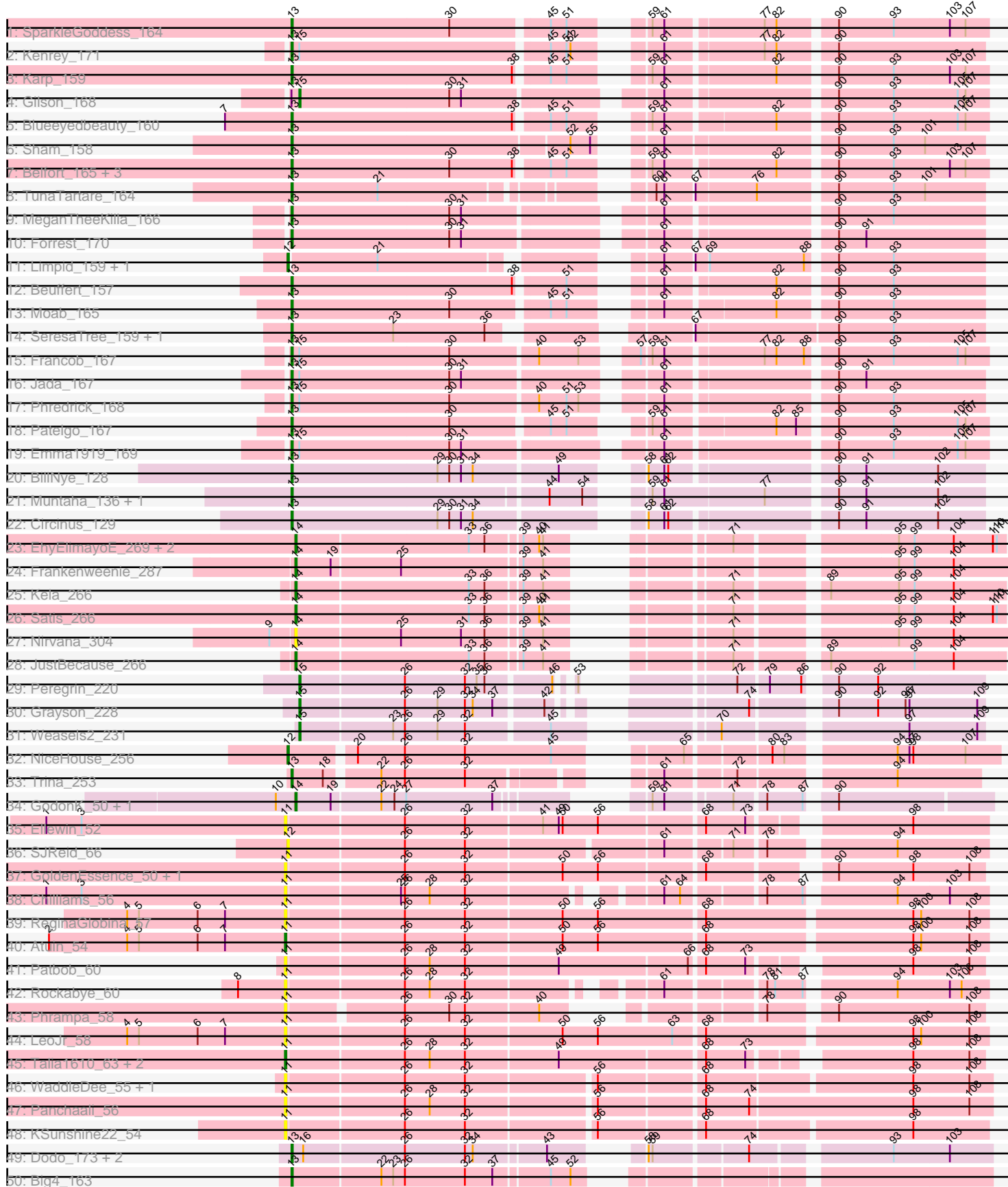
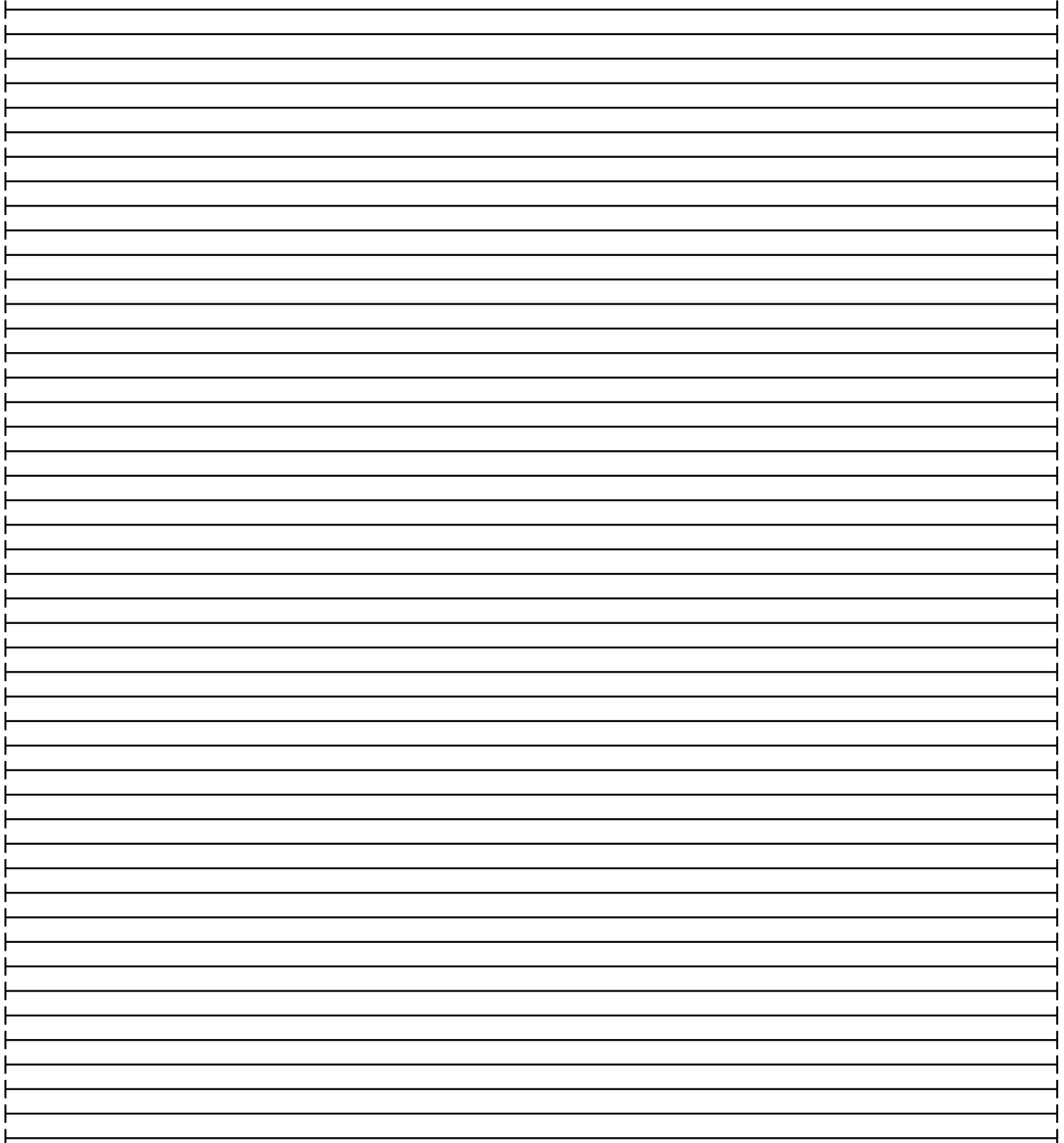
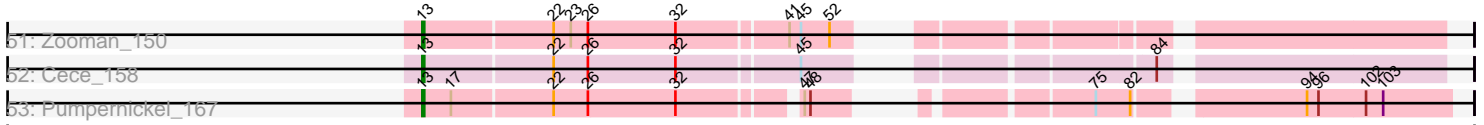


Pham 212589



Pham 212589



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 212589 Report

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

Pham number 212589 has 68 members, 18 are drafts.

Phages represented in each track:

- Track 1 : SparkleGoddess_164
- Track 2 : Kenrey_171
- Track 3 : Karp_159
- Track 4 : Gilson_168
- Track 5 : Blueeyedbeauty_160
- Track 6 : Sham_158
- Track 7 : Belfort_165, Comrade_162, Westy_166, Stigma_163
- Track 8 : TunaTartare_164
- Track 9 : MeganTheeKilla_166
- Track 10 : Forrest_170
- Track 11 : Limpid_159, Annadreamy_152
- Track 12 : Beuffert_157
- Track 13 : Moab_165
- Track 14 : SeresaTree_159, Faust_157
- Track 15 : Francob_167
- Track 16 : Jada_167
- Track 17 : Phredrick_168
- Track 18 : Patelgo_167
- Track 19 : Emma1919_169
- Track 20 : BillNye_128
- Track 21 : Muntaha_136, Wakanda_135
- Track 22 : Circinus_129
- Track 23 : EhyElimayoE_269, Kradal_266, Quantum_264
- Track 24 : Frankenweenie_287
- Track 25 : Kela_266
- Track 26 : Satis_266
- Track 27 : Nirvana_304
- Track 28 : JustBecause_266
- Track 29 : Peregrin_220
- Track 30 : Grayson_228
- Track 31 : Weasels2_231
- Track 32 : NiceHouse_256
- Track 33 : Trina_253
- Track 34 : GodonK_50, Phendrix_50
- Track 35 : Ellewin_52
- Track 36 : SJReid_66
- Track 37 : GoldenEssence_50, Bloom_67

- Track 38 : Chilliams_56
- Track 39 : ReginaGlobina_57
- Track 40 : Atuin_54
- Track 41 : Patbob_60
- Track 42 : Rockabye_60
- Track 43 : Phrampa_58
- Track 44 : LeoJr_58
- Track 45 : Talia1610_63, Mimi_63, Racecar_64
- Track 46 : WaddleDee_55, DunneganBoMo_54
- Track 47 : Panchaali_56
- Track 48 : KSunshine22_54
- Track 49 : Dodo_173, A3Wally_171, PauloDiaboli_171
- Track 50 : Big4_163
- Track 51 : Zooman_150
- Track 52 : Cece_158
- Track 53 : Pumpernickel_167

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

The start number called the most often in the published annotations is 13, it was called in 30 of the 50 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A3Wally_171, Belfort_165, Beuffert_157, Big4_163, BillNye_128, Blueeyedbeauty_160, Cece_158, Circinus_129, Comrade_162, Dodo_173, Emma1919_169, Faust_157, Forrest_170, Francob_167, Jada_167, Karp_159, Kenrey_171, MeganTheeKilla_166, Moab_165, Muntaha_136, Patelgo_167, PauloDiaboli_171, Phredrick_168, Pumpernickel_167, SeresaTree_159, Sham_158, SparkleGoddess_164, Stigma_163, Trina_253, TunaTartare_164, Wakanda_135, Westy_166, Zooman_150,

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

- Gilson_168,

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

- Annadreamy_152, Atuin_54, Bloom_67, Chilliams_56, DunneganBoMo_54, EhyElimayoE_269, Ellewin_52, Frankenweenie_287, GodonK_50, GoldenEssence_50, Grayson_228, JustBecause_266, KSunshine22_54, Kela_266, Kradal_266, LeoJr_58, Limpid_159, Mimi_63, NiceHouse_256, Nirvana_304, Panchaali_56, Patbob_60, Peregrin_220, Phendrix_50, Phrampa_58, Quantum_264, Racecar_64, ReginaGlobina_57, Rockabye_60, SJReid_66, Satis_266, Talia1610_63, WaddleDee_55, Weasels2_231,

Summary by start number:

Start 11:

- Found in 17 of 68 (25.0%) of genes in pham
- Manual Annotations of this start: 4 of 50
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Atuin_54 (FC), Bloom_67 (FC), Chilliamps_56 (FC), DunneganBoMo_54 (FC), Ellewin_52 (FC), GoldenEssence_50 (FC), KSunshine22_54 (FC), LeoJr_58 (FC), Mimi_63 (FC), Panchaali_56 (FC), Patbob_60 (FC), Phrampa_58 (FC), Racecar_64 (FC), ReginaGlobina_57 (FC), Rockabye_60 (FC), Talia1610_63 (FC), WaddleDee_55 (FC),

Start 12:

- Found in 4 of 68 (5.9%) of genes in pham
- Manual Annotations of this start: 3 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy_152 (BK1), Limpid_159 (BK1), NiceHouse_256 (CE), SJReid_66 (FC),

Start 13:

- Found in 34 of 68 (50.0%) of genes in pham
- Manual Annotations of this start: 30 of 50
- Called 97.1% of time when present
- Phage (with cluster) where this start called: A3Wally_171 (GD1), Belfort_165 (BK1), Beuffert_157 (BK1), Big4_163 (GD2), BillNye_128 (BK2), Blueeyedbeauty_160 (BK1), Cece_158 (GD3), Circinus_129 (BK2), Comrade_162 (BK1), Dodo_173 (GD1), Emma1919_169 (BK1), Faust_157 (BK1), Forrest_170 (BK1), Francob_167 (BK1), Jada_167 (BK1), Karp_159 (BK1), Kenrey_171 (BK1), MeganTheeKilla_166 (BK1), Moab_165 (BK1), Muntaha_136 (BK2), Patelgo_167 (BK1), PauloDiaboli_171 (GD1), Phredrick_168 (BK1), Pumpernickel_167 (GD4), SeresaTree_159 (BK1), Sham_158 (BK1), SparkleGoddess_164 (BK1), Stigma_163 (BK1), Trina_253 (CE), TunaTartare_164 (BK1), Wakanda_135 (BK2), Westy_166 (BK1), Zooman_150 (GD2),

Start 14:

- Found in 10 of 68 (14.7%) of genes in pham
- Manual Annotations of this start: 9 of 50
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EhyElimayoE_269 (BM), Frankenweenie_287 (BM), GodonK_50 (DK), JustBecause_266 (BM), Kela_266 (BM), Kradal_266 (BM), Nirvana_304 (BM), Phendrix_50 (DK), Quantum_264 (BM), Satis_266 (BM),

Start 15:

- Found in 9 of 68 (13.2%) of genes in pham
- Manual Annotations of this start: 4 of 50
- Called 44.4% of time when present
- Phage (with cluster) where this start called: Gilson_168 (BK1), Grayson_228 (CB), Peregrin_220 (CB), Weasels2_231 (CB),

Summary by clusters:

There are 11 clusters represented in this pham: GD1, GD2, GD3, GD4, DK, CB, CE, FC, BK1, BK2, BM,

Info for manual annotations of cluster BK1:

- Start number 12 was manually annotated 2 times for cluster BK1.
- Start number 13 was manually annotated 19 times for cluster BK1.
- Start number 15 was manually annotated 1 time for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 13 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster BM:

- Start number 14 was manually annotated 7 times for cluster BM.

Info for manual annotations of cluster CB:

- Start number 15 was manually annotated 3 times for cluster CB.

Info for manual annotations of cluster CE:

- Start number 12 was manually annotated 1 time for cluster CE.
- Start number 13 was manually annotated 1 time for cluster CE.

Info for manual annotations of cluster DK:

- Start number 14 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster FC:

- Start number 11 was manually annotated 4 times for cluster FC.

Info for manual annotations of cluster GD1:

- Start number 13 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 13 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 13 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 13 was manually annotated 1 time for cluster GD4.

Gene Information:

Gene: A3Wally_171 Start: 96202, Stop: 96663, Start Num: 13

Candidate Starts for A3Wally_171:

(Start: 13 @96202 has 30 MA's), (16, 96211), (26, 96286), (32, 96331), (34, 96337), (43, 96388), (58, 96427), (59, 96430), (74, 96496), (93, 96589), (103, 96631),

Gene: Annadreamy_152 Start: 82558, Stop: 83025, Start Num: 12

Candidate Starts for Annadreamy_152:

(Start: 12 @82558 has 3 MA's), (21, 82624), (61, 82795), (67, 82816), (69, 82825), (88, 82897), (90, 82915), (93, 82957),

Gene: Atuin_54 Start: 22728, Stop: 23243, Start Num: 11

Candidate Starts for Atuin_54:

(2, 22548), (4, 22608), (5, 22617), (6, 22662), (7, 22683), (Start: 11 @22728 has 4 MA's), (26, 22815), (32, 22860), (50, 22932), (56, 22959), (68, 23037), (98, 23187), (100, 23193), (108, 23229),

Gene: Belfort_165 Start: 88488, Stop: 88964, Start Num: 13

Candidate Starts for Belfort_165:

(Start: 13 @88488 has 30 MA's), (30, 88608), (38, 88656), (45, 88677), (51, 88689), (59, 88725), (61, 88734), (82, 88812), (90, 88851), (93, 88893), (103, 88935), (107, 88947),

Gene: Beuffert_157 Start: 86417, Stop: 86890, Start Num: 13

Candidate Starts for Beuffert_157:

(Start: 13 @86417 has 30 MA's), (38, 86585), (51, 86618), (61, 86663), (82, 86741), (90, 86780), (93, 86822),

Gene: Big4_163 Start: 93329, Stop: 93793, Start Num: 13

Candidate Starts for Big4_163:

(Start: 13 @93329 has 30 MA's), (22, 93395), (23, 93404), (26, 93413), (32, 93458), (37, 93479), (45, 93518), (52, 93533),

Gene: BillNye_128 Start: 77977, Stop: 78453, Start Num: 13

Candidate Starts for BillNye_128:

(Start: 13 @77977 has 30 MA's), (29, 78088), (30, 78097), (31, 78106), (34, 78115), (49, 78175), (58, 78214), (61, 78226), (62, 78229), (90, 78343), (91, 78364), (102, 78418),

Gene: Bloom_67 Start: 26741, Stop: 27235, Start Num: 11

Candidate Starts for Bloom_67:

(Start: 11 @26741 has 4 MA's), (26, 26828), (32, 26873), (50, 26945), (56, 26972), (68, 27047), (90, 27125), (98, 27182), (108, 27224),

Gene: Blueeyedbeauty_160 Start: 86300, Stop: 86776, Start Num: 13

Candidate Starts for Blueeyedbeauty_160:

(7, 86249), (Start: 13 @86300 has 30 MA's), (38, 86468), (45, 86489), (51, 86501), (59, 86537), (61, 86546), (82, 86624), (90, 86663), (93, 86705), (105, 86753), (107, 86759),

Gene: Cece_158 Start: 98749, Stop: 99213, Start Num: 13

Candidate Starts for Cece_158:

(Start: 13 @98749 has 30 MA's), (22, 98815), (26, 98833), (32, 98878), (45, 98938), (84, 99076),

Gene: Chilliams_56 Start: 24656, Stop: 25129, Start Num: 11

Candidate Starts for Chilliams_56:

(1, 24473), (3, 24500), (Start: 11 @24656 has 4 MA's), (25, 24740), (26, 24743), (28, 24761), (32, 24788), (61, 24908), (64, 24920), (78, 24974), (87, 25001), (94, 25061), (103, 25100),

Gene: Circinus_129 Start: 77945, Stop: 78421, Start Num: 13

Candidate Starts for Circinus_129:

(Start: 13 @77945 has 30 MA's), (29, 78056), (30, 78065), (31, 78074), (34, 78083), (58, 78182), (61, 78194), (62, 78197), (90, 78311), (91, 78332), (102, 78386),

Gene: Comrade_162 Start: 88690, Stop: 89166, Start Num: 13

Candidate Starts for Comrade_162:

(Start: 13 @88690 has 30 MA's), (30, 88810), (38, 88858), (45, 88879), (51, 88891), (59, 88927), (61, 88936), (82, 89014), (90, 89053), (93, 89095), (103, 89137), (107, 89149),

Gene: Dodo_173 Start: 95808, Stop: 96269, Start Num: 13

Candidate Starts for Dodo_173:

(Start: 13 @95808 has 30 MA's), (16, 95817), (26, 95892), (32, 95937), (34, 95943), (43, 95994), (58, 96033), (59, 96036), (74, 96102), (93, 96195), (103, 96237),

Gene: DunneganBoMo_54 Start: 20816, Stop: 21325, Start Num: 11

Candidate Starts for DunneganBoMo_54:

(Start: 11 @20816 has 4 MA's), (26, 20903), (32, 20948), (56, 21041), (68, 21116), (98, 21266), (108, 21308),

Gene: EhyElimayoE_269 Start: 153102, Stop: 152647, Start Num: 14

Candidate Starts for EhyElimayoE_269:

(Start: 14 @153102 has 9 MA's), (33, 152973), (36, 152961), (39, 152937), (40, 152925), (41, 152922), (71, 152835), (95, 152727), (99, 152715), (104, 152685), (110, 152655), (111, 152652),

Gene: Ellewin_52 Start: 20408, Stop: 20902, Start Num: 11

Candidate Starts for Ellewin_52:

(1, 20225), (3, 20252), (Start: 11 @20408 has 4 MA's), (26, 20495), (32, 20540), (41, 20597), (49, 20609), (50, 20612), (56, 20639), (68, 20714), (73, 20744), (98, 20846),

Gene: Emma1919_169 Start: 87379, Stop: 87867, Start Num: 13

Candidate Starts for Emma1919_169:

(Start: 13 @87379 has 30 MA's), (Start: 15 @87385 has 4 MA's), (30, 87499), (31, 87508), (61, 87637), (90, 87754), (93, 87796), (105, 87844), (107, 87850),

Gene: Faust_157 Start: 87675, Stop: 88151, Start Num: 13

Candidate Starts for Faust_157:

(Start: 13 @87675 has 30 MA's), (23, 87753), (36, 87822), (67, 87936), (90, 88041), (93, 88083),

Gene: Forrest_170 Start: 88362, Stop: 88847, Start Num: 13

Candidate Starts for Forrest_170:

(Start: 13 @88362 has 30 MA's), (30, 88482), (31, 88491), (61, 88620), (90, 88737), (91, 88758),

Gene: Francob_167 Start: 87884, Stop: 88372, Start Num: 13

Candidate Starts for Francob_167:

(Start: 13 @87884 has 30 MA's), (Start: 15 @87890 has 4 MA's), (30, 88004), (40, 88067), (53, 88097), (57, 88127), (59, 88133), (61, 88142), (77, 88211), (82, 88220), (88, 88241), (90, 88259), (93, 88301), (105, 88349), (107, 88355),

Gene: Frankenweenie_287 Start: 164243, Stop: 163782, Start Num: 14

Candidate Starts for Frankenweenie_287:

(Start: 14 @164243 has 9 MA's), (19, 164216), (25, 164165), (39, 164078), (41, 164063), (95, 163868), (99, 163856), (104, 163826),

Gene: Gilson_168 Start: 87347, Stop: 87829, Start Num: 15

Candidate Starts for Gilson_168:

(Start: 13 @87341 has 30 MA's), (Start: 15 @87347 has 4 MA's), (30, 87461), (31, 87470), (61, 87599), (90, 87716), (93, 87758), (105, 87806), (107, 87812),

Gene: GodonK_50 Start: 16803, Stop: 17243, Start Num: 14

Candidate Starts for GodonK_50:

(10, 16788), (Start: 14 @16803 has 9 MA's), (19, 16830), (22, 16866), (24, 16875), (27, 16884), (37, 16950), (59, 17013), (61, 17022), (71, 17067), (78, 17088), (87, 17115), (90, 17130),

Gene: GoldenEssence_50 Start: 19822, Stop: 20316, Start Num: 11

Candidate Starts for GoldenEssence_50:

(Start: 11 @19822 has 4 MA's), (26, 19909), (32, 19954), (50, 20026), (56, 20053), (68, 20128), (90, 20206), (98, 20263), (108, 20305),

Gene: Grayson_228 Start: 111586, Stop: 112026, Start Num: 15

Candidate Starts for Grayson_228:

(Start: 15 @111586 has 4 MA's), (26, 111664), (29, 111688), (32, 111709), (34, 111715), (37, 111730), (42, 111763), (74, 111865), (90, 111916), (92, 111946), (96, 111967), (97, 111970), (109, 112021),

Gene: Jada_167 Start: 87058, Stop: 87543, Start Num: 13

Candidate Starts for Jada_167:

(Start: 13 @87058 has 30 MA's), (Start: 15 @87064 has 4 MA's), (30, 87178), (31, 87187), (61, 87316), (90, 87433), (91, 87454),

Gene: JustBecause_266 Start: 149782, Stop: 149327, Start Num: 14

Candidate Starts for JustBecause_266:

(Start: 14 @149782 has 9 MA's), (33, 149653), (36, 149641), (39, 149617), (41, 149602), (71, 149515), (89, 149458), (99, 149395), (104, 149365),

Gene: KSunshine22_54 Start: 21439, Stop: 21945, Start Num: 11

Candidate Starts for KSunshine22_54:

(Start: 11 @21439 has 4 MA's), (26, 21526), (32, 21571), (56, 21664), (68, 21739), (98, 21889),

Gene: Karp_159 Start: 87914, Stop: 88390, Start Num: 13

Candidate Starts for Karp_159:

(Start: 13 @87914 has 30 MA's), (38, 88082), (45, 88103), (51, 88115), (59, 88151), (61, 88160), (82, 88238), (90, 88277), (93, 88319), (103, 88361), (107, 88373),

Gene: Kela_266 Start: 151386, Stop: 150931, Start Num: 14

Candidate Starts for Kela_266:

(Start: 14 @151386 has 9 MA's), (33, 151257), (36, 151245), (39, 151221), (41, 151206), (71, 151119), (89, 151062), (95, 151011), (99, 150999), (104, 150969),

Gene: Kenrey_171 Start: 88511, Stop: 88984, Start Num: 13

Candidate Starts for Kenrey_171:

(Start: 13 @88511 has 30 MA's), (Start: 15 @88517 has 4 MA's), (45, 88700), (51, 88712), (52, 88715), (61, 88757), (77, 88826), (82, 88835), (90, 88874),

Gene: Kradal_266 Start: 153099, Stop: 152644, Start Num: 14

Candidate Starts for Kradal_266:

(Start: 14 @153099 has 9 MA's), (33, 152970), (36, 152958), (39, 152934), (40, 152922), (41, 152919), (71, 152832), (95, 152724), (99, 152712), (104, 152682), (110, 152652), (111, 152649),

Gene: LeoJr_58 Start: 22928, Stop: 23443, Start Num: 11

Candidate Starts for LeoJr_58:

(4, 22808), (5, 22817), (6, 22862), (7, 22883), (Start: 11 @22928 has 4 MA's), (26, 23015), (32, 23060), (50, 23132), (56, 23159), (63, 23216), (68, 23237), (98, 23387), (100, 23393), (108, 23429),

Gene: Limpid_159 Start: 87871, Stop: 88338, Start Num: 12

Candidate Starts for Limpid_159:

(Start: 12 @87871 has 3 MA's), (21, 87937), (61, 88108), (67, 88129), (69, 88138), (88, 88210), (90, 88228), (93, 88270),

Gene: MeganTheeKilla_166 Start: 86965, Stop: 87450, Start Num: 13

Candidate Starts for MeganTheeKilla_166:

(Start: 13 @86965 has 30 MA's), (30, 87085), (31, 87094), (61, 87223), (90, 87340), (93, 87382),

Gene: Mimi_63 Start: 26091, Stop: 26582, Start Num: 11

Candidate Starts for Mimi_63:

(Start: 11 @26091 has 4 MA's), (26, 26178), (28, 26196), (32, 26223), (49, 26292), (68, 26397), (73, 26427), (98, 26529), (108, 26571),

Gene: Moab_165 Start: 89688, Stop: 90161, Start Num: 13

Candidate Starts for Moab_165:

(Start: 13 @89688 has 30 MA's), (30, 89808), (45, 89877), (51, 89889), (61, 89934), (82, 90012), (90, 90051), (93, 90093),

Gene: Muntaha_136 Start: 76880, Stop: 77359, Start Num: 13

Candidate Starts for Muntaha_136:

(Start: 13 @76880 has 30 MA's), (44, 77069), (54, 77093), (59, 77117), (61, 77126), (77, 77201), (90, 77249), (91, 77270), (102, 77324),

Gene: NiceHouse_256 Start: 128727, Stop: 129197, Start Num: 12

Candidate Starts for NiceHouse_256:

(Start: 12 @128727 has 3 MA's), (20, 128772), (26, 128808), (32, 128853), (45, 128919), (65, 128982), (80, 129039), (83, 129048), (94, 129120), (97, 129129), (98, 129132), (107, 129171),

Gene: Nirvana_304 Start: 164957, Stop: 164496, Start Num: 14

Candidate Starts for Nirvana_304:

(9, 164975), (Start: 14 @164957 has 9 MA's), (25, 164879), (31, 164834), (36, 164816), (39, 164792), (41, 164777), (71, 164690), (95, 164582), (99, 164570), (104, 164540),

Gene: Panchaali_56 Start: 20358, Stop: 20873, Start Num: 11

Candidate Starts for Panchaali_56:

(Start: 11 @20358 has 4 MA's), (26, 20445), (28, 20463), (32, 20490), (56, 20583), (68, 20658), (74, 20691), (98, 20814), (108, 20856),

Gene: Patbob_60 Start: 25547, Stop: 26038, Start Num: 11

Candidate Starts for Patbob_60:

(Start: 11 @25547 has 4 MA's), (26, 25634), (28, 25652), (32, 25679), (49, 25748), (66, 25844), (68, 25853), (73, 25883), (98, 25985), (108, 26027),

Gene: Patelgo_167 Start: 90380, Stop: 90856, Start Num: 13

Candidate Starts for Patelgo_167:

(Start: 13 @90380 has 30 MA's), (30, 90500), (45, 90569), (51, 90581), (59, 90617), (61, 90626), (82, 90704), (85, 90719), (90, 90743), (93, 90785), (105, 90833), (107, 90839),

Gene: PauloDiaboli_171 Start: 94249, Stop: 94710, Start Num: 13

Candidate Starts for PauloDiaboli_171:

(Start: 13 @94249 has 30 MA's), (16, 94258), (26, 94333), (32, 94378), (34, 94384), (43, 94435), (58, 94474), (59, 94477), (74, 94543), (93, 94636), (103, 94678),

Gene: Peregrin_220 Start: 110987, Stop: 111421, Start Num: 15

Candidate Starts for Peregrin_220:

(Start: 15 @110987 has 4 MA's), (26, 111065), (32, 111110), (35, 111119), (36, 111125), (46, 111170), (53, 111176), (72, 111251), (79, 111272), (86, 111296), (90, 111311), (92, 111341),

Gene: Phendrix_50 Start: 16816, Stop: 17256, Start Num: 14

Candidate Starts for Phendrix_50:

(10, 16801), (Start: 14 @16816 has 9 MA's), (19, 16843), (22, 16879), (24, 16888), (27, 16897), (37, 16963), (59, 17026), (61, 17035), (71, 17080), (78, 17101), (87, 17128), (90, 17143),

Gene: Phrampa_58 Start: 23330, Stop: 23773, Start Num: 11

Candidate Starts for Phrampa_58:

(Start: 11 @23330 has 4 MA's), (26, 23411), (30, 23444), (32, 23456), (40, 23510), (78, 23621), (90, 23663), (108, 23762),

Gene: Phredrick_168 Start: 86854, Stop: 87339, Start Num: 13

Candidate Starts for Phredrick_168:

(Start: 13 @86854 has 30 MA's), (Start: 15 @86860 has 4 MA's), (30, 86974), (40, 87037), (51, 87058), (53, 87067), (61, 87112), (90, 87229), (93, 87271),

Gene: Pumpernickel_167 Start: 96347, Stop: 96799, Start Num: 13

Candidate Starts for Pumpernickel_167:

(Start: 13 @96347 has 30 MA's), (17, 96362), (22, 96413), (26, 96431), (32, 96476), (47, 96530), (48, 96533), (75, 96632), (82, 96650), (94, 96725), (96, 96731), (102, 96755), (103, 96764),

Gene: Quantum_264 Start: 153093, Stop: 152638, Start Num: 14

Candidate Starts for Quantum_264:

(Start: 14 @153093 has 9 MA's), (33, 152964), (36, 152952), (39, 152928), (40, 152916), (41, 152913), (71, 152826), (95, 152718), (99, 152706), (104, 152676), (110, 152646), (111, 152643),

Gene: Racecar_64 Start: 26744, Stop: 27235, Start Num: 11

Candidate Starts for Racecar_64:

(Start: 11 @26744 has 4 MA's), (26, 26831), (28, 26849), (32, 26876), (49, 26945), (68, 27050), (73, 27080), (98, 27182), (108, 27224),

Gene: ReginaGlobina_57 Start: 23125, Stop: 23640, Start Num: 11

Candidate Starts for ReginaGlobina_57:

(4, 23005), (5, 23014), (6, 23059), (7, 23080), (Start: 11 @23125 has 4 MA's), (26, 23212), (32, 23257), (50, 23329), (56, 23356), (68, 23434), (98, 23584), (100, 23590), (108, 23626),

Gene: Rockabye_60 Start: 25473, Stop: 25946, Start Num: 11

Candidate Starts for Rockabye_60:

(8, 25437), (Start: 11 @25473 has 4 MA's), (26, 25560), (28, 25578), (32, 25605), (61, 25725), (78, 25791), (81, 25797), (87, 25818), (94, 25878), (103, 25917), (106, 25926),

Gene: SJReid_66 Start: 26527, Stop: 27021, Start Num: 12

Candidate Starts for SJReid_66:

(Start: 12 @26527 has 3 MA's), (26, 26614), (32, 26659), (61, 26800), (71, 26845), (78, 26866), (94, 26953),

Gene: Satis_266 Start: 153436, Stop: 152981, Start Num: 14

Candidate Starts for Satis_266:

(Start: 14 @153436 has 9 MA's), (33, 153307), (36, 153295), (39, 153271), (40, 153259), (41, 153256), (71, 153169), (95, 153061), (99, 153049), (104, 153019), (110, 152989), (111, 152986),

Gene: SeresaTree_159 Start: 87057, Stop: 87533, Start Num: 13

Candidate Starts for SeresaTree_159:

(Start: 13 @87057 has 30 MA's), (23, 87135), (36, 87204), (67, 87318), (90, 87423), (93, 87465),

Gene: Sham_158 Start: 88846, Stop: 89325, Start Num: 13

Candidate Starts for Sham_158:

(Start: 13 @88846 has 30 MA's), (52, 89053), (55, 89068), (61, 89095), (90, 89215), (93, 89257), (101, 89281),

Gene: SparkleGoddess_164 Start: 88701, Stop: 89177, Start Num: 13

Candidate Starts for SparkleGoddess_164:

(Start: 13 @88701 has 30 MA's), (30, 88821), (45, 88890), (51, 88902), (59, 88938), (61, 88947), (77, 89016), (82, 89025), (90, 89064), (93, 89106), (103, 89148), (107, 89160),

Gene: Stigma_163 Start: 89135, Stop: 89611, Start Num: 13

Candidate Starts for Stigma_163:

(Start: 13 @89135 has 30 MA's), (30, 89255), (38, 89303), (45, 89324), (51, 89336), (59, 89372), (61, 89381), (82, 89459), (90, 89498), (93, 89540), (103, 89582), (107, 89594),

Gene: Talia1610_63 Start: 26109, Stop: 26600, Start Num: 11

Candidate Starts for Talia1610_63:

(Start: 11 @26109 has 4 MA's), (26, 26196), (28, 26214), (32, 26241), (49, 26310), (68, 26415), (73, 26445), (98, 26547), (108, 26589),

Gene: Trina_253 Start: 127069, Stop: 127509, Start Num: 13

Candidate Starts for Trina_253:

(Start: 13 @127069 has 30 MA's), (18, 127093), (22, 127129), (26, 127147), (32, 127192), (61, 127294), (72, 127342), (94, 127447),

Gene: TunaTartare_164 Start: 90092, Stop: 90559, Start Num: 13

Candidate Starts for TunaTartare_164:

(Start: 13 @90092 has 30 MA's), (21, 90158), (60, 90323), (61, 90329), (67, 90350), (76, 90395), (90, 90449), (93, 90491), (101, 90515),

Gene: WaddleDee_55 Start: 20852, Stop: 21361, Start Num: 11

Candidate Starts for WaddleDee_55:

(Start: 11 @20852 has 4 MA's), (26, 20939), (32, 20984), (56, 21077), (68, 21152), (98, 21302), (108, 21344),

Gene: Wakanda_135 Start: 76822, Stop: 77301, Start Num: 13

Candidate Starts for Wakanda_135:

(Start: 13 @76822 has 30 MA's), (44, 77011), (54, 77035), (59, 77059), (61, 77068), (77, 77143), (90, 77191), (91, 77212), (102, 77266),

Gene: Weasels2_231 Start: 113792, Stop: 114247, Start Num: 15

Candidate Starts for Weasels2_231:

(Start: 15 @113792 has 4 MA's), (23, 113861), (26, 113870), (29, 113894), (32, 113915), (45, 113975), (70, 114065), (97, 114191), (109, 114242),

Gene: Westy_166 Start: 89450, Stop: 89926, Start Num: 13

Candidate Starts for Westy_166:

(Start: 13 @89450 has 30 MA's), (30, 89570), (38, 89618), (45, 89639), (51, 89651), (59, 89687), (61, 89696), (82, 89774), (90, 89813), (93, 89855), (103, 89897), (107, 89909),

Gene: Zooman_150 Start: 90927, Stop: 91391, Start Num: 13

Candidate Starts for Zooman_150:

(Start: 13 @90927 has 30 MA's), (22, 90993), (23, 91002), (26, 91011), (32, 91056), (41, 91110), (45, 91116), (52, 91131),

