (151, 60663), (156, 60687),

Gene: Mima20_84 Start: 57809, Stop: 58483, Start Num: 44

Candidate Starts for Mima20_84:

(37, 57794), (Start: 43 @57806 has 6 MA's), (Start: 44 @57809 has 31 MA's), (Start: 52 @57848 has 3 MA's), (84, 58001), (87, 58028), (102, 58109), (109, 58145), (128, 58235), (134, 58277), (141, 58343),

Gene: MoiGyank_88 Start: 58408, Stop: 59082, Start Num: 44

Candidate Starts for MoiGyank_88:

(Start: 43 @58405 has 6 MA's), (Start: 44 @58408 has 31 MA's), (Start: 52 @58447 has 3 MA's), (84, 58600), (87, 58627), (102, 58708), (109, 58744), (128, 58834), (134, 58876), (141, 58942),

Gene: MontyDev_85 Start: 62366, Stop: 63073, Start Num: 25

Candidate Starts for MontyDev_85:

(Start: 25 @62366 has 10 MA's), (45, 62417), (57, 62468), (64, 62537), (68, 62543), (75, 62573), (85, 62633), (105, 62681), (110, 62711), (112, 62714), (122, 62765), (124, 62774), (131, 62828), (139, 62885), (144, 62945), (145, 62948), (147, 62954), (152, 62996), (158, 63038),

Gene: Mopey_72 Start: 54810, Stop: 55481, Start Num: 33

Candidate Starts for Mopey_72:

(Start: 33 @54810 has 22 MA's), (42, 54831), (Start: 48 @54861 has 1 MA's), (66, 54963), (69, 54969), (71, 54978), (76, 55002), (110, 55137), (112, 55140), (124, 55194), (140, 55311), (155, 55410),

Gene: MrMiyagi_90 Start: 56804, Stop: 57415, Start Num: 36

Candidate Starts for MrMiyagi_90:

(Start: 36 @56804 has 3 MA's), (46, 56840), (59, 56897), (83, 57011), (91, 57044), (101, 57071), (116, 57131), (122, 57152), (129, 57197), (132, 57227), (134, 57236), (136, 57248), (141, 57299), (145, 57335), (148, 57353), (153, 57380),

Gene: Nettle_87 Start: 58687, Stop: 59361, Start Num: 43

Candidate Starts for Nettle_87:

(41, 58684), (Start: 43 @58687 has 6 MA's), (84, 58879), (87, 58906), (102, 58987), (109, 59023), (128, 59113), (134, 59155), (141, 59221), (147, 59263),

Gene: Nilo_86 Start: 62725, Stop: 63432, Start Num: 25

Candidate Starts for Nilo_86:

(Start: 25 @62725 has 10 MA's), (45, 62776), (57, 62827), (64, 62896), (68, 62902), (75, 62932), (85, 62992), (105, 63040), (110, 63070), (112, 63073), (122, 63124), (124, 63133), (131, 63187), (139, 63244), (144, 63304), (145, 63307), (147, 63313), (152, 63355), (158, 63397),

Gene: Nish23_80 Start: 59117, Stop: 59869, Start Num: 23

Candidate Starts for Nish23_80:

(Start: 23 @59117 has 9 MA's), (63, 59288), (78, 59345), (86, 59390), (90, 59411), (92, 59420), (99, 59459), (111, 59501), (117, 59525), (118, 59528), (121, 59549), (123, 59555), (130, 59594), (133, 59621), (151, 59768), (156, 59792),

Gene: NorManre_90 Start: 59321, Stop: 59995, Start Num: 44

Candidate Starts for NorManre_90:

(19, 59261), (26, 59285), (Start: 44 @59321 has 31 MA's), (84, 59513), (102, 59621), (109, 59657), (128, 59747), (134, 59789), (141, 59855), (147, 59897),

Gene: Nova_70 Start: 55349, Stop: 56020, Start Num: 33

Candidate Starts for Nova_70:

(Start: 33 @55349 has 22 MA's), (42, 55370), (Start: 48 @55400 has 1 MA's), (66, 55502), (69, 55508), (71, 55517), (76, 55541), (110, 55676), (112, 55679), (124, 55733), (140, 55850), (155, 55949),

Gene: NovaSharks_85 Start: 56222, Stop: 56896, Start Num: 44

Candidate Starts for NovaSharks_85:

(37, 56207), (Start: 43 @56219 has 6 MA's), (Start: 44 @56222 has 31 MA's), (Start: 52 @56261 has 3 MA's), (84, 56414), (87, 56441), (102, 56522), (109, 56558), (134, 56690), (136, 56705), (141, 56756),

Gene: Oaker_79 Start: 60029, Stop: 60781, Start Num: 23

Candidate Starts for Oaker_79:

(Start: 23 @60029 has 9 MA's), (63, 60200), (78, 60257), (86, 60302), (90, 60323), (92, 60332), (99, 60371), (111, 60413), (117, 60437), (118, 60440), (121, 60461), (123, 60467), (133, 60533), (140, 60581), (156, 60704),

Gene: Onyinye_87 Start: 61230, Stop: 61910, Start Num: 33

Candidate Starts for Onyinye_87:

(Start: 20 @61191 has 1 MA's), (32, 61227), (Start: 33 @61230 has 22 MA's), (41, 61248), (46, 61272), (85, 61461), (89, 61488), (100, 61539), (119, 61620), (126, 61650), (137, 61746), (140, 61761), (147, 61824), (159, 61893),

Gene: OtterstedtS21_86 Start: 58125, Stop: 58799, Start Num: 43

Candidate Starts for OtterstedtS21_86:

(19, 58068), (26, 58092), (41, 58122), (Start: 43 @58125 has 6 MA's), (Start: 52 @58164 has 3 MA's), (84, 58317), (87, 58344), (102, 58425), (109, 58461), (128, 58551), (134, 58593), (136, 58608), (141, 58659), (147, 58701),

Gene: PLOt_70 Start: 54810, Stop: 55481, Start Num: 33

Candidate Starts for PLOt_70:

(Start: 33 @54810 has 22 MA's), (42, 54831), (Start: 48 @54861 has 1 MA's), (66, 54963), (69, 54969), (71, 54978), (76, 55002), (80, 55005), (110, 55137), (112, 55140), (124, 55194), (140, 55311), (155, 55410),

Gene: Papyrus_82 Start: 61384, Stop: 62091, Start Num: 25

Candidate Starts for Papyrus_82:

(Start: 25 @61384 has 10 MA's), (45, 61435), (57, 61486), (64, 61555), (68, 61561), (75, 61591), (85, 61651), (105, 61699), (110, 61729), (112, 61732), (122, 61783), (124, 61792), (131, 61846), (139, 61903), (144, 61963), (145, 61966), (147, 61972), (152, 62014), (158, 62056),

Gene: ParvusTarda_85 Start: 57398, Stop: 58072, Start Num: 44

Candidate Starts for ParvusTarda_85:

(19, 57338), (26, 57362), (Start: 43 @57395 has 6 MA's), (Start: 44 @57398 has 31 MA's), (Start: 52 @57437 has 3 MA's), (84, 57590), (87, 57617), (102, 57698), (109, 57734), (128, 57824), (134, 57866), (136, 57881), (141, 57932), (147, 57974),

Gene: Patience_93 Start: 61969, Stop: 62667, Start Num: 31

Candidate Starts for Patience_93:

(14, 61927), (17, 61939), (Start: 20 @61945 has 1 MA's), (22, 61954), (28, 61960), (Start: 31 @61969 has 3 MA's), (54, 62047), (69, 62083), (92, 62197), (107, 62260), (108, 62269), (118, 62308), (127, 62356), (142, 62494), (149, 62533), (155, 62572), (163, 62632),

Gene: Patos_90 Start: 59320, Stop: 59994, Start Num: 44

Candidate Starts for Patos_90:

(19, 59260), (26, 59284), (Start: 44 @59320 has 31 MA's), (84, 59512), (102, 59620), (109, 59656), (128, 59746), (134, 59788), (141, 59854), (147, 59896),

Gene: Penelope2018_70 Start: 54844, Stop: 55515, Start Num: 33

Candidate Starts for Penelope2018_70:

(Start: 33 @54844 has 22 MA's), (42, 54865), (Start: 48 @54895 has 1 MA's), (66, 54997), (69, 55003), (71, 55012), (76, 55036), (110, 55171), (112, 55174), (124, 55228), (140, 55345), (155, 55444),

Gene: Phalaborwa_73 Start: 55437, Stop: 56108, Start Num: 33

Candidate Starts for Phalaborwa_73:

(Start: 33 @55437 has 22 MA's), (42, 55458), (Start: 48 @55488 has 1 MA's), (66, 55590), (69, 55596), (76, 55629), (80, 55632), (110, 55764), (112, 55767), (114, 55779), (124, 55821), (128, 55851), (155, 56037),

Gene: Phreeze_78 Start: 58999, Stop: 59703, Start Num: 23

Candidate Starts for Phreeze_78:

(Start: 23 @58999 has 9 MA's), (67, 59131), (70, 59137), (78, 59179), (86, 59224), (90, 59245), (92, 59254), (99, 59293), (111, 59335), (117, 59359), (118, 59362), (121, 59383), (123, 59389), (133, 59455), (156, 59626),

Gene: Prager_71 Start: 54904, Stop: 55575, Start Num: 33

Candidate Starts for Prager_71:

(Start: 33 @54904 has 22 MA's), (42, 54925), (Start: 48 @54955 has 1 MA's), (66, 55057), (69, 55063), (71, 55072), (76, 55096), (110, 55231), (112, 55234), (124, 55288), (140, 55405), (155, 55504),

Gene: Predator_79 Start: 59366, Stop: 60121, Start Num: 27

Candidate Starts for Predator_79:

(2, 59273), (Start: 27 @59366 has 1 MA's), (40, 59396), (49, 59435), (63, 59543), (88, 59660), (92, 59675), (95, 59684), (99, 59714), (118, 59783), (133, 59873), (136, 59891), (164, 60092),

Gene: Puissant_75 Start: 59222, Stop: 59914, Start Num: 30

Candidate Starts for Puissant_75:

(29, 59219), (Start: 30 @59222 has 1 MA's), (Start: 52 @59285 has 3 MA's), (67, 59345), (70, 59351), (77, 59384), (81, 59405), (86, 59438), (90, 59459), (92, 59468), (99, 59507), (111, 59549), (115, 59567), (118, 59576), (121, 59597), (123, 59603), (130, 59642), (133, 59669), (136, 59687), (156, 59837),

Gene: Pywacket_82 Start: 58303, Stop: 58938, Start Num: 52

Candidate Starts for Pywacket_82:

(19, 58204), (26, 58228), (Start: 43 @58261 has 6 MA's), (Start: 44 @58264 has 31 MA's), (47, 58288), (Start: 52 @58303 has 3 MA's), (84, 58456), (87, 58483), (102, 58564), (109, 58600), (121, 58648), (128, 58690), (134, 58732), (136, 58747), (141, 58798), (147, 58840),

Gene: Ranch_89 Start: 57797, Stop: 58471, Start Num: 43

Candidate Starts for Ranch_89:

(41, 57794), (Start: 43 @57797 has 6 MA's), (58, 57881), (84, 57989), (102, 58097), (109, 58133), (128, 58223), (134, 58265), (141, 58331),

Gene: RazorC_83 Start: 56264, Stop: 56938, Start Num: 44

Candidate Starts for RazorC_83:

(37, 56249), (Start: 43 @56261 has 6 MA's), (Start: 44 @56264 has 31 MA's), (Start: 52 @56303 has 3 MA's), (84, 56456), (87, 56483), (102, 56564), (109, 56600), (134, 56732), (136, 56747), (141, 56798),

Gene: Riduram_82 Start: 55839, Stop: 56513, Start Num: 44

Candidate Starts for Riduram_82:

(37, 55824), (Start: 43 @55836 has 6 MA's), (Start: 44 @55839 has 31 MA's), (Start: 52 @55878 has 3 MA's), (84, 56031), (87, 56058), (102, 56139), (109, 56175), (134, 56307), (136, 56322), (141, 56373),

Gene: Riparian_85 Start: 62171, Stop: 62878, Start Num: 25

Candidate Starts for Riparian_85:

(Start: 25 @62171 has 10 MA's), (45, 62222), (57, 62273), (64, 62342), (68, 62348), (75, 62378), (85, 62438), (105, 62486), (110, 62516), (112, 62519), (122, 62570), (124, 62579), (131, 62633), (139, 62690), (144, 62750), (145, 62753), (147, 62759), (152, 62801), (158, 62843),

Gene: Rope_83 Start: 62330, Stop: 63037, Start Num: 25

Candidate Starts for Rope_83:

(Start: 25 @62330 has 10 MA's), (45, 62381), (57, 62432), (64, 62501), (68, 62507), (69, 62510), (75, 62537), (85, 62597), (105, 62645), (110, 62675), (112, 62678), (122, 62729), (124, 62738), (131, 62792), (139, 62849), (144, 62909), (145, 62912), (147, 62918), (152, 62960), (158, 63002),

Gene: Rota_84 Start: 58231, Stop: 58905, Start Num: 44

Candidate Starts for Rota_84:

(6, 58117), (9, 58132), (12, 58150), (21, 58171), (Start: 43 @58228 has 6 MA's), (Start: 44 @58231 has 31 MA's), (Start: 52 @58270 has 3 MA's), (84, 58423), (102, 58531), (109, 58567), (121, 58615), (128, 58657), (134, 58699), (141, 58765), (147, 58807),

Gene: Rukungu_86 Start: 58585, Stop: 59259, Start Num: 44

Candidate Starts for Rukungu_86:

(37, 58570), (Start: 43 @58582 has 6 MA's), (Start: 44 @58585 has 31 MA's), (Start: 52 @58624 has 3 MA's), (84, 58777), (87, 58804), (102, 58885), (109, 58921), (128, 59011), (134, 59053), (141, 59119), (147, 59161),

Gene: Rumi_84 Start: 55807, Stop: 56481, Start Num: 44

Candidate Starts for Rumi_84:

(37, 55792), (Start: 43 @55804 has 6 MA's), (Start: 44 @55807 has 31 MA's), (Start: 52 @55846 has 3 MA's), (84, 55999), (87, 56026), (102, 56107), (109, 56143), (134, 56275), (136, 56290), (141, 56341),

Gene: Sadboi_85 Start: 58124, Stop: 58759, Start Num: 52

Candidate Starts for Sadboi_85:

(6, 57971), (9, 57986), (12, 58004), (21, 58025), (Start: 43 @58082 has 6 MA's), (Start: 44 @58085 has 31 MA's), (Start: 52 @58124 has 3 MA's), (84, 58277), (102, 58385), (109, 58421), (128, 58511), (134, 58553), (141, 58619), (147, 58661),

Gene: Sampudon_87 Start: 59002, Stop: 59676, Start Num: 44

Candidate Starts for Sampudon_87:

(19, 58942), (26, 58966), (Start: 43 @58999 has 6 MA's), (Start: 44 @59002 has 31 MA's), (Start: 52 @59041 has 3 MA's), (84, 59194), (87, 59221), (102, 59302), (109, 59338), (128, 59428), (134, 59470), (141, 59536),

Gene: Send513_83 Start: 62707, Stop: 63414, Start Num: 25

Candidate Starts for Send513_83:

(Start: 25 @62707 has 10 MA's), (45, 62758), (57, 62809), (64, 62878), (68, 62884), (69, 62887), (75, 62914), (85, 62974), (105, 63022), (110, 63052), (112, 63055), (122, 63106), (124, 63115), (131, 63169), (139, 63226), (144, 63286), (145, 63289), (147, 63295), (152, 63337), (158, 63379),

Gene: Sienna_80 Start: 55774, Stop: 56595, Start Num: 10

Candidate Starts for Sienna_80:

(7, 55759), (Start: 10 @55774 has 6 MA's), (34, 55846), (Start: 43 @55870 has 6 MA's), (Start: 52 @55912 has 3 MA's), (59, 55966), (69, 56014), (74, 56038), (80, 56062), (83, 56077), (119, 56263),

Gene: SirHarley_72 Start: 55309, Stop: 55980, Start Num: 33

Candidate Starts for SirHarley_72:

(Start: 33 @55309 has 22 MA's), (42, 55330), (Start: 48 @55360 has 1 MA's), (66, 55462), (69, 55468), (71, 55477), (76, 55501), (110, 55636), (112, 55639), (124, 55693), (140, 55810), (155, 55909),

Gene: Stormer_84 Start: 55949, Stop: 56623, Start Num: 44

Candidate Starts for Stormer_84:

(13, 55877), (16, 55886), (19, 55889), (26, 55913), (Start: 44 @55949 has 31 MA's), (84, 56141), (87, 56168), (102, 56249), (109, 56285), (128, 56375), (134, 56417), (136, 56432), (141, 56483),

Gene: SuperSonics_96 Start: 61015, Stop: 61722, Start Num: 28

Candidate Starts for SuperSonics_96:

(14, 60982), (17, 60994), (Start: 20 @61000 has 1 MA's), (22, 61009), (28, 61015), (Start: 31 @61024 has 3 MA's), (54, 61102), (69, 61138), (92, 61252), (107, 61315), (108, 61324), (118, 61363), (127, 61411), (142, 61549), (149, 61588), (155, 61627), (163, 61687),

Gene: SuperheroCarly_70 Start: 54992, Stop: 55663, Start Num: 33

Candidate Starts for SuperheroCarly_70:

(Start: 33 @54992 has 22 MA's), (42, 55013), (Start: 48 @55043 has 1 MA's), (66, 55145), (69, 55151), (71, 55160), (76, 55184), (110, 55319), (112, 55322), (124, 55376), (140, 55493), (155, 55592),

Gene: Suzy_77 Start: 55845, Stop: 56666, Start Num: 5

Candidate Starts for Suzy_77:

(Start: 5 @55845 has 1 MA's), (34, 55917), (Start: 43 @55941 has 6 MA's), (Start: 52 @55983 has 3 MA's), (59, 56037), (69, 56085), (74, 56109), (80, 56133), (83, 56148), (119, 56334),

Gene: Terapin_81 Start: 55698, Stop: 56519, Start Num: 10

Candidate Starts for Terapin_81:

(3, 55659), (Start: 10 @55698 has 6 MA's), (34, 55770), (Start: 43 @55794 has 6 MA's), (Start: 52 @55836 has 3 MA's), (59, 55890), (69, 55938), (74, 55962), (80, 55986), (83, 56001), (119, 56187),

Gene: Thoth_70 Start: 54898, Stop: 55569, Start Num: 33

Candidate Starts for Thoth_70:

(Start: 33 @54898 has 22 MA's), (42, 54919), (Start: 48 @54949 has 1 MA's), (66, 55051), (69, 55057), (71, 55066), (76, 55090), (110, 55225), (112, 55228), (124, 55282), (140, 55399), (155, 55498),

Gene: Thumb_80 Start: 59431, Stop: 60135, Start Num: 23

Candidate Starts for Thumb_80:

(Start: 23 @59431 has 9 MA's), (67, 59563), (70, 59569), (78, 59611), (86, 59656), (90, 59677), (92, 59686), (99, 59725), (111, 59767), (117, 59791), (118, 59794), (121, 59815), (123, 59821), (133, 59887), (156, 60058), (164, 60106),

Gene: Tillicus_79 Start: 57502, Stop: 58176, Start Num: 44

Candidate Starts for Tillicus_79:

(6, 57388), (9, 57403), (12, 57421), (21, 57442), (Start: 43 @57499 has 6 MA's), (Start: 44 @57502 has 31 MA's), (84, 57694), (87, 57721), (102, 57802), (109, 57838), (124, 57898), (128, 57928), (134, 57970), (141, 58036), (147, 58078),

Gene: Visconti_71 Start: 54874, Stop: 55545, Start Num: 33

Candidate Starts for Visconti_71:

(Start: 33 @54874 has 22 MA's), (42, 54895), (Start: 48 @54925 has 1 MA's), (66, 55027), (69, 55033), (71, 55042), (76, 55066), (110, 55201), (112, 55204), (124, 55258), (140, 55375), (155, 55474),

Gene: WaldoWhy_72 Start: 54894, Stop: 55562, Start Num: 33

Candidate Starts for WaldoWhy_72:

(Start: 33 @54894 has 22 MA's), (42, 54915), (Start: 48 @54945 has 1 MA's), (66, 55047), (69, 55053), (71, 55062), (76, 55086), (80, 55089), (110, 55221), (112, 55224), (124, 55278), (155, 55494),

Gene: Weiss13_83 Start: 62408, Stop: 63115, Start Num: 25

Candidate Starts for Weiss13_83:

(Start: 25 @62408 has 10 MA's), (45, 62459), (57, 62510), (64, 62579), (68, 62585), (75, 62615), (85, 62675), (105, 62723), (110, 62753), (112, 62756), (122, 62807), (124, 62816), (131, 62870), (139, 62927), (144, 62987), (145, 62990), (147, 62996), (152, 63038), (158, 63080),

Gene: Wojtek_78 Start: 58104, Stop: 58778, Start Num: 44

Candidate Starts for Wojtek_78:

(19, 58044), (26, 58068), (Start: 44 @58104 has 31 MA's), (84, 58296), (102, 58404), (109, 58440), (128, 58530), (134, 58572), (136, 58587), (141, 58638), (147, 58680),

Gene: Xenia2_88 Start: 58445, Stop: 59125, Start Num: 44

Candidate Starts for Xenia2_88:

(Start: 44 @58445 has 31 MA's), (60, 58538), (72, 58598), (84, 58637), (100, 58736), (102, 58745), (121, 58829), (134, 58913), (141, 58979),

Gene: Yelo_82 Start: 62763, Stop: 63470, Start Num: 25

Candidate Starts for Yelo_82:

(Start: 25 @62763 has 10 MA's), (45, 62814), (57, 62865), (64, 62934), (68, 62940), (75, 62970), (85, 63030), (105, 63078), (110, 63108), (112, 63111), (122, 63162), (124, 63171), (131, 63225), (139, 63282), (144, 63342), (145, 63345), (147, 63351), (152, 63393), (158, 63435),

Gene: Yikes_86 Start: 58672, Stop: 59307, Start Num: 52

Candidate Starts for Yikes_86:

(6, 58519), (9, 58534), (12, 58552), (21, 58573), (Start: 43 @58630 has 6 MA's), (Start: 44 @58633 has 31 MA's), (Start: 52 @58672 has 3 MA's), (84, 58825), (87, 58852), (102, 58933), (109, 58969), (134, 59101), (136, 59116), (141, 59167),

Gene: Zany_84 Start: 58887, Stop: 59561, Start Num: 43

Candidate Starts for Zany_84:

(41, 58884), (Start: 43 @58887 has 6 MA's), (84, 59079), (87, 59106), (102, 59187), (109, 59223), (134, 59355), (136, 59370), (141, 59421), (147, 59463),

Gene: Zenon_85 Start: 62734, Stop: 63441, Start Num: 25

Candidate Starts for Zenon_85:

(Start: 25 @62734 has 10 MA's), (45, 62785), (57, 62836), (64, 62905), (68, 62911), (75, 62941), (85, 63001), (105, 63049), (110, 63079), (112, 63082), (122, 63133), (124, 63142), (131, 63196), (139, 63253), (144, 63313), (145, 63316), (147, 63322), (152, 63364), (158, 63406),