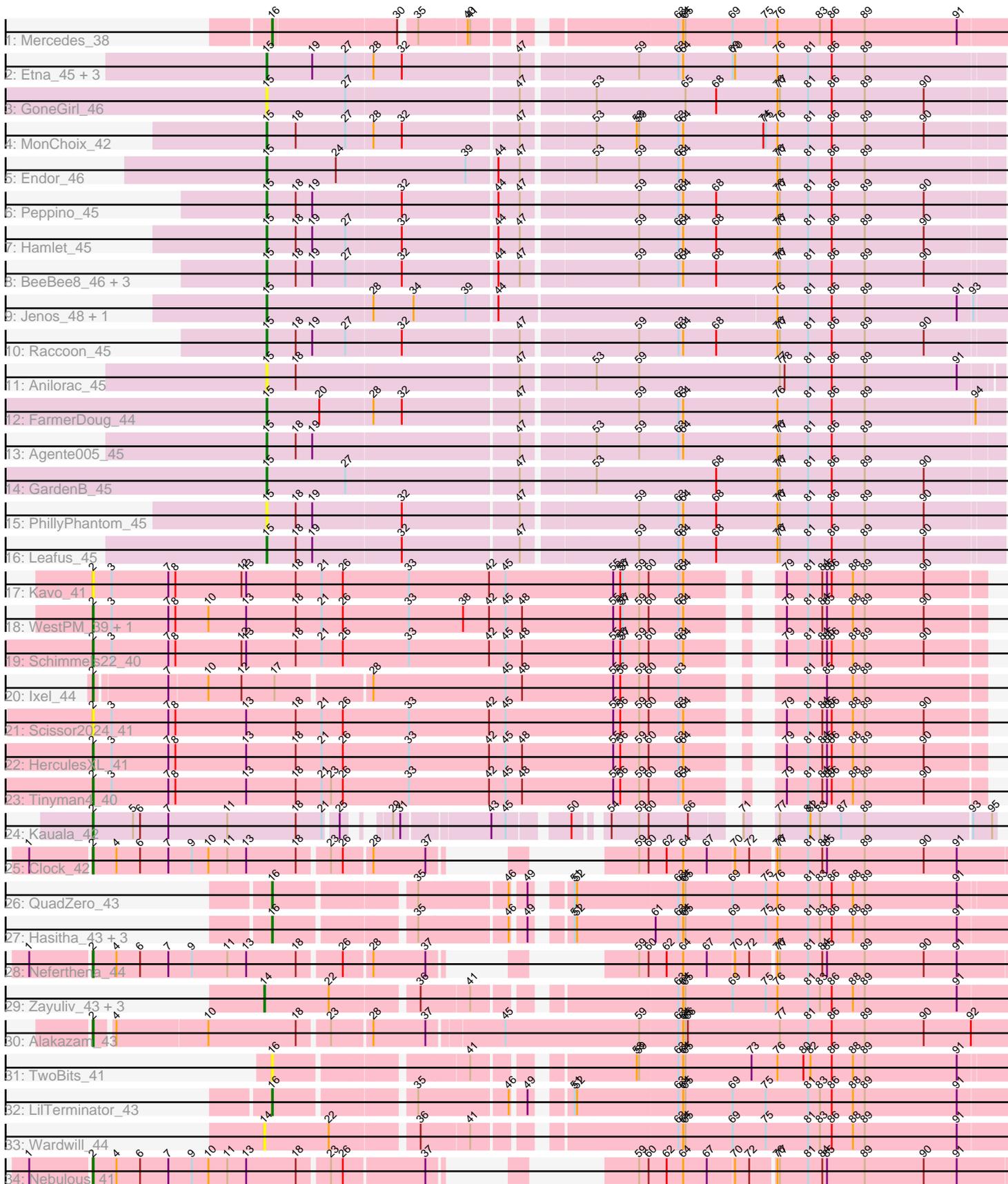


Pham 283912



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 283912 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283912 has 48 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Mercedes_38
- Track 2 : Etna_45, Stormbreaker8_44, KingJulien_44, Soror1_44
- Track 3 : GoneGirl_46
- Track 4 : MonChoix_42
- Track 5 : Endor_46
- Track 6 : Peppino_45
- Track 7 : Hamlet_45
- Track 8 : BeeBee8_46, Schnapsidee_45, Balsa_44, Redfield_45
- Track 9 : Jenos_48, CarisSwetlik_48
- Track 10 : Raccoon_45
- Track 11 : Anilorac_45
- Track 12 : FarmerDoug_44
- Track 13 : Agente005_45
- Track 14 : GardenB_45
- Track 15 : PhillyPhantom_45
- Track 16 : Leafus_45
- Track 17 : Kavo_41
- Track 18 : WestPM_39, Penta_39
- Track 19 : Schimmels22_40
- Track 20 : Ixel_44
- Track 21 : Scissor2024_41
- Track 22 : HerculesXL_41
- Track 23 : Tinyman4_40
- Track 24 : Kauala_42
- Track 25 : Clock_42
- Track 26 : QuadZero_43
- Track 27 : Hasitha_43, CaptainRex_43, Librie_43, Fulton_43
- Track 28 : Neferthena_44
- Track 29 : Zayuliv_43, GreenIvy_42, Zepp_43, BaronJohn_45
- Track 30 : Alakazam_43
- Track 31 : TwoBits_41
- Track 32 : LilTerminator_43
- Track 33 : Wardwill_44
- Track 34 : Nebulous_41

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

The start number called the most often in the published annotations is 15, it was called in 17 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agente005_45, Anilorac_45, Balsa_44, BeeBee8_46, CarisSwetlik_48, Endor_46, Etna_45, FarmerDoug_44, GardenB_45, GoneGirl_46, Hamlet_45, Jenos_48, KingJulien_44, Leafus_45, MonChoix_42, Peppino_45, PhillyPhantom_45, Raccoon_45, Redfield_45, Schnapsidee_45, Soror1_44, Stormbreaker8_44,

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

-

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

- Alakazam_43, BaronJohn_45, CaptainRex_43, Clock_42, Fulton_43, Greenlvy_42, Hasitha_43, HerculesXL_41, Ixel_44, Kauala_42, Kavo_41, Librie_43, LilTerminator_43, Mercedes_38, Nebulous_41, Neferthena_44, Penta_39, QuadZero_43, Schimmels22_40, Scissor2024_41, Tinyman4_40, TwoBits_41, Wardwill_44, WestPM_39, Zayuliv_43, Zepp_43,

Summary by start number:

Start 2:

- Found in 13 of 48 (27.1%) of genes in pham
- Manual Annotations of this start: 10 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alakazam_43 (EA5), Clock_42 (EA5), HerculesXL_41 (EA11), Ixel_44 (EA11), Kauala_42 (EA4), Kavo_41 (EA11), Nebulous_41 (EA5), Neferthena_44 (EA5), Penta_39 (EA11), Schimmels22_40 (EA11), Scissor2024_41 (EA11), Tinyman4_40 (EA11), WestPM_39 (EA11),

Start 14:

- Found in 5 of 48 (10.4%) 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: BaronJohn_45 (EA5), Greenlvy_42 (EA5), Wardwill_44 (EA5), Zayuliv_43 (EA5), Zepp_43 (EA5),

Start 15:

- Found in 22 of 48 (45.8%) of genes in pham
- Manual Annotations of this start: 17 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agente005_45 (EA1), Anilorac_45 (EA1), Balsa_44 (EA1), BeeBee8_46 (EA1), CarisSwetlik_48 (EA1), Endor_46 (EA1), Etna_45 (EA1), FarmerDoug_44 (EA1), GardenB_45 (EA1), GoneGirl_46 (EA1), Hamlet_45 (EA1), Jenos_48 (EA1), KingJulien_44 (EA1), Leafus_45 (EA1), MonChoix_42 (EA1), Peppino_45 (EA1), PhillyPhantom_45 (EA1), Raccoon_45 (EA1), Redfield_45 (EA1), Schnapsidee_45 (EA1), Soror1_44 (EA1), Stormbreaker8_44 (EA1),

Start 16:

- Found in 8 of 48 (16.7%) of genes in pham
- Manual Annotations of this start: 7 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CaptainRex_43 (EA5), Fulton_43 (EA5), Hasitha_43 (EA5), Librie_43 (EA5), LiTerminator_43 (EA5), Mercedes_38 (EA), QuadZero_43 (EA5), TwoBits_41 (EA5),

Summary by clusters:

There are 5 clusters represented in this pham: EA1, EA11, EA5, EA, EA4,

Info for manual annotations of cluster EA:

- Start number 16 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA1:

- Start number 15 was manually annotated 17 times for cluster EA1.

Info for manual annotations of cluster EA11:

- Start number 2 was manually annotated 5 times for cluster EA11.

Info for manual annotations of cluster EA4:

- Start number 2 was manually annotated 1 time for cluster EA4.

Info for manual annotations of cluster EA5:

- Start number 2 was manually annotated 4 times for cluster EA5.
- Start number 14 was manually annotated 3 times for cluster EA5.
- Start number 16 was manually annotated 6 times for cluster EA5.

Gene Information:

Gene: Agente005_45 Start: 33051, Stop: 32146, Start Num: 15

Candidate Starts for Agente005_45:

(Start: 15 @33051 has 17 MA's), (18, 33015), (19, 32994), (47, 32739), (53, 32655), (59, 32601), (63, 32553), (64, 32547), (76, 32427), (77, 32424), (81, 32388), (86, 32358), (89, 32316),

Gene: Alakazam_43 Start: 32406, Stop: 31279, Start Num: 2

Candidate Starts for Alakazam_43:

(Start: 2 @32406 has 10 MA's), (4, 32385), (10, 32271), (18, 32160), (23, 32124), (28, 32076), (37, 32010), (45, 31920), (59, 31752), (63, 31704), (64, 31698), (65, 31695), (66, 31692), (77, 31575), (81, 31539), (86, 31509), (89, 31467), (90, 31392), (92, 31332),

Gene: Anilorac_45 Start: 32993, Stop: 32091, Start Num: 15

Candidate Starts for Anilorac_45:

(Start: 15 @32993 has 17 MA's), (18, 32957), (47, 32681), (53, 32597), (59, 32543), (77, 32366), (78, 32360), (81, 32330), (86, 32300), (89, 32258), (91, 32141),

Gene: Balsa_44 Start: 33038, Stop: 32133, Start Num: 15

Candidate Starts for Balsa_44:

(Start: 15 @33038 has 17 MA's), (18, 33002), (19, 32981), (27, 32939), (32, 32870), (44, 32753), (47, 32726), (59, 32588), (63, 32540), (64, 32534), (68, 32492), (76, 32414), (77, 32411), (81, 32375), (86, 32345), (89, 32303), (90, 32228),

Gene: BaronJohn_45 Start: 31194, Stop: 30319, Start Num: 14

Candidate Starts for BaronJohn_45:

(Start: 14 @31194 has 3 MA's), (22, 31113), (36, 31014), (41, 30957), (63, 30741), (64, 30735), (65, 30732), (69, 30672), (75, 30630), (76, 30615), (81, 30576), (83, 30561), (86, 30546), (88, 30519), (89, 30504), (91, 30387),

Gene: BeeBee8_46 Start: 33209, Stop: 32304, Start Num: 15

Candidate Starts for BeeBee8_46:

(Start: 15 @33209 has 17 MA's), (18, 33173), (19, 33152), (27, 33110), (32, 33041), (44, 32924), (47, 32897), (59, 32759), (63, 32711), (64, 32705), (68, 32663), (76, 32585), (77, 32582), (81, 32546), (86, 32516), (89, 32474), (90, 32399),

Gene: CaptainRex_43 Start: 30427, Stop: 29567, Start Num: 16

Candidate Starts for CaptainRex_43:

(Start: 16 @30427 has 7 MA's), (35, 30268), (46, 30163), (49, 30148), (51, 30115), (52, 30112), (61, 30016), (63, 29989), (64, 29983), (65, 29980), (69, 29920), (75, 29878), (76, 29863), (81, 29824), (83, 29809), (86, 29794), (88, 29767), (89, 29752), (91, 29635),

Gene: CarisSwetlik_48 Start: 33613, Stop: 32699, Start Num: 15

Candidate Starts for CarisSwetlik_48:

(Start: 15 @33613 has 17 MA's), (28, 33481), (34, 33430), (39, 33364), (44, 33328), (76, 32986), (81, 32947), (86, 32917), (89, 32875), (91, 32758), (93, 32740),

Gene: Clock_42 Start: 33154, Stop: 32201, Start Num: 2

Candidate Starts for Clock_42:

(1, 33229), (Start: 2 @33154 has 10 MA's), (4, 33124), (6, 33094), (7, 33058), (9, 33028), (10, 33007), (11, 32983), (13, 32959), (18, 32896), (23, 32860), (26, 32845), (28, 32812), (37, 32746), (59, 32659), (60, 32647), (62, 32626), (64, 32605), (67, 32575), (70, 32542), (72, 32524), (76, 32497), (77, 32494), (81, 32458), (84, 32440), (85, 32434), (89, 32386), (90, 32311), (91, 32269),

Gene: Endor_46 Start: 33281, Stop: 32376, Start Num: 15

Candidate Starts for Endor_46:

(Start: 15 @33281 has 17 MA's), (24, 33194), (39, 33032), (44, 32996), (47, 32969), (53, 32885), (59, 32831), (63, 32783), (64, 32777), (76, 32657), (77, 32654), (81, 32618), (86, 32588), (89, 32546),

Gene: Etna_45 Start: 33085, Stop: 32180, Start Num: 15

Candidate Starts for Etna_45:

(Start: 15 @33085 has 17 MA's), (19, 33028), (27, 32986), (28, 32953), (32, 32917), (47, 32773), (59, 32635), (63, 32587), (64, 32581), (69, 32518), (70, 32515), (76, 32461), (81, 32422), (86, 32392), (89, 32350),

Gene: FarmerDoug_44 Start: 32791, Stop: 31886, Start Num: 15

Candidate Starts for FarmerDoug_44:

(Start: 15 @32791 has 17 MA's), (20, 32725), (28, 32659), (32, 32623), (47, 32479), (59, 32341), (63, 32293), (64, 32287), (76, 32167), (81, 32128), (86, 32098), (89, 32056), (94, 31918),

Gene: Fulton_43 Start: 30428, Stop: 29568, Start Num: 16

Candidate Starts for Fulton_43:

(Start: 16 @30428 has 7 MA's), (35, 30269), (46, 30164), (49, 30149), (51, 30116), (52, 30113), (61, 30017), (63, 29990), (64, 29984), (65, 29981), (69, 29921), (75, 29879), (76, 29864), (81, 29825), (83, 29810), (86, 29795), (88, 29768), (89, 29753), (91, 29636),

Gene: GardenB_45 Start: 33026, Stop: 32121, Start Num: 15

Candidate Starts for GardenB_45:

(Start: 15 @33026 has 17 MA's), (27, 32927), (47, 32714), (53, 32630), (68, 32480), (76, 32402), (77, 32399), (81, 32363), (86, 32333), (89, 32291), (90, 32216),

Gene: GoneGirl_46 Start: 33019, Stop: 32114, Start Num: 15

Candidate Starts for GoneGirl_46:

(Start: 15 @33019 has 17 MA's), (27, 32920), (47, 32707), (53, 32623), (65, 32512), (68, 32473), (76, 32395), (77, 32392), (81, 32356), (86, 32326), (89, 32284), (90, 32209),

Gene: Greenlvy_42 Start: 30783, Stop: 29908, Start Num: 14

Candidate Starts for Greenlvy_42:

(Start: 14 @30783 has 3 MA's), (22, 30702), (36, 30603), (41, 30546), (63, 30330), (64, 30324), (65, 30321), (69, 30261), (75, 30219), (76, 30204), (81, 30165), (83, 30150), (86, 30135), (88, 30108), (89, 30093), (91, 29976),

Gene: Hamlet_45 Start: 33030, Stop: 32125, Start Num: 15

Candidate Starts for Hamlet_45:

(Start: 15 @33030 has 17 MA's), (18, 32994), (19, 32973), (27, 32931), (32, 32862), (44, 32745), (47, 32718), (59, 32580), (63, 32532), (64, 32526), (68, 32484), (76, 32406), (77, 32403), (81, 32367), (86, 32337), (89, 32295), (90, 32220),

Gene: Hasitha_43 Start: 30440, Stop: 29580, Start Num: 16

Candidate Starts for Hasitha_43:

(Start: 16 @30440 has 7 MA's), (35, 30281), (46, 30176), (49, 30161), (51, 30128), (52, 30125), (61, 30029), (63, 30002), (64, 29996), (65, 29993), (69, 29933), (75, 29891), (76, 29876), (81, 29837), (83, 29822), (86, 29807), (88, 29780), (89, 29765), (91, 29648),

Gene: HerculesXL_41 Start: 30550, Stop: 29477, Start Num: 2

Candidate Starts for HerculesXL_41:

(Start: 2 @30550 has 10 MA's), (3, 30526), (7, 30454), (8, 30445), (13, 30355), (18, 30292), (21, 30259), (26, 30232), (33, 30148), (42, 30046), (45, 30025), (48, 30004), (55, 29890), (56, 29881), (59, 29857), (60, 29845), (63, 29809), (64, 29803), (79, 29725), (81, 29698), (84, 29680), (85, 29674), (86, 29668), (88, 29641), (89, 29626), (90, 29551),

Gene: Ixel_44 Start: 32296, Stop: 31250, Start Num: 2

Candidate Starts for Ixel_44:

(Start: 2 @32296 has 10 MA's), (7, 32209), (10, 32161), (12, 32119), (17, 32077), (28, 31966), (45, 31798), (48, 31777), (55, 31663), (56, 31654), (59, 31630), (60, 31618), (63, 31582), (81, 31471), (85, 31447), (88, 31414), (89, 31399),

Gene: Jenos_48 Start: 33896, Stop: 32982, Start Num: 15

Candidate Starts for Jenos_48:

(Start: 15 @33896 has 17 MA's), (28, 33764), (34, 33713), (39, 33647), (44, 33611), (76, 33269), (81, 33230), (86, 33200), (89, 33158), (91, 33041), (93, 33023),

Gene: Kauala_42 Start: 32120, Stop: 31143, Start Num: 2

Candidate Starts for Kauala_42:

(Start: 2 @32120 has 10 MA's), (5, 32069), (6, 32060), (7, 32024), (11, 31949), (18, 31862), (21, 31829), (25, 31814), (29, 31784), (31, 31775), (43, 31673), (45, 31655), (50, 31592), (54, 31565), (59, 31532), (60, 31520), (66, 31472), (71, 31427), (77, 31412), (81, 31376), (82, 31373), (83, 31361), (87, 31334), (89, 31304), (93, 31172), (95, 31148),

Gene: Kavo_41 Start: 30672, Stop: 29599, Start Num: 2

Candidate Starts for Kavo_41:

(Start: 2 @30672 has 10 MA's), (3, 30648), (7, 30576), (8, 30567), (12, 30483), (13, 30477), (18, 30414), (21, 30381), (26, 30354), (33, 30270), (42, 30168), (45, 30147), (55, 30012), (56, 30003), (57, 30000), (59, 29979), (60, 29967), (63, 29931), (64, 29925), (79, 29847), (81, 29820), (84, 29802), (85, 29796), (86, 29790), (88, 29763), (89, 29748), (90, 29673),

Gene: KingJulien_44 Start: 32921, Stop: 32016, Start Num: 15

Candidate Starts for KingJulien_44:

(Start: 15 @32921 has 17 MA's), (19, 32864), (27, 32822), (28, 32789), (32, 32753), (47, 32609), (59, 32471), (63, 32423), (64, 32417), (69, 32354), (70, 32351), (76, 32297), (81, 32258), (86, 32228), (89, 32186),

Gene: Leafus_45 Start: 33184, Stop: 32279, Start Num: 15

Candidate Starts for Leafus_45:

(Start: 15 @33184 has 17 MA's), (18, 33148), (19, 33127), (32, 33016), (47, 32872), (59, 32734), (63, 32686), (64, 32680), (68, 32638), (76, 32560), (77, 32557), (81, 32521), (86, 32491), (89, 32449), (90, 32374),

Gene: Librie_43 Start: 30427, Stop: 29567, Start Num: 16

Candidate Starts for Librie_43:

(Start: 16 @30427 has 7 MA's), (35, 30268), (46, 30163), (49, 30148), (51, 30115), (52, 30112), (61, 30016), (63, 29989), (64, 29983), (65, 29980), (69, 29920), (75, 29878), (76, 29863), (81, 29824), (83, 29809), (86, 29794), (88, 29767), (89, 29752), (91, 29635),

Gene: LilTerminator_43 Start: 30449, Stop: 29589, Start Num: 16

Candidate Starts for LilTerminator_43:

(Start: 16 @30449 has 7 MA's), (35, 30290), (46, 30185), (49, 30170), (51, 30137), (52, 30134), (63, 30011), (64, 30005), (65, 30002), (69, 29942), (75, 29900), (81, 29846), (83, 29831), (86, 29816), (88, 29789), (89, 29774), (91, 29657),

Gene: Mercedes_38 Start: 30460, Stop: 29597, Start Num: 16

Candidate Starts for Mercedes_38:

(Start: 16 @30460 has 7 MA's), (30, 30310), (35, 30295), (40, 30238), (41, 30235), (63, 30019), (64, 30013), (65, 30010), (69, 29950), (75, 29908), (76, 29893), (83, 29839), (86, 29824), (89, 29782), (91, 29665),

Gene: MonChoix_42 Start: 32633, Stop: 31728, Start Num: 15

Candidate Starts for MonChoix_42:

(Start: 15 @32633 has 17 MA's), (18, 32597), (27, 32534), (28, 32501), (32, 32465), (47, 32321), (53, 32237), (58, 32186), (59, 32183), (63, 32135), (64, 32129), (74, 32027), (75, 32024), (76, 32009), (81, 31970), (86, 31940), (89, 31898), (90, 31823),

Gene: Nebulous_41 Start: 33335, Stop: 32382, Start Num: 2

Candidate Starts for Nebulous_41:

(1, 33410), (Start: 2 @33335 has 10 MA's), (4, 33305), (6, 33275), (7, 33239), (9, 33209), (10, 33188), (11, 33164), (13, 33140), (18, 33077), (23, 33041), (26, 33026), (37, 32927), (59, 32840), (60, 32828), (62, 32807), (64, 32786), (67, 32756), (70, 32723), (72, 32705), (76, 32678), (77, 32675), (81, 32639), (84, 32621), (85, 32615), (89, 32567), (90, 32492), (91, 32450),

Gene: Neferthema_44 Start: 32676, Stop: 31723, Start Num: 2

Candidate Starts for Neferthema_44:

(1, 32751), (Start: 2 @32676 has 10 MA's), (4, 32646), (6, 32616), (7, 32580), (9, 32550), (11, 32505), (13, 32481), (18, 32418), (26, 32367), (28, 32334), (37, 32268), (59, 32181), (60, 32169), (62, 32148), (64, 32127), (67, 32097), (70, 32064), (72, 32046), (76, 32019), (77, 32016), (81, 31980), (84, 31962), (85, 31956), (89, 31908), (90, 31833), (91, 31791),

Gene: Penta_39 Start: 30531, Stop: 29458, Start Num: 2

Candidate Starts for Penta_39:

(Start: 2 @30531 has 10 MA's), (3, 30507), (7, 30435), (8, 30426), (10, 30384), (13, 30336), (18, 30273), (21, 30240), (26, 30213), (33, 30129), (38, 30060), (42, 30027), (45, 30006), (48, 29985), (55, 29871), (56, 29862), (57, 29859), (59, 29838), (60, 29826), (63, 29790), (64, 29784), (79, 29706), (81, 29679), (84, 29661), (85, 29655), (88, 29622), (89, 29607), (90, 29532),

Gene: Peppino_45 Start: 33030, Stop: 32125, Start Num: 15

Candidate Starts for Peppino_45:

(Start: 15 @33030 has 17 MA's), (18, 32994), (19, 32973), (32, 32862), (44, 32745), (47, 32718), (59, 32580), (63, 32532), (64, 32526), (68, 32484), (76, 32406), (77, 32403), (81, 32367), (86, 32337), (89, 32295), (90, 32220),

Gene: PhillyPhantom_45 Start: 33020, Stop: 32115, Start Num: 15

Candidate Starts for PhillyPhantom_45:

(Start: 15 @33020 has 17 MA's), (18, 32984), (19, 32963), (32, 32852), (47, 32708), (59, 32570), (63, 32522), (64, 32516), (68, 32474), (76, 32396), (77, 32393), (81, 32357), (86, 32327), (89, 32285), (90, 32210),

Gene: QuadZero_43 Start: 30594, Stop: 29737, Start Num: 16

Candidate Starts for QuadZero_43:

(Start: 16 @30594 has 7 MA's), (35, 30435), (46, 30330), (49, 30315), (51, 30282), (52, 30279), (63, 30156), (64, 30150), (65, 30147), (69, 30087), (75, 30045), (76, 30030), (81, 29991), (83, 29976), (86, 29961), (88, 29934), (89, 29919), (91, 29802),

Gene: Raccoon_45 Start: 32987, Stop: 32082, Start Num: 15

Candidate Starts for Raccoon_45:

(Start: 15 @32987 has 17 MA's), (18, 32951), (19, 32930), (27, 32888), (32, 32819), (47, 32675), (59, 32537), (63, 32489), (64, 32483), (68, 32441), (76, 32363), (77, 32360), (81, 32324), (86, 32294), (89, 32252), (90, 32177),

Gene: Redfield_45 Start: 33038, Stop: 32133, Start Num: 15

Candidate Starts for Redfield_45:

(Start: 15 @33038 has 17 MA's), (18, 33002), (19, 32981), (27, 32939), (32, 32870), (44, 32753), (47, 32726), (59, 32588), (63, 32540), (64, 32534), (68, 32492), (76, 32414), (77, 32411), (81, 32375), (86, 32345), (89, 32303), (90, 32228),

Gene: Schimmels22_40 Start: 30924, Stop: 29851, Start Num: 2

Candidate Starts for Schimmels22_40:

(Start: 2 @30924 has 10 MA's), (3, 30900), (7, 30828), (8, 30819), (12, 30735), (13, 30729), (18, 30666), (21, 30633), (26, 30606), (33, 30522), (42, 30420), (45, 30399), (48, 30378), (55, 30264), (56, 30255), (57, 30252), (59, 30231), (60, 30219), (63, 30183), (64, 30177), (79, 30099), (81, 30072), (84, 30054), (85, 30048), (86, 30042), (88, 30015), (89, 30000), (90, 29925),

Gene: Schnapsidee_45 Start: 33045, Stop: 32140, Start Num: 15

Candidate Starts for Schnapsidee_45:

(Start: 15 @33045 has 17 MA's), (18, 33009), (19, 32988), (27, 32946), (32, 32877), (44, 32760), (47, 32733), (59, 32595), (63, 32547), (64, 32541), (68, 32499), (76, 32421), (77, 32418), (81, 32382), (86,

32352), (89, 32310), (90, 32235),

Gene: Scissor2024_41 Start: 30571, Stop: 29498, Start Num: 2

Candidate Starts for Scissor2024_41:

(Start: 2 @30571 has 10 MA's), (3, 30547), (7, 30475), (8, 30466), (13, 30376), (18, 30313), (21, 30280), (26, 30253), (33, 30169), (42, 30067), (45, 30046), (55, 29911), (56, 29902), (59, 29878), (60, 29866), (63, 29830), (64, 29824), (79, 29746), (81, 29719), (84, 29701), (85, 29695), (86, 29689), (88, 29662), (89, 29647), (90, 29572),

Gene: Soror1_44 Start: 32936, Stop: 32031, Start Num: 15

Candidate Starts for Soror1_44:

(Start: 15 @32936 has 17 MA's), (19, 32879), (27, 32837), (28, 32804), (32, 32768), (47, 32624), (59, 32486), (63, 32438), (64, 32432), (69, 32369), (70, 32366), (76, 32312), (81, 32273), (86, 32243), (89, 32201),

Gene: Stormbreaker8_44 Start: 32921, Stop: 32016, Start Num: 15

Candidate Starts for Stormbreaker8_44:

(Start: 15 @32921 has 17 MA's), (19, 32864), (27, 32822), (28, 32789), (32, 32753), (47, 32609), (59, 32471), (63, 32423), (64, 32417), (69, 32354), (70, 32351), (76, 32297), (81, 32258), (86, 32228), (89, 32186),

Gene: Tinyman4_40 Start: 30550, Stop: 29477, Start Num: 2

Candidate Starts for Tinyman4_40:

(Start: 2 @30550 has 10 MA's), (3, 30526), (7, 30454), (8, 30445), (13, 30355), (18, 30292), (21, 30259), (23, 30247), (26, 30232), (33, 30148), (42, 30046), (45, 30025), (48, 30004), (55, 29890), (56, 29881), (59, 29857), (60, 29845), (63, 29809), (64, 29803), (79, 29725), (81, 29698), (84, 29680), (85, 29674), (86, 29668), (88, 29641), (89, 29626), (90, 29551),

Gene: TwoBits_41 Start: 30996, Stop: 30142, Start Num: 16

Candidate Starts for TwoBits_41:

(Start: 16 @30996 has 7 MA's), (41, 30777), (58, 30612), (59, 30609), (63, 30561), (64, 30555), (65, 30552), (73, 30468), (76, 30435), (80, 30402), (82, 30393), (86, 30366), (88, 30339), (89, 30324), (91, 30207),

Gene: Wardwill_44 Start: 30626, Stop: 29751, Start Num: 14

Candidate Starts for Wardwill_44:

(Start: 14 @30626 has 3 MA's), (22, 30545), (36, 30446), (41, 30389), (63, 30173), (64, 30167), (65, 30164), (69, 30104), (75, 30062), (81, 30008), (83, 29993), (86, 29978), (88, 29951), (89, 29936), (91, 29819),

Gene: WestPM_39 Start: 30694, Stop: 29621, Start Num: 2

Candidate Starts for WestPM_39:

(Start: 2 @30694 has 10 MA's), (3, 30670), (7, 30598), (8, 30589), (10, 30547), (13, 30499), (18, 30436), (21, 30403), (26, 30376), (33, 30292), (38, 30223), (42, 30190), (45, 30169), (48, 30148), (55, 30034), (56, 30025), (57, 30022), (59, 30001), (60, 29989), (63, 29953), (64, 29947), (79, 29869), (81, 29842), (84, 29824), (85, 29818), (88, 29785), (89, 29770), (90, 29695),

Gene: Zayuliv_43 Start: 31065, Stop: 30190, Start Num: 14

Candidate Starts for Zayuliv_43:

(Start: 14 @31065 has 3 MA's), (22, 30984), (36, 30885), (41, 30828), (63, 30612), (64, 30606), (65, 30603), (69, 30543), (75, 30501), (76, 30486), (81, 30447), (83, 30432), (86, 30417), (88, 30390), (89, 30375), (91, 30258),

Gene: Zepp_43 Start: 30499, Stop: 29624, Start Num: 14

Candidate Starts for Zepp_43:

(Start: 14 @30499 has 3 MA's), (22, 30418), (36, 30319), (41, 30262), (63, 30046), (64, 30040), (65, 30037), (69, 29977), (75, 29935), (76, 29920), (81, 29881), (83, 29866), (86, 29851), (88, 29824), (89, 29809), (91, 29692),