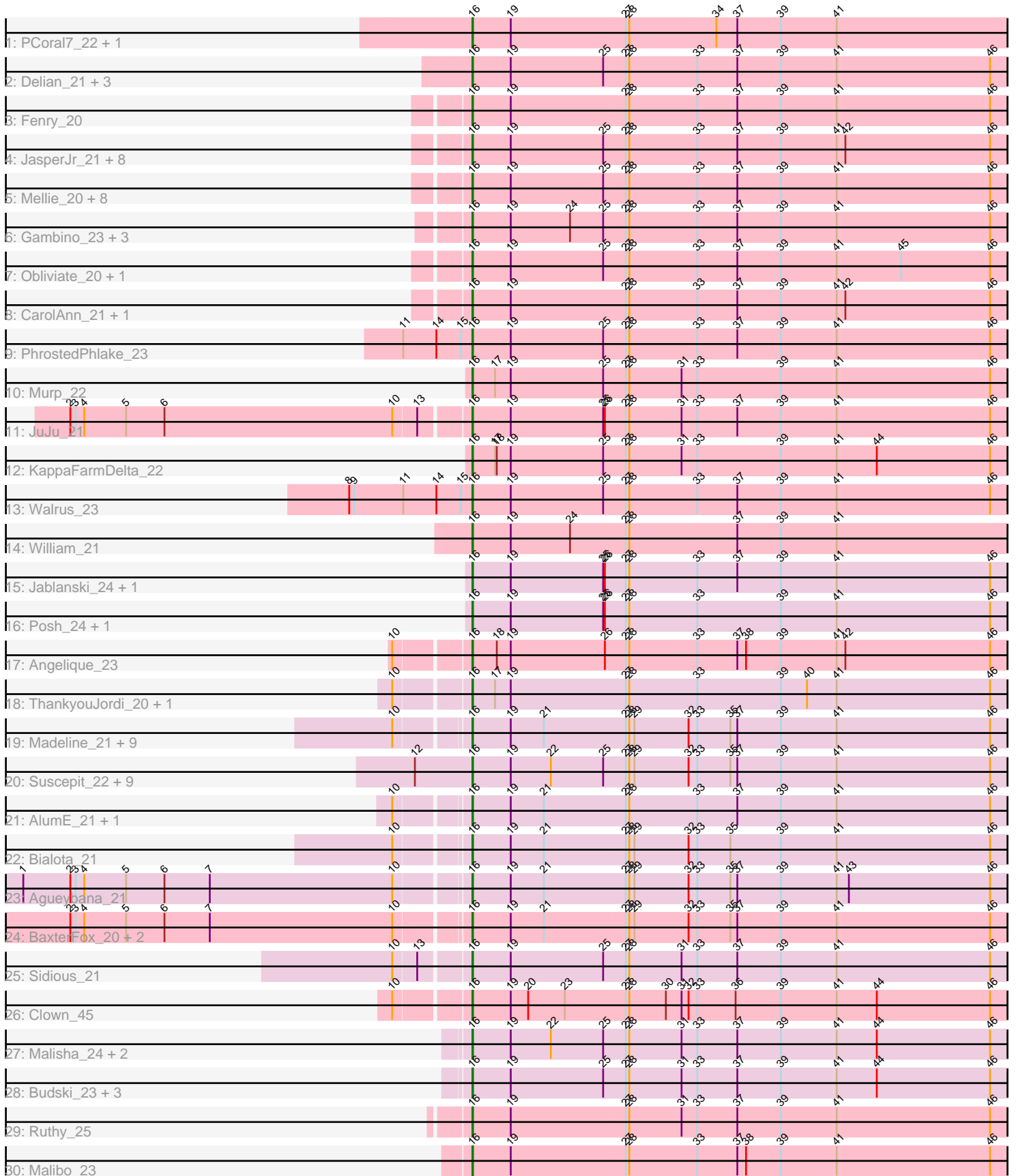


Pham 163534



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 163534 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163534 has 84 members, 4 are drafts.

Phages represented in each track:

- Track 1 : PCoral7_22, Toast_22
- Track 2 : Delian_21, UmaThurman_21, Wisp_20, CaptainKirk2_21
- Track 3 : Fenry_20
- Track 4 : JasperJr_21, Melba_21, Zarbodnamra_21, Archis_22, Barco_21, Utz_21, BlingBling_21, MintFen_21, Guacamole_21
- Track 5 : Mellie_20, Frokostdame_21, Pipp_21, Hitter_21, Malachai_22, Samba_21, Jalammah_23, Begonia_22, Lysidious_22
- Track 6 : Gambino_23, Blueberry_23, Azula_23, MissRona_23
- Track 7 : Obliviate_20, ZiggyZoo_20
- Track 8 : CarolAnn_21, Blino_21
- Track 9 : PhrostedPhlake_23
- Track 10 : Murp_22
- Track 11 : JuJu_21
- Track 12 : KappaFarmDelta_22
- Track 13 : Walrus_23
- Track 14 : William_21
- Track 15 : Jablanski_24, Pytheas_24
- Track 16 : Posh_24, Wrigley_24
- Track 17 : Angelique_23
- Track 18 : ThankyouJordi_20, WelcomeAyanna_20
- Track 19 : Madeline_21, Bosnia_21, TimTam_21, Hugley_21, Nymphadora_21, Zirinka_21, Herod_21, Ohgeesy_21, Eviarto_21, BatStarr_21
- Track 20 : Suscepit_22, Eudoria_22, Tayonia_22, Maridalia_21, Trumpet_22, Neobush_22, Antonio_22, Zameen_22, Manasvini_22, Kita_22
- Track 21 : AlumE_21, BoyNamedSue_21
- Track 22 : Bialota_21
- Track 23 : Agueybana_21
- Track 24 : BaxterFox_20, PantheRoc_20, Yeezy_22
- Track 25 : Sidious_21
- Track 26 : Clown_45
- Track 27 : Malisha_24, Squiddly_25, Spooky_23
- Track 28 : Budski_23, Kamaru_23, Whitney_24, Holliday_23
- Track 29 : Ruthy_25
- Track 30 : Malibo_23

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

The start number called the most often in the published annotations is 16, it was called in 80 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana_21, AlumE_21, Angelique_23, Antonio_22, Archis_22, Azula_23, Barco_21, BatStarr_21, BaxterFox_20, Begonia_22, Bialota_21, BlingBling_21, Blino_21, Blueberry_23, Bosnia_21, BoyNamedSue_21, Budski_23, CaptainKirk2_21, CarolAnn_21, Clown_45, Delian_21, Eudoria_22, Eviarto_21, Fenry_20, Frokostdame_21, Gambino_23, Guacamole_21, Herod_21, Hitter_21, Holliday_23, Hugley_21, Jablanski_24, Jalammah_23, JasperJr_21, JuJu_21, Kamaru_23, KappaFarmDelta_22, Kita_22, Lysidious_22, Madeline_21, Malachai_22, Malibo_23, Malisha_24, Manasvini_22, Maridalia_21, Melba_21, Mellie_20, MintFen_21, MissRona_23, Murp_22, Neobush_22, Nymphadora_21, Obliviate_20, Ohgeesy_21, PCoral7_22, PantheRoc_20, PhrostedPhlake_23, Pipp_21, Posh_24, Pytheas_24, Ruthy_25, Samba_21, Sidious_21, Spooky_23, Squiddly_25, Suscepit_22, Tayonia_22, ThankyouJordi_20, TimTam_21, Toast_22, Trumpet_22, UmaThurman_21, Utz_21, Walrus_23, WelcomeAyanna_20, Whitney_24, William_21, Wisp_20, Wrigley_24, Yeezy_22, Zameen_22, Zarbodnamra_21, ZiggyZoo_20, Zirinka_21,

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

-

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

-

Summary by start number:

Start 16:

- Found in 84 of 84 (100.0%) of genes in pham
- Manual Annotations of this start: 80 of 80
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agueybana_21 (CZ1), AlumE_21 (CZ1), Angelique_23 (CY1), Antonio_22 (CZ1), Archis_22 (CV), Azula_23 (CV), Barco_21 (CV), BatStarr_21 (CZ1), BaxterFox_20 (CZ3), Begonia_22 (CV), Bialota_21 (CZ1), BlingBling_21 (CV), Blino_21 (CV), Blueberry_23 (CV), Bosnia_21 (CZ1), BoyNamedSue_21 (CZ1), Budski_23 (DN), CaptainKirk2_21 (CV), CarolAnn_21 (CV), Clown_45 (DC2), Delian_21 (CV), Eudoria_22 (CZ1), Eviarto_21 (CZ1), Fenry_20 (CV), Frokostdame_21 (CV), Gambino_23 (CV), Guacamole_21 (CV), Herod_21 (CZ1), Hitter_21 (CV), Holliday_23 (DN1), Hugley_21 (CZ1), Jablanski_24 (CY), Jalammah_23 (CV), JasperJr_21 (CV), JuJu_21 (CV), Kamaru_23 (DN1), KappaFarmDelta_22 (CV), Kita_22 (CZ1), Lysidious_22 (CV), Madeline_21 (CZ1), Malachai_22 (CV), Malibo_23 (DW), Malisha_24 (DN), Manasvini_22 (CZ1), Maridalia_21 (CZ1), Melba_21 (CV), Mellie_20 (CV), MintFen_21 (CV), MissRona_23 (CV), Murp_22 (CV), Neobush_22 (CZ1), Nymphadora_21 (CZ1), Obliviate_20 (CV), Ohgeesy_21 (CZ), PCoral7_22 (CV), PantheRoc_20 (CZ3), PhrostedPhlake_23 (CV), Pipp_21 (CV), Posh_24 (CY), Pytheas_24 (CY), Ruthy_25 (DW), Samba_21 (CV), Sidious_21 (CZ7), Spooky_23 (DN2), Squiddly_25 (DN2), Suscepit_22 (CZ1), Tayonia_22 (CZ1), ThankyouJordi_20 (CZ1), TimTam_21 (CZ1), Toast_22 (CV), Trumpet_22 (CZ1), UmaThurman_21 (CV), Utz_21 (CV), Walrus_23 (CV),

WelcomeAyanna_20 (CZ1), Whitney_24 (DN1), William_21 (CV), Wisp_20 (CV), Wrigley_24 (CY), Yeezy_22 (CZ3), Zameen_22 (CZ1), Z̄arbodnamra_21 (CV), ZiggzyZoo_20 (CV), Zirinka_21 (CZ1),

Summary by clusters:

There are 12 clusters represented in this pham: DN, CY1, CZ3, CZ1, CZ7, CZ, CY, DN1, DN2, DW, DC2, CV,

Info for manual annotations of cluster CV:

- Start number 16 was manually annotated 38 times for cluster CV.

Info for manual annotations of cluster CY:

- Start number 16 was manually annotated 4 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 16 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CZ:

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

Info for manual annotations of cluster CZ1:

- Start number 16 was manually annotated 24 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

- Start number 16 was manually annotated 2 times for cluster CZ3.

Info for manual annotations of cluster CZ7:

- Start number 16 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DC2:

- Start number 16 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DN:

- Start number 16 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 16 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 16 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DW:

- Start number 16 was manually annotated 2 times for cluster DW.

Gene Information:

Gene: Agueybana_21 Start: 20174, Stop: 21085, Start Num: 16

Candidate Starts for Agueybana_21:

(1, 19433), (2, 19514), (3, 19523), (4, 19538), (5, 19610), (6, 19676), (7, 19754), (10, 20066), (Start: 16 @20174 has 80 MA's), (19, 20240), (21, 20297), (27, 20435), (28, 20441), (29, 20450), (32, 20543),

(33, 20558), (35, 20615), (37, 20627), (39, 20702), (41, 20795), (43, 20813), (46, 21053),

Gene: AlumE_21 Start: 20173, Stop: 21084, Start Num: 16

Candidate Starts for AlumE_21:

(10, 20065), (Start: 16 @20173 has 80 MA's), (19, 20239), (21, 20296), (27, 20434), (28, 20440), (33, 20557), (37, 20626), (39, 20701), (41, 20794), (46, 21052),

Gene: Angelique_23 Start: 20524, Stop: 21435, Start Num: 16

Candidate Starts for Angelique_23:

(10, 20413), (Start: 16 @20524 has 80 MA's), (18, 20566), (19, 20590), (26, 20752), (27, 20785), (28, 20791), (33, 20908), (37, 20977), (38, 20992), (39, 21052), (41, 21145), (42, 21157), (46, 21403),

Gene: Antonio_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Antonio_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Archis_22 Start: 19231, Stop: 20142, Start Num: 16

Candidate Starts for Archis_22:

(Start: 16 @19231 has 80 MA's), (19, 19297), (25, 19456), (27, 19492), (28, 19498), (33, 19615), (37, 19684), (39, 19759), (41, 19852), (42, 19864), (46, 20110),

Gene: Azula_23 Start: 19335, Stop: 20246, Start Num: 16

Candidate Starts for Azula_23:

(Start: 16 @19335 has 80 MA's), (19, 19401), (24, 19503), (25, 19560), (27, 19596), (28, 19602), (33, 19719), (37, 19788), (39, 19863), (41, 19956), (46, 20214),

Gene: Barco_21 Start: 19020, Stop: 19931, Start Num: 16

Candidate Starts for Barco_21:

(Start: 16 @19020 has 80 MA's), (19, 19086), (25, 19245), (27, 19281), (28, 19287), (33, 19404), (37, 19473), (39, 19548), (41, 19641), (42, 19653), (46, 19899),

Gene: BatStarr_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for BatStarr_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: BaxterFox_20 Start: 19500, Stop: 20411, Start Num: 16

Candidate Starts for BaxterFox_20:

(2, 18840), (3, 18849), (4, 18864), (5, 18936), (6, 19002), (7, 19080), (10, 19392), (Start: 16 @19500 has 80 MA's), (19, 19566), (21, 19623), (27, 19761), (28, 19767), (29, 19776), (32, 19869), (33, 19884), (35, 19941), (37, 19953), (39, 20028), (41, 20121), (46, 20379),

Gene: Begonia_22 Start: 19498, Stop: 20412, Start Num: 16

Candidate Starts for Begonia_22:

(Start: 16 @19498 has 80 MA's), (19, 19564), (25, 19723), (27, 19759), (28, 19765), (33, 19882), (37, 19951), (39, 20026), (41, 20119), (46, 20380),

Gene: Bialota_21 Start: 20173, Stop: 21084, Start Num: 16

Candidate Starts for Bialota_21:

(10, 20065), (Start: 16 @20173 has 80 MA's), (19, 20239), (21, 20296), (27, 20434), (28, 20440), (29, 20449), (32, 20542), (33, 20557), (35, 20614), (39, 20701), (41, 20794), (46, 21052),

Gene: BlingBling_21 Start: 19020, Stop: 19931, Start Num: 16

Candidate Starts for BlingBling_21:

(Start: 16 @19020 has 80 MA's), (19, 19086), (25, 19245), (27, 19281), (28, 19287), (33, 19404), (37, 19473), (39, 19548), (41, 19641), (42, 19653), (46, 19899),

Gene: Blino_21 Start: 18988, Stop: 19899, Start Num: 16

Candidate Starts for Blino_21:

(Start: 16 @18988 has 80 MA's), (19, 19054), (27, 19249), (28, 19255), (33, 19372), (37, 19441), (39, 19516), (41, 19609), (42, 19621), (46, 19867),

Gene: Blueberry_23 Start: 19335, Stop: 20246, Start Num: 16

Candidate Starts for Blueberry_23:

(Start: 16 @19335 has 80 MA's), (19, 19401), (24, 19503), (25, 19560), (27, 19596), (28, 19602), (33, 19719), (37, 19788), (39, 19863), (41, 19956), (46, 20214),

Gene: Bosnia_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for Bosnia_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: BoyNamedSue_21 Start: 20173, Stop: 21084, Start Num: 16

Candidate Starts for BoyNamedSue_21:

(10, 20065), (Start: 16 @20173 has 80 MA's), (19, 20239), (21, 20296), (27, 20434), (28, 20440), (33, 20557), (37, 20626), (39, 20701), (41, 20794), (46, 21052),

Gene: Budski_23 Start: 19385, Stop: 20299, Start Num: 16

Candidate Starts for Budski_23:

(Start: 16 @19385 has 80 MA's), (19, 19451), (25, 19610), (27, 19646), (28, 19652), (31, 19742), (33, 19769), (37, 19838), (39, 19913), (41, 20006), (44, 20075), (46, 20267),

Gene: CaptainKirk2_21 Start: 19041, Stop: 19952, Start Num: 16

Candidate Starts for CaptainKirk2_21:

(Start: 16 @19041 has 80 MA's), (19, 19107), (25, 19266), (27, 19302), (28, 19308), (33, 19425), (37, 19494), (39, 19569), (41, 19662), (46, 19920),

Gene: CarolAnn_21 Start: 18987, Stop: 19898, Start Num: 16

Candidate Starts for CarolAnn_21:

(Start: 16 @18987 has 80 MA's), (19, 19053), (27, 19248), (28, 19254), (33, 19371), (37, 19440), (39, 19515), (41, 19608), (42, 19620), (46, 19866),

Gene: Clown_45 Start: 36252, Stop: 37166, Start Num: 16

Candidate Starts for Clown_45:

(10, 36141), (Start: 16 @36252 has 80 MA's), (19, 36318), (20, 36348), (23, 36411), (27, 36513), (28, 36519), (30, 36582), (31, 36609), (32, 36621), (33, 36636), (36, 36702), (39, 36780), (41, 36873), (44, 36942), (46, 37134),

Gene: Delian_21 Start: 19041, Stop: 19952, Start Num: 16

Candidate Starts for Delian_21:

(Start: 16 @19041 has 80 MA's), (19, 19107), (25, 19266), (27, 19302), (28, 19308), (33, 19425), (37, 19494), (39, 19569), (41, 19662), (46, 19920),

Gene: Eudoria_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Eudoria_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Eviarto_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for Eviarto_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: Fenry_20 Start: 18739, Stop: 19650, Start Num: 16

Candidate Starts for Fenry_20:

(Start: 16 @18739 has 80 MA's), (19, 18805), (27, 19000), (28, 19006), (33, 19123), (37, 19192), (39, 19267), (41, 19360), (46, 19618),

Gene: Frokostdame_21 Start: 18989, Stop: 19900, Start Num: 16

Candidate Starts for Frokostdame_21:

(Start: 16 @18989 has 80 MA's), (19, 19055), (25, 19214), (27, 19250), (28, 19256), (33, 19373), (37, 19442), (39, 19517), (41, 19610), (46, 19868),

Gene: Gambino_23 Start: 19335, Stop: 20246, Start Num: 16

Candidate Starts for Gambino_23:

(Start: 16 @19335 has 80 MA's), (19, 19401), (24, 19503), (25, 19560), (27, 19596), (28, 19602), (33, 19719), (37, 19788), (39, 19863), (41, 19956), (46, 20214),

Gene: Guacamole_21 Start: 19024, Stop: 19935, Start Num: 16

Candidate Starts for Guacamole_21:

(Start: 16 @19024 has 80 MA's), (19, 19090), (25, 19249), (27, 19285), (28, 19291), (33, 19408), (37, 19477), (39, 19552), (41, 19645), (42, 19657), (46, 19903),

Gene: Herod_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for Herod_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: Hitter_21 Start: 19020, Stop: 19931, Start Num: 16

Candidate Starts for Hitter_21:

(Start: 16 @19020 has 80 MA's), (19, 19086), (25, 19245), (27, 19281), (28, 19287), (33, 19404), (37, 19473), (39, 19548), (41, 19641), (46, 19899),

Gene: Holliday_23 Start: 19385, Stop: 20299, Start Num: 16

Candidate Starts for Holliday_23:

(Start: 16 @19385 has 80 MA's), (19, 19451), (25, 19610), (27, 19646), (28, 19652), (31, 19742), (33, 19769), (37, 19838), (39, 19913), (41, 20006), (44, 20075), (46, 20267),

Gene: Hugley_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for Hugley_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: Jablanski_24 Start: 20700, Stop: 21611, Start Num: 16

Candidate Starts for Jablanski_24:

(Start: 16 @20700 has 80 MA's), (19, 20766), (25, 20925), (26, 20928), (27, 20961), (28, 20967), (33, 21084), (37, 21153), (39, 21228), (41, 21321), (46, 21579),

Gene: Jalammah_23 Start: 19814, Stop: 20725, Start Num: 16

Candidate Starts for Jalammah_23:

(Start: 16 @19814 has 80 MA's), (19, 19880), (25, 20039), (27, 20075), (28, 20081), (33, 20198), (37, 20267), (39, 20342), (41, 20435), (46, 20693),

Gene: JasperJr_21 Start: 19024, Stop: 19935, Start Num: 16

Candidate Starts for JasperJr_21:

(Start: 16 @19024 has 80 MA's), (19, 19090), (25, 19249), (27, 19285), (28, 19291), (33, 19408), (37, 19477), (39, 19552), (41, 19645), (42, 19657), (46, 19903),

Gene: JuJu_21 Start: 18942, Stop: 19853, Start Num: 16

Candidate Starts for JuJu_21:

(2, 18282), (3, 18291), (4, 18306), (5, 18378), (6, 18444), (10, 18834), (13, 18873), (Start: 16 @18942 has 80 MA's), (19, 19008), (25, 19167), (26, 19170), (27, 19203), (28, 19209), (31, 19299), (33, 19326), (37, 19395), (39, 19470), (41, 19563), (46, 19821),

Gene: Kamaru_23 Start: 19385, Stop: 20299, Start Num: 16

Candidate Starts for Kamaru_23:

(Start: 16 @19385 has 80 MA's), (19, 19451), (25, 19610), (27, 19646), (28, 19652), (31, 19742), (33, 19769), (37, 19838), (39, 19913), (41, 20006), (44, 20075), (46, 20267),

Gene: KappaFarmDelta_22 Start: 19388, Stop: 20299, Start Num: 16

Candidate Starts for KappaFarmDelta_22:

(Start: 16 @19388 has 80 MA's), (17, 19427), (18, 19430), (19, 19454), (25, 19613), (27, 19649), (28, 19655), (31, 19745), (33, 19772), (39, 19916), (41, 20009), (44, 20075), (46, 20267),

Gene: Kita_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Kita_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Lysidious_22 Start: 19544, Stop: 20455, Start Num: 16

Candidate Starts for Lysidious_22:

(Start: 16 @19544 has 80 MA's), (19, 19610), (25, 19769), (27, 19805), (28, 19811), (33, 19928), (37, 19997), (39, 20072), (41, 20165), (46, 20423),

Gene: Madeline_21 Start: 20459, Stop: 21370, Start Num: 16

Candidate Starts for Madeline_21:

(10, 20351), (Start: 16 @20459 has 80 MA's), (19, 20525), (21, 20582), (27, 20720), (28, 20726), (29, 20735), (32, 20828), (33, 20843), (35, 20900), (37, 20912), (39, 20987), (41, 21080), (46, 21338),

Gene: Malachai_22 Start: 19498, Stop: 20412, Start Num: 16

Candidate Starts for Malachai_22:

(Start: 16 @19498 has 80 MA's), (19, 19564), (25, 19723), (27, 19759), (28, 19765), (33, 19882), (37, 19951), (39, 20026), (41, 20119), (46, 20380),

Gene: Malibo_23 Start: 19343, Stop: 20254, Start Num: 16

Candidate Starts for Malibo_23:

(Start: 16 @19343 has 80 MA's), (19, 19409), (27, 19604), (28, 19610), (33, 19727), (37, 19796), (38, 19811), (39, 19871), (41, 19964), (46, 20222),

Gene: Malisha_24 Start: 21166, Stop: 22080, Start Num: 16

Candidate Starts for Malisha_24:

(Start: 16 @21166 has 80 MA's), (19, 21232), (22, 21301), (25, 21391), (27, 21427), (28, 21433), (31, 21523), (33, 21550), (37, 21619), (39, 21694), (41, 21787), (44, 21856), (46, 22048),

Gene: Manasvini_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Manasvini_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Maridalia_21 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Maridalia_21:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Melba_21 Start: 19020, Stop: 19931, Start Num: 16

Candidate Starts for Melba_21:

(Start: 16 @19020 has 80 MA's), (19, 19086), (25, 19245), (27, 19281), (28, 19287), (33, 19404), (37, 19473), (39, 19548), (41, 19641), (42, 19653), (46, 19899),

Gene: Mellie_20 Start: 18781, Stop: 19692, Start Num: 16

Candidate Starts for Mellie_20:

(Start: 16 @18781 has 80 MA's), (19, 18847), (25, 19006), (27, 19042), (28, 19048), (33, 19165), (37, 19234), (39, 19309), (41, 19402), (46, 19660),

Gene: MintFen_21 Start: 19020, Stop: 19931, Start Num: 16

Candidate Starts for MintFen_21:

(Start: 16 @19020 has 80 MA's), (19, 19086), (25, 19245), (27, 19281), (28, 19287), (33, 19404), (37, 19473), (39, 19548), (41, 19641), (42, 19653), (46, 19899),

Gene: MissRona_23 Start: 19335, Stop: 20246, Start Num: 16

Candidate Starts for MissRona_23:

(Start: 16 @19335 has 80 MA's), (19, 19401), (24, 19503), (25, 19560), (27, 19596), (28, 19602), (33, 19719), (37, 19788), (39, 19863), (41, 19956), (46, 20214),

Gene: Murp_22 Start: 19288, Stop: 20199, Start Num: 16

Candidate Starts for Murp_22:

(Start: 16 @19288 has 80 MA's), (17, 19327), (19, 19354), (25, 19513), (27, 19549), (28, 19555), (31, 19645), (33, 19672), (39, 19816), (41, 19909), (46, 20167),

Gene: Neobush_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Neobush_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Nymphadora_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for Nymphadora_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: Obliviate_20 Start: 18810, Stop: 19721, Start Num: 16

Candidate Starts for Obliviate_20:

(Start: 16 @18810 has 80 MA's), (19, 18876), (25, 19035), (27, 19071), (28, 19077), (33, 19194), (37, 19263), (39, 19338), (41, 19431), (45, 19539), (46, 19689),

Gene: Ohgeesy_21 Start: 19784, Stop: 20695, Start Num: 16

Candidate Starts for Ohgeesy_21:

(10, 19676), (Start: 16 @19784 has 80 MA's), (19, 19850), (21, 19907), (27, 20045), (28, 20051), (29, 20060), (32, 20153), (33, 20168), (35, 20225), (37, 20237), (39, 20312), (41, 20405), (46, 20663),

Gene: PCoral7_22 Start: 19309, Stop: 20226, Start Num: 16

Candidate Starts for PCoral7_22:

(Start: 16 @19309 has 80 MA's), (19, 19375), (27, 19570), (28, 19576), (34, 19723), (37, 19759), (39, 19834), (41, 19930),

Gene: PantheRoc_20 Start: 19492, Stop: 20403, Start Num: 16

Candidate Starts for PantheRoc_20:

(2, 18832), (3, 18841), (4, 18856), (5, 18928), (6, 18994), (7, 19072), (10, 19384), (Start: 16 @19492 has 80 MA's), (19, 19558), (21, 19615), (27, 19753), (28, 19759), (29, 19768), (32, 19861), (33, 19876), (35, 19933), (37, 19945), (39, 20020), (41, 20113), (46, 20371),

Gene: PhrostedPhlake_23 Start: 19713, Stop: 20624, Start Num: 16

Candidate Starts for PhrostedPhlake_23:

(11, 19599), (14, 19656), (15, 19698), (Start: 16 @19713 has 80 MA's), (19, 19779), (25, 19938), (27, 19974), (28, 19980), (33, 20097), (37, 20166), (39, 20241), (41, 20334), (46, 20592),

Gene: Pipp_21 Start: 19014, Stop: 19925, Start Num: 16

Candidate Starts for Pipp_21:

(Start: 16 @19014 has 80 MA's), (19, 19080), (25, 19239), (27, 19275), (28, 19281), (33, 19398), (37, 19467), (39, 19542), (41, 19635), (46, 19893),

Gene: Posh_24 Start: 20553, Stop: 21464, Start Num: 16

Candidate Starts for Posh_24:

(Start: 16 @20553 has 80 MA's), (19, 20619), (25, 20778), (26, 20781), (27, 20814), (28, 20820), (33, 20937), (39, 21081), (41, 21174), (46, 21432),

Gene: Pytheas_24 Start: 20699, Stop: 21610, Start Num: 16

Candidate Starts for Pytheas_24:

(Start: 16 @20699 has 80 MA's), (19, 20765), (25, 20924), (26, 20927), (27, 20960), (28, 20966), (33, 21083), (37, 21152), (39, 21227), (41, 21320), (46, 21578),

Gene: Ruthy_25 Start: 22394, Stop: 23305, Start Num: 16

Candidate Starts for Ruthy_25:

(Start: 16 @22394 has 80 MA's), (19, 22460), (27, 22655), (28, 22661), (31, 22751), (33, 22778), (37, 22847), (39, 22922), (41, 23015), (46, 23273),

Gene: Samba_21 Start: 19098, Stop: 20009, Start Num: 16

Candidate Starts for Samba_21:

(Start: 16 @19098 has 80 MA's), (19, 19164), (25, 19323), (27, 19359), (28, 19365), (33, 19482), (37, 19551), (39, 19626), (41, 19719), (46, 19977),

Gene: Sidious_21 Start: 19616, Stop: 20527, Start Num: 16

Candidate Starts for Sidious_21:

(10, 19505), (13, 19544), (Start: 16 @19616 has 80 MA's), (19, 19682), (25, 19841), (27, 19877), (28, 19883), (31, 19973), (33, 20000), (37, 20069), (39, 20144), (41, 20237), (46, 20495),

Gene: Spooky_23 Start: 19375, Stop: 20289, Start Num: 16

Candidate Starts for Spooky_23:

(Start: 16 @19375 has 80 MA's), (19, 19441), (22, 19510), (25, 19600), (27, 19636), (28, 19642), (31, 19732), (33, 19759), (37, 19828), (39, 19903), (41, 19996), (44, 20065), (46, 20257),

Gene: Squiddly_25 Start: 20787, Stop: 21701, Start Num: 16

Candidate Starts for Squiddly_25:

(Start: 16 @20787 has 80 MA's), (19, 20853), (22, 20922), (25, 21012), (27, 21048), (28, 21054), (31, 21144), (33, 21171), (37, 21240), (39, 21315), (41, 21408), (44, 21477), (46, 21669),

Gene: Suscepit_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Suscepit_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Tayonia_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Tayonia_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: ThankyouJordi_20 Start: 20133, Stop: 21047, Start Num: 16

Candidate Starts for ThankyouJordi_20:

(10, 20022), (Start: 16 @20133 has 80 MA's), (17, 20172), (19, 20199), (27, 20397), (28, 20403), (33, 20520), (39, 20664), (40, 20709), (41, 20757), (46, 21015),

Gene: TimTam_21 Start: 20161, Stop: 21072, Start Num: 16

Candidate Starts for TimTam_21:

(10, 20053), (Start: 16 @20161 has 80 MA's), (19, 20227), (21, 20284), (27, 20422), (28, 20428), (29, 20437), (32, 20530), (33, 20545), (35, 20602), (37, 20614), (39, 20689), (41, 20782), (46, 21040),

Gene: Toast_22 Start: 19309, Stop: 20226, Start Num: 16

Candidate Starts for Toast_22:

(Start: 16 @19309 has 80 MA's), (19, 19375), (27, 19570), (28, 19576), (34, 19723), (37, 19759), (39, 19834), (41, 19930),

Gene: Trumpet_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Trumpet_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: UmaThurman_21 Start: 19145, Stop: 20056, Start Num: 16

Candidate Starts for UmaThurman_21:

(Start: 16 @19145 has 80 MA's), (19, 19211), (25, 19370), (27, 19406), (28, 19412), (33, 19529), (37, 19598), (39, 19673), (41, 19766), (46, 20024),

Gene: Utz_21 Start: 19015, Stop: 19926, Start Num: 16

Candidate Starts for Utz_21:

(Start: 16 @19015 has 80 MA's), (19, 19081), (25, 19240), (27, 19276), (28, 19282), (33, 19399), (37, 19468), (39, 19543), (41, 19636), (42, 19648), (46, 19894),

Gene: Walrus_23 Start: 19560, Stop: 20471, Start Num: 16

Candidate Starts for Walrus_23:

(8, 19353), (9, 19362), (11, 19446), (14, 19503), (15, 19545), (Start: 16 @19560 has 80 MA's), (19, 19626), (25, 19785), (27, 19821), (28, 19827), (33, 19944), (37, 20013), (39, 20088), (41, 20181), (46, 20439),

Gene: WelcomeAyanna_20 Start: 20133, Stop: 21047, Start Num: 16

Candidate Starts for WelcomeAyanna_20:

(10, 20022), (Start: 16 @20133 has 80 MA's), (17, 20172), (19, 20199), (27, 20397), (28, 20403), (33, 20520), (39, 20664), (40, 20709), (41, 20757), (46, 21015),

Gene: Whitney_24 Start: 20189, Stop: 21103, Start Num: 16

Candidate Starts for Whitney_24:

(Start: 16 @20189 has 80 MA's), (19, 20255), (25, 20414), (27, 20450), (28, 20456), (31, 20546), (33, 20573), (37, 20642), (39, 20717), (41, 20810), (44, 20879), (46, 21071),

Gene: William_21 Start: 19064, Stop: 19978, Start Num: 16

Candidate Starts for William_21:

(Start: 16 @19064 has 80 MA's), (19, 19130), (24, 19232), (27, 19325), (28, 19331), (37, 19514), (39, 19589), (41, 19682),

Gene: Wisp_20 Start: 18730, Stop: 19641, Start Num: 16

Candidate Starts for Wisp_20:

(Start: 16 @18730 has 80 MA's), (19, 18796), (25, 18955), (27, 18991), (28, 18997), (33, 19114), (37, 19183), (39, 19258), (41, 19351), (46, 19609),

Gene: Wrigley_24 Start: 20450, Stop: 21361, Start Num: 16

Candidate Starts for Wrigley_24:

(Start: 16 @20450 has 80 MA's), (19, 20516), (25, 20675), (26, 20678), (27, 20711), (28, 20717), (33, 20834), (39, 20978), (41, 21071), (46, 21329),

Gene: Yeezy_22 Start: 19516, Stop: 20427, Start Num: 16

Candidate Starts for Yeezy_22:

(2, 18856), (3, 18865), (4, 18880), (5, 18952), (6, 19018), (7, 19096), (10, 19408), (Start: 16 @19516 has 80 MA's), (19, 19582), (21, 19639), (27, 19777), (28, 19783), (29, 19792), (32, 19885), (33, 19900), (35, 19957), (37, 19969), (39, 20044), (41, 20137), (46, 20395),

Gene: Zameen_22 Start: 20294, Stop: 21205, Start Num: 16

Candidate Starts for Zameen_22:

(12, 20198), (Start: 16 @20294 has 80 MA's), (19, 20360), (22, 20429), (25, 20519), (27, 20555), (28, 20561), (29, 20570), (32, 20663), (33, 20678), (35, 20735), (37, 20747), (39, 20822), (41, 20915), (46, 21173),

Gene: Zarbodnamra_21 Start: 19019, Stop: 19930, Start Num: 16

Candidate Starts for Zarbodnamra_21:

(Start: 16 @19019 has 80 MA's), (19, 19085), (25, 19244), (27, 19280), (28, 19286), (33, 19403), (37, 19472), (39, 19547), (41, 19640), (42, 19652), (46, 19898),

Gene: ZiggyZoo_20 Start: 18810, Stop: 19721, Start Num: 16

Candidate Starts for ZiggyZoo_20:

(Start: 16 @18810 has 80 MA's), (19, 18876), (25, 19035), (27, 19071), (28, 19077), (33, 19194), (37, 19263), (39, 19338), (41, 19431), (45, 19539), (46, 19689),

Gene: Zirinka_21 Start: 20173, Stop: 21084, Start Num: 16

Candidate Starts for Zirinka_21:

(10, 20065), (Start: 16 @20173 has 80 MA's), (19, 20239), (21, 20296), (27, 20434), (28, 20440), (29, 20449), (32, 20542), (33, 20557), (35, 20614), (37, 20626), (39, 20701), (41, 20794), (46, 21052),