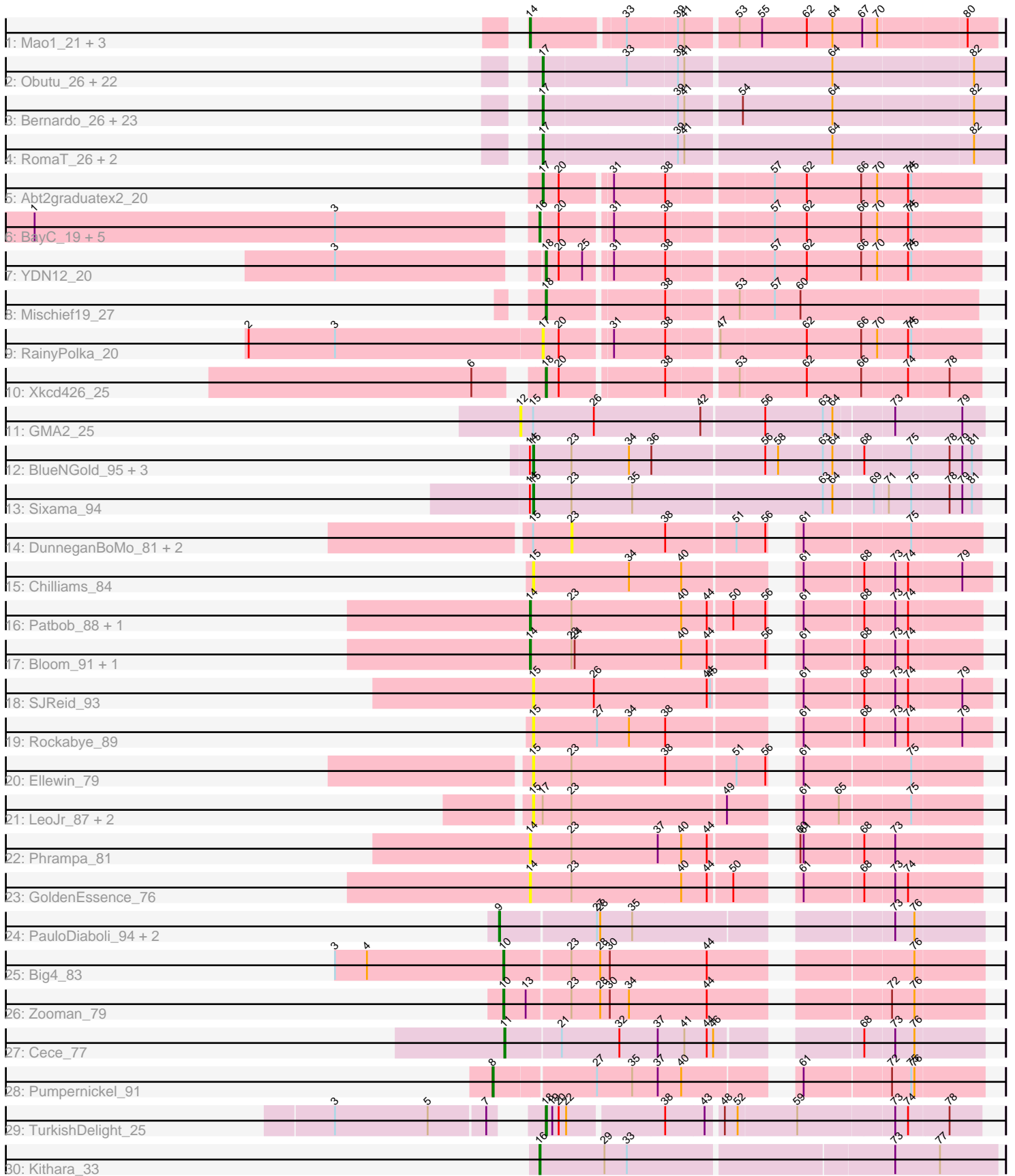


Pham 202835



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 202835 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202835 has 96 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Mao1_21, Mask_22, Sejanus_22, Dori_22
- Track 2 : Obutu_26, RagingRooster_26, OrangeOswald_26, ChaChing_26, Phayeta_26, Athena_27, SwainyDoc_26, Devonte_26, Glubnar_26, Neos5_26, Rita1961_26, SynergyX_26, LestyG_26, Philly_25, Yinz_26, Chandler_26, Compostia_27, Corofin_26, Casbah_25, Abinghost_26, Deenasa_26, Nozo_26, Kamiyu_26
- Track 3 : Bernardo_26, GlenHope_27, Tydolla_26, Gervas_26, SlippinJimmy_26, Baloo_26, Briakila_26, Morty007_26, Chentzyk_25, Audrey_26, Phlyer_26, Pipefish_26, Mortcellus_25, Marley1013_26, Ben11_25, TinyTerror_26, Heathcliff_26, Akoma_26, Kronus_25, Yahalom_26, Halfpint_25, MmasiCarm_26, Chalmers_26, Gadjet_27
- Track 4 : RomaT_26, Daisy_26, HarveySr_26
- Track 5 : Abt2graduatex2_20
- Track 6 : BayC_19, TP1604_19, Salete_19, BabyGotBac_19, Maih_19, Asis_19
- Track 7 : YDN12_20
- Track 8 : Mischief19_27
- Track 9 : RainyPolka_20
- Track 10 : Xkcd426_25
- Track 11 : GMA2_25
- Track 12 : BlueNGold_95, Forza_96, Boopy_96, Mareelih_94
- Track 13 : Sixama_94
- Track 14 : DunneganBoMo_81, KSunshine22_82, WaddleDee_81
- Track 15 : Chilliams_84
- Track 16 : Patbob_88, Talia1610_87
- Track 17 : Bloom_91, Racecar_88
- Track 18 : SJReid_93
- Track 19 : Rockabye_89
- Track 20 : Ellewin_79
- Track 21 : LeoJr_87, Atuin_85, ReginaGlobina_87
- Track 22 : Phrampa_81
- Track 23 : GoldenEssence_76
- Track 24 : PauloDiaboli_94, A3Wally_94, Dodo_94
- Track 25 : Big4_83
- Track 26 : Zooman_79
- Track 27 : Cece_77
- Track 28 : Pumpernickel_91
- Track 29 : TurkishDelight_25

- Track 30 : Kithara_33

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

The start number called the most often in the published annotations is 17, it was called in 44 of the 72 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_26, Abt2graduatex2_20, Akoma_26, Athena_27, Audrey_26, Baloo_26, Ben11_25, Bernardo_26, Briakila_26, Casbah_25, ChaChing_26, Chalmers_26, Chandler_26, Chentzyk_25, Compostia_27, Corofin_26, Daisy_26, Deenasa_26, Devonte_26, Gadget_27, Gervas_26, GlenHope_27, Glubnar_26, Halfpint_25, HarveySr_26, Heathcliff_26, Kamiyu_26, Kronus_25, LestyG_26, Marley1013_26, MmasiCarm_26, Mortcellus_25, Morty007_26, Neos5_26, Nozo_26, Obutu_26, OrangeOswald_26, Phayeta_26, Philly_25, Phlyer_26, Pipefish_26, RagingRooster_26, RainyPolka_20, Rita1961_26, RomaT_26, SlippinJimmy_26, SwainyDoc_26, SynergyX_26, TinyTerror_26, Tydolla_26, Yahalom_26, Yinz_26,

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

- Atuin_85, LeoJr_87, ReginaGlobina_87,

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

- A3Wally_94, Asis_19, BabyGotBac_19, BayC_19, Big4_83, Bloom_91, BlueNGold_95, Boopy_96, Cece_77, Chilliams_84, Dodo_94, Dori_22, DunneganBoMo_81, Ellewin_79, Forza_96, GMA2_25, GoldenEssence_76, KSunshine22_82, Kithara_33, Maih_19, Mao1_21, Mareelih_94, Mask_22, Mischief19_27, Patbob_88, PauloDiaboli_94, Phrampa_81, Pumpernickel_91, Racecar_88, Rockabye_89, SJReid_93, Salete_19, Sejanus_22, Sixama_94, TP1604_19, Talia1610_87, TurkishDelight_25, WaddleDee_81, Xkcd426_25, YDN12_20, Zooman_79,

Summary by start number:

Start 8:

- Found in 1 of 96 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pumpernickel_91 (GD4),

Start 9:

- Found in 3 of 96 (3.1%) of genes in pham
- Manual Annotations of this start: 2 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally_94 (GD1), Dodo_94 (GD1), PauloDiaboli_94 (GD1),

Start 10:

- Found in 2 of 96 (2.1%) of genes in pham
- Manual Annotations of this start: 2 of 72
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Big4_83 (GD2), Zooman_79 (GD2),

Start 11:

- Found in 1 of 96 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cece_77 (GD3),

Start 12:

- Found in 1 of 96 (1.0%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA2_25 (DS),

Start 14:

- Found in 15 of 96 (15.6%) of genes in pham
- Manual Annotations of this start: 6 of 72
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Bloom_91 (FC), Dori_22 (AD), GoldenEssence_76 (FC), Mao1_21 (AD), Mask_22 (AD), Patbob_88 (FC), Phrampa_81 (FC), Racecar_88 (FC), Sejanus_22 (AD), Talia1610_87 (FC),

Start 15:

- Found in 16 of 96 (16.7%) of genes in pham
- Manual Annotations of this start: 5 of 72
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Atuin_85 (FC), BlueNGold_95 (DS), Boopy_96 (DS), Chilliama_84 (FC), Ellewin_79 (FC), Forza_96 (DS), LeoJr_87 (FC), Marelih_94 (DS), ReginaGlobina_87 (FC), Rockabye_89 (FC), SJReid_93 (FC), Sixama_94 (DS),

Start 16:

- Found in 7 of 96 (7.3%) of genes in pham
- Manual Annotations of this start: 7 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asis_19 (BG), BabyGotBac_19 (BG), BayC_19 (BG), Kithara_33 (singleton), Maih_19 (BG), Salete_19 (BG), TP1604_19 (BG),

Start 17:

- Found in 55 of 96 (57.3%) of genes in pham
- Manual Annotations of this start: 44 of 72
- Called 94.5% of time when present
- Phage (with cluster) where this start called: Abinghost_26 (B3), Abt2graduatex2_20 (BG), Akoma_26 (B3), Athena_27 (B3), Audrey_26 (B3), Baloo_26 (B3), Ben11_25 (B3), Bernardo_26 (B3), Briakila_26 (B3), Casbah_25 (B3), ChaChing_26 (B3), Chalmers_26 (B3), Chandler_26 (B3), Chentzyk_25 (B3), Compostia_27 (B3), Corofin_26 (B3), Daisy_26 (B3), Deenasa_26 (B3), Devonte_26 (B3), Gadget_27 (B3), Gervas_26 (B3), GlenHope_27 (B3), Glubnar_26 (B3), Halfpint_25 (B3), HarveySr_26 (B3), Heathcliff_26 (B3), Kamiyu_26 (B3), Kronus_25 (B3), LestyG_26 (B3), Marley1013_26 (B3), MmasiCarm_26 (B3), Mortcellus_25 (B3), Morty007_26 (B3), Neos5_26 (B3), Nozo_26 (B3), Obutu_26 (B3), OrangeOswald_26 (B3), Phayeta_26 (B3), Philly_25 (B3), Phlyer_26 (B3), Pipefish_26 (B3), RagingRooster_26 (B3),

RainyPolka_20 (BG), Rita1961_26 (B3), RomaT_26 (B3), SlippinJimmy_26 (B3), SwainyDoc_26 (B3), SynergyX_26 (B3), TinyTerror_26 (B3), Tydolla_26 (B3), Yahalom_26 (B3), Yinz_26 (B3),

Start 18:

- Found in 4 of 96 (4.2%) of genes in pham
- Manual Annotations of this start: 4 of 72
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mischief19_27 (BG), TurkishDelight_25 (singleton), Xkcd426_25 (BG), YDN12_20 (BG),

Start 23:

- Found in 20 of 96 (20.8%) of genes in pham
- No Manual Annotations of this start.
- Called 15.0% of time when present
- Phage (with cluster) where this start called: DunneganBoMo_81 (FC), KSunshine22_82 (FC), WaddleDee_81 (FC),

Summary by clusters:

There are 10 clusters represented in this pham: GD1, GD2, BG, GD4, AD, singleton, FC, B3, GD3, DS,

Info for manual annotations of cluster AD:

- Start number 14 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster B3:

- Start number 17 was manually annotated 43 times for cluster B3.

Info for manual annotations of cluster BG:

- Start number 16 was manually annotated 6 times for cluster BG.
- Start number 17 was manually annotated 1 time for cluster BG.
- Start number 18 was manually annotated 3 times for cluster BG.

Info for manual annotations of cluster DS:

- Start number 15 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster FC:

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

Info for manual annotations of cluster GD1:

- Start number 9 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 10 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 11 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 8 was manually annotated 1 time for cluster GD4.

Gene Information:

Gene: A3Wally_94 Start: 50689, Stop: 51099, Start Num: 9

Candidate Starts for A3Wally_94:

(Start: 9 @50689 has 2 MA's), (27, 50776), (28, 50779), (35, 50809), (73, 51019), (76, 51037),

Gene: Abinghost_26 Start: 19363, Stop: 19776, Start Num: 17

Candidate Starts for Abinghost_26:

(Start: 17 @19363 has 44 MA's), (33, 19438), (39, 19483), (41, 19489), (64, 19621), (82, 19747),

Gene: Abt2graduatex2_20 Start: 19744, Stop: 20124, Start Num: 17

Candidate Starts for Abt2graduatex2_20:

(Start: 17 @19744 has 44 MA's), (20, 19759), (31, 19801), (38, 19846), (57, 19936), (62, 19966), (66, 20017), (70, 20032), (74, 20059), (75, 20062),

Gene: Akoma_26 Start: 19364, Stop: 19777, Start Num: 17

Candidate Starts for Akoma_26:

(Start: 17 @19364 has 44 MA's), (39, 19484), (41, 19490), (54, 19538), (64, 19622), (82, 19748),

Gene: Asis_19 Start: 19235, Stop: 19615, Start Num: 16

Candidate Starts for Asis_19:

(1, 18785), (3, 19067), (Start: 16 @19235 has 7 MA's), (20, 19250), (31, 19292), (38, 19337), (57, 19427), (62, 19457), (66, 19508), (70, 19523), (74, 19550), (75, 19553),

Gene: Athena_27 Start: 20126, Stop: 20539, Start Num: 17

Candidate Starts for Athena_27:

(Start: 17 @20126 has 44 MA's), (33, 20201), (39, 20246), (41, 20252), (64, 20384), (82, 20510),

Gene: Atuin_85 Start: 52030, Stop: 52410, Start Num: 15

Candidate Starts for Atuin_85:

(Start: 15 @52030 has 5 MA's), (Start: 17 @52039 has 44 MA's), (23, 52066), (49, 52207), (61, 52252), (65, 52285), (75, 52348),

Gene: Audrey_26 Start: 19363, Stop: 19776, Start Num: 17

Candidate Starts for Audrey_26:

(Start: 17 @19363 has 44 MA's), (39, 19483), (41, 19489), (54, 19537), (64, 19621), (82, 19747),

Gene: BabyGotBac_19 Start: 19235, Stop: 19615, Start Num: 16

Candidate Starts for BabyGotBac_19:

(1, 18785), (3, 19067), (Start: 16 @19235 has 7 MA's), (20, 19250), (31, 19292), (38, 19337), (57, 19427), (62, 19457), (66, 19508), (70, 19523), (74, 19550), (75, 19553),

Gene: Baloo_26 Start: 19363, Stop: 19776, Start Num: 17

Candidate Starts for Baloo_26:

(Start: 17 @19363 has 44 MA's), (39, 19483), (41, 19489), (54, 19537), (64, 19621), (82, 19747),

Gene: BayC_19 Start: 19235, Stop: 19615, Start Num: 16

Candidate Starts for BayC_19:

(1, 18785), (3, 19067), (Start: 16 @19235 has 7 MA's), (20, 19250), (31, 19292), (38, 19337), (57, 19427), (62, 19457), (66, 19508), (70, 19523), (74, 19550), (75, 19553),

Gene: Ben11_25 Start: 19185, Stop: 19598, Start Num: 17

Candidate Starts for Ben11_25:

(Start: 17 @19185 has 44 MA's), (39, 19305), (41, 19311), (54, 19359), (64, 19443), (82, 19569),

Gene: Bernardo_26 Start: 19363, Stop: 19776, Start Num: 17

Candidate Starts for Bernardo_26:

(Start: 17 @19363 has 44 MA's), (39, 19483), (41, 19489), (54, 19537), (64, 19621), (82, 19747),

Gene: Big4_83 Start: 49711, Stop: 50121, Start Num: 10

Candidate Starts for Big4_83:

(3, 49555), (4, 49585), (Start: 10 @49711 has 2 MA's), (23, 49771), (28, 49798), (30, 49807), (44, 49897), (76, 50059),

Gene: Bloom_91 Start: 53421, Stop: 53804, Start Num: 14

Candidate Starts for Bloom_91:

(Start: 14 @53421 has 6 MA's), (23, 53460), (24, 53463), (40, 53562), (44, 53586), (56, 53637), (61, 53646), (68, 53700), (73, 53727), (74, 53739),

Gene: BlueNGold_95 Start: 51971, Stop: 52378, Start Num: 15

Candidate Starts for BlueNGold_95:

(Start: 14 @51968 has 6 MA's), (Start: 15 @51971 has 5 MA's), (23, 52007), (34, 52061), (36, 52082), (56, 52184), (58, 52196), (63, 52238), (64, 52247), (68, 52274), (75, 52316), (78, 52349), (79, 52361), (81, 52370),

Gene: Boopy_96 Start: 51983, Stop: 52390, Start Num: 15

Candidate Starts for Boopy_96:

(Start: 14 @51980 has 6 MA's), (Start: 15 @51983 has 5 MA's), (23, 52019), (34, 52073), (36, 52094), (56, 52196), (58, 52208), (63, 52250), (64, 52259), (68, 52286), (75, 52328), (78, 52361), (79, 52373), (81, 52382),

Gene: Briakila_26 Start: 20128, Stop: 20541, Start Num: 17

Candidate Starts for Briakila_26:

(Start: 17 @20128 has 44 MA's), (39, 20248), (41, 20254), (54, 20302), (64, 20386), (82, 20512),

Gene: Casbah_25 Start: 19215, Stop: 19628, Start Num: 17

Candidate Starts for Casbah_25:

(Start: 17 @19215 has 44 MA's), (33, 19290), (39, 19335), (41, 19341), (64, 19473), (82, 19599),

Gene: Cece_77 Start: 45674, Stop: 46081, Start Num: 11

Candidate Starts for Cece_77:

(Start: 11 @45674 has 1 MA's), (21, 45725), (32, 45779), (37, 45815), (41, 45839), (44, 45860), (46, 45866), (68, 45974), (73, 46001), (76, 46019),

Gene: ChaChing_26 Start: 19378, Stop: 19791, Start Num: 17

Candidate Starts for ChaChing_26:

(Start: 17 @19378 has 44 MA's), (33, 19453), (39, 19498), (41, 19504), (64, 19636), (82, 19762),

Gene: Chalmers_26 Start: 20169, Stop: 20582, Start Num: 17

Candidate Starts for Chalmers_26:

(Start: 17 @20169 has 44 MA's), (39, 20289), (41, 20295), (54, 20343), (64, 20427), (82, 20553),

Gene: Chandler_26 Start: 20137, Stop: 20550, Start Num: 17

Candidate Starts for Chandler_26:

(Start: 17 @20137 has 44 MA's), (33, 20212), (39, 20257), (41, 20263), (64, 20395), (82, 20521),

Gene: Chentzyk_25 Start: 19233, Stop: 19646, Start Num: 17

Candidate Starts for Chentzyk_25:

(Start: 17 @19233 has 44 MA's), (39, 19353), (41, 19359), (54, 19407), (64, 19491), (82, 19617),

Gene: Chilliams_84 Start: 55298, Stop: 55687, Start Num: 15

Candidate Starts for Chilliams_84:

(Start: 15 @55298 has 5 MA's), (34, 55388), (40, 55436), (61, 55520), (68, 55574), (73, 55601), (74, 55613), (79, 55661),

Gene: Compostia_27 Start: 19796, Stop: 20209, Start Num: 17

Candidate Starts for Compostia_27:

(Start: 17 @19796 has 44 MA's), (33, 19871), (39, 19916), (41, 19922), (64, 20054), (82, 20180),

Gene: Corofin_26 Start: 19388, Stop: 19801, Start Num: 17

Candidate Starts for Corofin_26:

(Start: 17 @19388 has 44 MA's), (33, 19463), (39, 19508), (41, 19514), (64, 19646), (82, 19772),

Gene: Daisy_26 Start: 19384, Stop: 19797, Start Num: 17

Candidate Starts for Daisy_26:

(Start: 17 @19384 has 44 MA's), (39, 19504), (41, 19510), (64, 19642), (82, 19768),

Gene: Deenasa_26 Start: 20126, Stop: 20539, Start Num: 17

Candidate Starts for Deenasa_26:

(Start: 17 @20126 has 44 MA's), (33, 20201), (39, 20246), (41, 20252), (64, 20384), (82, 20510),

Gene: Devonte_26 Start: 19363, Stop: 19776, Start Num: 17

Candidate Starts for Devonte_26:

(Start: 17 @19363 has 44 MA's), (33, 19438), (39, 19483), (41, 19489), (64, 19621), (82, 19747),

Gene: Dodo_94 Start: 51011, Stop: 51421, Start Num: 9

Candidate Starts for Dodo_94:

(Start: 9 @51011 has 2 MA's), (27, 51098), (28, 51101), (35, 51131), (73, 51341), (76, 51359),

Gene: Dori_22 Start: 16225, Stop: 16629, Start Num: 14

Candidate Starts for Dori_22:

(Start: 14 @16225 has 6 MA's), (33, 16303), (39, 16348), (41, 16354), (53, 16399), (55, 16420), (62, 16462), (64, 16486), (67, 16513), (70, 16525), (80, 16603),

Gene: DunneganBoMo_81 Start: 48911, Stop: 49255, Start Num: 23

Candidate Starts for DunneganBoMo_81:

(Start: 15 @48875 has 5 MA's), (23, 48911), (38, 48998), (51, 49061), (56, 49088), (61, 49097), (75, 49193),

Gene: Ellewin_79 Start: 48470, Stop: 48850, Start Num: 15

Candidate Starts for Ellewin_79:

(Start: 15 @48470 has 5 MA's), (23, 48506), (38, 48593), (51, 48656), (56, 48683), (61, 48692), (75, 48788),

Gene: Forza_96 Start: 51899, Stop: 52306, Start Num: 15

Candidate Starts for Forza_96:

(Start: 14 @51896 has 6 MA's), (Start: 15 @51899 has 5 MA's), (23, 51935), (34, 51989), (36, 52010), (56, 52112), (58, 52124), (63, 52166), (64, 52175), (68, 52202), (75, 52244), (78, 52277), (79, 52289), (81, 52298),

Gene: GMA2_25 Start: 22256, Stop: 22675, Start Num: 12

Candidate Starts for GMA2_25:

(12, 22256), (Start: 15 @22268 has 5 MA's), (26, 22325), (42, 22424), (56, 22481), (63, 22535), (64, 22544), (73, 22595), (79, 22655),

Gene: Gadget_27 Start: 19373, Stop: 19786, Start Num: 17

Candidate Starts for Gadget_27:

(Start: 17 @19373 has 44 MA's), (39, 19493), (41, 19499), (54, 19547), (64, 19631), (82, 19757),

Gene: Gervas_26 Start: 19347, Stop: 19760, Start Num: 17

Candidate Starts for Gervas_26:

(Start: 17 @19347 has 44 MA's), (39, 19467), (41, 19473), (54, 19521), (64, 19605), (82, 19731),

Gene: GlenHope_27 Start: 19356, Stop: 19769, Start Num: 17

Candidate Starts for GlenHope_27:

(Start: 17 @19356 has 44 MA's), (39, 19476), (41, 19482), (54, 19530), (64, 19614), (82, 19740),

Gene: Glubnar_26 Start: 19368, Stop: 19781, Start Num: 17

Candidate Starts for Glubnar_26:

(Start: 17 @19368 has 44 MA's), (33, 19443), (39, 19488), (41, 19494), (64, 19626), (82, 19752),

Gene: GoldenEssence_76 Start: 47214, Stop: 47597, Start Num: 14

Candidate Starts for GoldenEssence_76:

(Start: 14 @47214 has 6 MA's), (23, 47253), (40, 47355), (44, 47379), (50, 47400), (61, 47439), (68, 47493), (73, 47520), (74, 47532),

Gene: Halfpint_25 Start: 19188, Stop: 19601, Start Num: 17

Candidate Starts for Halfpint_25:

(Start: 17 @19188 has 44 MA's), (39, 19308), (41, 19314), (54, 19362), (64, 19446), (82, 19572),

Gene: HarveySr_26 Start: 19343, Stop: 19756, Start Num: 17

Candidate Starts for HarveySr_26:

(Start: 17 @19343 has 44 MA's), (39, 19463), (41, 19469), (64, 19601), (82, 19727),

Gene: Heathcliff_26 Start: 19325, Stop: 19738, Start Num: 17

Candidate Starts for Heathcliff_26:

(Start: 17 @19325 has 44 MA's), (39, 19445), (41, 19451), (54, 19499), (64, 19583), (82, 19709),

Gene: KSunshine22_82 Start: 50145, Stop: 50489, Start Num: 23

Candidate Starts for KSunshine22_82:

(Start: 15 @50109 has 5 MA's), (23, 50145), (38, 50232), (51, 50295), (56, 50322), (61, 50331), (75, 50427),

Gene: Kamiyu_26 Start: 19332, Stop: 19745, Start Num: 17

Candidate Starts for Kamiyu_26:

(Start: 17 @19332 has 44 MA's), (33, 19407), (39, 19452), (41, 19458), (64, 19590), (82, 19716),

Gene: Kithara_33 Start: 23575, Stop: 23991, Start Num: 16

Candidate Starts for Kithara_33:

(Start: 16 @23575 has 7 MA's), (29, 23635), (33, 23656), (73, 23896), (77, 23938),

Gene: Kronus_25 Start: 19946, Stop: 20359, Start Num: 17

Candidate Starts for Kronus_25:

(Start: 17 @19946 has 44 MA's), (39, 20066), (41, 20072), (54, 20120), (64, 20204), (82, 20330),

Gene: LeoJr_87 Start: 52158, Stop: 52538, Start Num: 15

Candidate Starts for LeoJr_87:

(Start: 15 @52158 has 5 MA's), (Start: 17 @52167 has 44 MA's), (23, 52194), (49, 52335), (61, 52380), (65, 52413), (75, 52476),

Gene: LestyG_26 Start: 19367, Stop: 19780, Start Num: 17

Candidate Starts for LestyG_26:

(Start: 17 @19367 has 44 MA's), (33, 19442), (39, 19487), (41, 19493), (64, 19625), (82, 19751),

Gene: Maih_19 Start: 19234, Stop: 19614, Start Num: 16

Candidate Starts for Maih_19:

(1, 18784), (3, 19066), (Start: 16 @19234 has 7 MA's), (20, 19249), (31, 19291), (38, 19336), (57, 19426), (62, 19456), (66, 19507), (70, 19522), (74, 19549), (75, 19552),

Gene: Mao1_21 Start: 16621, Stop: 17025, Start Num: 14

Candidate Starts for Mao1_21:

(Start: 14 @16621 has 6 MA's), (33, 16699), (39, 16744), (41, 16750), (53, 16795), (55, 16816), (62, 16858), (64, 16882), (67, 16909), (70, 16921), (80, 16999),

Gene: Mareelih_94 Start: 51401, Stop: 51808, Start Num: 15

Candidate Starts for Mareelih_94:

(Start: 14 @51398 has 6 MA's), (Start: 15 @51401 has 5 MA's), (23, 51437), (34, 51491), (36, 51512), (56, 51614), (58, 51626), (63, 51668), (64, 51677), (68, 51704), (75, 51746), (78, 51779), (79, 51791), (81, 51800),

Gene: Marley1013_26 Start: 20148, Stop: 20561, Start Num: 17

Candidate Starts for Marley1013_26:

(Start: 17 @20148 has 44 MA's), (39, 20268), (41, 20274), (54, 20322), (64, 20406), (82, 20532),

Gene: Mask_22 Start: 16622, Stop: 17026, Start Num: 14

Candidate Starts for Mask_22:

(Start: 14 @16622 has 6 MA's), (33, 16700), (39, 16745), (41, 16751), (53, 16796), (55, 16817), (62, 16859), (64, 16883), (67, 16910), (70, 16922), (80, 17000),

Gene: Mischief19_27 Start: 29157, Stop: 29531, Start Num: 18

Candidate Starts for Mischief19_27:

(Start: 18 @29157 has 4 MA's), (38, 29256), (53, 29316), (57, 29346), (60, 29370),

Gene: MmasiCarm_26 Start: 19358, Stop: 19771, Start Num: 17

Candidate Starts for MmasiCarm_26:

(Start: 17 @19358 has 44 MA's), (39, 19478), (41, 19484), (54, 19532), (64, 19616), (82, 19742),

Gene: Mortcellus_25 Start: 20001, Stop: 20414, Start Num: 17

Candidate Starts for Mortcellus_25:

(Start: 17 @20001 has 44 MA's), (39, 20121), (41, 20127), (54, 20175), (64, 20259), (82, 20385),

Gene: Morty007_26 Start: 20148, Stop: 20561, Start Num: 17

Candidate Starts for Morty007_26:

(Start: 17 @20148 has 44 MA's), (39, 20268), (41, 20274), (54, 20322), (64, 20406), (82, 20532),

Gene: Neos5_26 Start: 20155, Stop: 20568, Start Num: 17
Candidate Starts for Neos5_26:
(Start: 17 @20155 has 44 MA's), (33, 20230), (39, 20275), (41, 20281), (64, 20413), (82, 20539),

Gene: Nozo_26 Start: 20125, Stop: 20538, Start Num: 17
Candidate Starts for Nozo_26:
(Start: 17 @20125 has 44 MA's), (33, 20200), (39, 20245), (41, 20251), (64, 20383), (82, 20509),

Gene: Obutu_26 Start: 19358, Stop: 19771, Start Num: 17
Candidate Starts for Obutu_26:
(Start: 17 @19358 has 44 MA's), (33, 19433), (39, 19478), (41, 19484), (64, 19616), (82, 19742),

Gene: OrangeOswald_26 Start: 19363, Stop: 19776, Start Num: 17
Candidate Starts for OrangeOswald_26:
(Start: 17 @19363 has 44 MA's), (33, 19438), (39, 19483), (41, 19489), (64, 19621), (82, 19747),

Gene: Patbob_88 Start: 53640, Stop: 54023, Start Num: 14
Candidate Starts for Patbob_88:
(Start: 14 @53640 has 6 MA's), (23, 53679), (40, 53781), (44, 53805), (50, 53826), (56, 53856), (61, 53865), (68, 53919), (73, 53946), (74, 53958),

Gene: PauloDiaboli_94 Start: 50046, Stop: 50456, Start Num: 9
Candidate Starts for PauloDiaboli_94:
(Start: 9 @50046 has 2 MA's), (27, 50133), (28, 50136), (35, 50166), (73, 50376), (76, 50394),

Gene: Phayeta_26 Start: 19239, Stop: 19652, Start Num: 17
Candidate Starts for Phayeta_26:
(Start: 17 @19239 has 44 MA's), (33, 19314), (39, 19359), (41, 19365), (64, 19497), (82, 19623),

Gene: Philly_25 Start: 19229, Stop: 19642, Start Num: 17
Candidate Starts for Philly_25:
(Start: 17 @19229 has 44 MA's), (33, 19304), (39, 19349), (41, 19355), (64, 19487), (82, 19613),

Gene: Phlyer_26 Start: 20098, Stop: 20511, Start Num: 17
Candidate Starts for Phlyer_26:
(Start: 17 @20098 has 44 MA's), (39, 20218), (41, 20224), (54, 20272), (64, 20356), (82, 20482),

Gene: Phrampa_81 Start: 50368, Stop: 50751, Start Num: 14
Candidate Starts for Phrampa_81:
(Start: 14 @50368 has 6 MA's), (23, 50407), (37, 50488), (40, 50509), (44, 50533), (60, 50590), (61, 50593), (68, 50647), (73, 50674),

Gene: Pipefish_26 Start: 20248, Stop: 20661, Start Num: 17
Candidate Starts for Pipefish_26:
(Start: 17 @20248 has 44 MA's), (39, 20368), (41, 20374), (54, 20422), (64, 20506), (82, 20632),

Gene: Pumpernickel_91 Start: 51418, Stop: 51831, Start Num: 8
Candidate Starts for Pumpernickel_91:
(Start: 8 @51418 has 1 MA's), (27, 51508), (35, 51541), (37, 51565), (40, 51586), (61, 51670), (72, 51748), (75, 51766), (76, 51769),

Gene: Racecar_88 Start: 53421, Stop: 53804, Start Num: 14
Candidate Starts for Racecar_88:

(Start: 14 @53421 has 6 MA's), (23, 53460), (24, 53463), (40, 53562), (44, 53586), (56, 53637), (61, 53646), (68, 53700), (73, 53727), (74, 53739),

Gene: RagingRooster_26 Start: 19364, Stop: 19777, Start Num: 17

Candidate Starts for RagingRooster_26:

(Start: 17 @19364 has 44 MA's), (33, 19439), (39, 19484), (41, 19490), (64, 19622), (82, 19748),

Gene: RainyPolka_20 Start: 19600, Stop: 19980, Start Num: 17

Candidate Starts for RainyPolka_20:

(2, 19327), (3, 19408), (Start: 17 @19600 has 44 MA's), (20, 19615), (31, 19657), (38, 19702), (47, 19744), (62, 19822), (66, 19873), (70, 19888), (74, 19915), (75, 19918),

Gene: ReginaGlobina_87 Start: 52911, Stop: 53291, Start Num: 15

Candidate Starts for ReginaGlobina_87:

(Start: 15 @52911 has 5 MA's), (Start: 17 @52920 has 44 MA's), (23, 52947), (49, 53088), (61, 53133), (65, 53166), (75, 53229),

Gene: Rita1961_26 Start: 19359, Stop: 19772, Start Num: 17

Candidate Starts for Rita1961_26:

(Start: 17 @19359 has 44 MA's), (33, 19434), (39, 19479), (41, 19485), (64, 19617), (82, 19743),

Gene: Rockabye_89 Start: 55651, Stop: 56040, Start Num: 15

Candidate Starts for Rockabye_89:

(Start: 15 @55651 has 5 MA's), (27, 55711), (34, 55741), (38, 55774), (61, 55873), (68, 55927), (73, 55954), (74, 55966), (79, 56014),

Gene: RomaT_26 Start: 20149, Stop: 20562, Start Num: 17

Candidate Starts for RomaT_26:

(Start: 17 @20149 has 44 MA's), (39, 20269), (41, 20275), (64, 20407), (82, 20533),

Gene: SJReid_93 Start: 54733, Stop: 55122, Start Num: 15

Candidate Starts for SJReid_93:

(Start: 15 @54733 has 5 MA's), (26, 54790), (44, 54895), (45, 54898), (61, 54955), (68, 55009), (73, 55036), (74, 55048), (79, 55096),

Gene: Salete_19 Start: 19235, Stop: 19615, Start Num: 16

Candidate Starts for Salete_19:

(1, 18785), (3, 19067), (Start: 16 @19235 has 7 MA's), (20, 19250), (31, 19292), (38, 19337), (57, 19427), (62, 19457), (66, 19508), (70, 19523), (74, 19550), (75, 19553),

Gene: Sejanus_22 Start: 17555, Stop: 17959, Start Num: 14

Candidate Starts for Sejanus_22:

(Start: 14 @17555 has 6 MA's), (33, 17633), (39, 17678), (41, 17684), (53, 17729), (55, 17750), (62, 17792), (64, 17816), (67, 17843), (70, 17855), (80, 17933),

Gene: Sixama_94 Start: 51509, Stop: 51916, Start Num: 15

Candidate Starts for Sixama_94:

(Start: 14 @51506 has 6 MA's), (Start: 15 @51509 has 5 MA's), (23, 51545), (35, 51602), (63, 51776), (64, 51785), (69, 51821), (71, 51833), (75, 51854), (78, 51887), (79, 51899), (81, 51908),

Gene: SlippinJimmy_26 Start: 20128, Stop: 20541, Start Num: 17

Candidate Starts for SlippinJimmy_26:

(Start: 17 @20128 has 44 MA's), (39, 20248), (41, 20254), (54, 20302), (64, 20386), (82, 20512),

Gene: SwainyDoc_26 Start: 19361, Stop: 19774, Start Num: 17

Candidate Starts for SwainyDoc_26:

(Start: 17 @19361 has 44 MA's), (33, 19436), (39, 19481), (41, 19487), (64, 19619), (82, 19745),

Gene: SynergyX_26 Start: 19364, Stop: 19777, Start Num: 17

Candidate Starts for SynergyX_26:

(Start: 17 @19364 has 44 MA's), (33, 19439), (39, 19484), (41, 19490), (64, 19622), (82, 19748),

Gene: TP1604_19 Start: 19235, Stop: 19615, Start Num: 16

Candidate Starts for TP1604_19:

(1, 18785), (3, 19067), (Start: 16 @19235 has 7 MA's), (20, 19250), (31, 19292), (38, 19337), (57, 19427), (62, 19457), (66, 19508), (70, 19523), (74, 19550), (75, 19553),

Gene: Talia1610_87 Start: 52786, Stop: 53169, Start Num: 14

Candidate Starts for Talia1610_87:

(Start: 14 @52786 has 6 MA's), (23, 52825), (40, 52927), (44, 52951), (50, 52972), (56, 53002), (61, 53011), (68, 53065), (73, 53092), (74, 53104),

Gene: TinyTerror_26 Start: 19361, Stop: 19774, Start Num: 17

Candidate Starts for TinyTerror_26:

(Start: 17 @19361 has 44 MA's), (39, 19481), (41, 19487), (54, 19535), (64, 19619), (82, 19745),

Gene: TurkishDelight_25 Start: 21435, Stop: 21812, Start Num: 18

Candidate Starts for TurkishDelight_25:

(3, 21273), (5, 21360), (7, 21411), (Start: 18 @21435 has 4 MA's), (19, 21441), (20, 21447), (22, 21453), (38, 21534), (43, 21570), (48, 21582), (52, 21594), (59, 21648), (73, 21735), (74, 21747), (78, 21783),

Gene: Tydolla_26 Start: 20101, Stop: 20514, Start Num: 17

Candidate Starts for Tydolla_26:

(Start: 17 @20101 has 44 MA's), (39, 20221), (41, 20227), (54, 20275), (64, 20359), (82, 20485),

Gene: WaddleDee_81 Start: 48766, Stop: 49110, Start Num: 23

Candidate Starts for WaddleDee_81:

(Start: 15 @48730 has 5 MA's), (23, 48766), (38, 48853), (51, 48916), (56, 48943), (61, 48952), (75, 49048),

Gene: Xkcd426_25 Start: 26648, Stop: 27025, Start Num: 18

Candidate Starts for Xkcd426_25:

(6, 26606), (Start: 18 @26648 has 4 MA's), (20, 26660), (38, 26747), (53, 26807), (62, 26867), (66, 26918), (74, 26960), (78, 26996),

Gene: YDN12_20 Start: 19174, Stop: 19551, Start Num: 18

Candidate Starts for YDN12_20:

(3, 19003), (Start: 18 @19174 has 4 MA's), (20, 19186), (25, 19207), (31, 19228), (38, 19273), (57, 19363), (62, 19393), (66, 19444), (70, 19459), (74, 19486), (75, 19489),

Gene: Yahalom_26 Start: 19376, Stop: 19789, Start Num: 17

Candidate Starts for Yahalom_26:

(Start: 17 @19376 has 44 MA's), (39, 19496), (41, 19502), (54, 19550), (64, 19634), (82, 19760),

Gene: Yinz_26 Start: 19402, Stop: 19815, Start Num: 17

Candidate Starts for Yinz_26:

(Start: 17 @19402 has 44 MA's), (33, 19477), (39, 19522), (41, 19528), (64, 19660), (82, 19786),

Gene: Zooman_79 Start: 48365, Stop: 48775, Start Num: 10

Candidate Starts for Zooman_79:

(Start: 10 @48365 has 2 MA's), (13, 48386), (23, 48425), (28, 48452), (30, 48461), (34, 48479), (44, 48551), (72, 48692), (76, 48713),