



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 280339 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280339 has 85 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Blueberry_7
- Track 2 : Begonia_7, Malachai_7
- Track 3 : Zilla_7
- Track 4 : JuJu_7
- Track 5 : Frokostdame_7
- Track 6 : William_7, PCoral7_7, Toast_7
- Track 7 : Fenry_7
- Track 8 : UmaThurman_7, Samba_7, Archis_7, Mellie_7, Hitter_7, Jalammah_7
- Track 9 : Wocket_7
- Track 10 : Barco_7, Lysidious_7, BlingBling_7, MintFen_7, JasperJr_7, Guacamole_7, CaptainKirk2_7, Wisp_7, Delian_7, Zarbodnamra_7, Utz_7, Melba_7
- Track 11 : Azula_7, MissRona_7, Gambino_7
- Track 12 : PrincePatrick_7, Fairfaxidum_7
- Track 13 : Pipp_7
- Track 14 : CarolAnn_7, Blino_7
- Track 15 : Walrus_7
- Track 16 : Petra_7
- Track 17 : ZiggyZoo_7, Obliviate_7
- Track 18 : PhrostedPhlake_7
- Track 19 : CheeseSpider_7
- Track 20 : KappaFarmDelta_7, Murp_7
- Track 21 : Ohgeesy_7
- Track 22 : BaxterFox_7
- Track 23 : PantheRoc_7
- Track 24 : Yeezy_7
- Track 25 : Hortense_7, Shlim410_7, Howe_7, Twinkle_7, Adora_7
- Track 26 : Sidious_7
- Track 27 : Schnabeltier_7, MagicMan_7
- Track 28 : TaronosaurusRx_7
- Track 29 : Opie_7
- Track 30 : ZAYM_7
- Track 31 : WheatThin_11, Nadeem_11, Bock_11, BetterKatz_11, Brylie_11, NancyRae_11, Mulch_11, Parada_11
- Track 32 : Francois_11
- Track 33 : Chop_11, Hamood_11, Ayotoya_11, GrandSlam_11
- Track 34 : DelRio_11
- Track 35 : Pimento_11

- Track 36 : Zodiariah_7, MakCheese_7
- Track 37 : ArchiDore_7, DumpsterDude_7
- Track 38 : Ruthy_7
- Track 39 : Malibo_7
- Track 40 : Sprinklemunch_7
- Track 41 : Mbo4_7
- Track 42 : Whack_7
- Track 43 : REQ2_07

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 32 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archis_7, Barco_7, Begonia_7, BlingBling_7, CaptainKirk2_7, Delian_7, Fairfaxidum_7, Fenry_7, Guacamole_7, Hitter_7, Jalammah_7, JasperJr_7, KappaFarmDelta_7, Lysidious_7, Malachai_7, Melba_7, Mellie_7, MintFen_7, Murp_7, Obliviate_7, PCoral7_7, PhrostedPhlake_7, Pipp_7, PrincePatrick_7, REQ2_07, Samba_7, Toast_7, UmaThurman_7, Utz_7, William_7, Wisp_7, Wocket_7, Zarbodnamra_7, ZiggyZoo_7, Zilla_7,

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

- Mbo4_7,

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

- Adora_7, ArchiDore_7, Ayotoya_11, Azula_7, BaxterFox_7, BetterKatz_11, Blino_7, Blueberry_7, Bock_11, Brylie_11, CarolAnn_7, CheeseSpider_7, Chop_11, DelRio_11, DumpsterDude_7, Francois_11, Frokostdame_7, Gambino_7, GrandSlam_11, Hamood_11, Hortense_7, Howe_7, JuJu_7, MagicMan_7, MakCheese_7, Malibo_7, MissRona_7, Mulch_11, Nadeem_11, NancyRae_11, Ohgeesy_7, Opie_7, PantheRoc_7, Parada_11, Petra_7, Pimento_11, Ruthy_7, Schnabeltier_7, Shlim410_7, Sidious_7, Sprinklemunch_7, TaronosaurusRx_7, Twinkle_7, Walrus_7, Whack_7, WheatThin_11, Yeezy_7, ZAYM_7, Zodiariah_7,

Summary by start number:

Start 12:

- Found in 20 of 85 (23.5%) of genes in pham
- Manual Annotations of this start: 4 of 77
- Called 25.0% of time when present
- Phage (with cluster) where this start called: MagicMan_7 (DB), Opie_7 (DB), Schnabeltier_7 (DB), TaronosaurusRx_7 (DB), ZAYM_7 (DB),

Start 13:

- Found in 17 of 85 (20.0%) of genes in pham
- Manual Annotations of this start: 9 of 77
- Called 52.9% of time when present
- Phage (with cluster) where this start called: BaxterFox_7 (CZ3), Blino_7 (CV), Blueberry_7 (CV), CarolAnn_7 (CV), Frokostdame_7 (CV), JuJu_7 (CV), Walrus_7

(CV), Whack_7 (singleton), Yeezy_7 (CZ3),

Start 14:

- Found in 23 of 85 (27.1%) of genes in pham
- Manual Annotations of this start: 11 of 77
- Called 56.5% of time when present
- Phage (with cluster) where this start called: Adora_7 (CZ4), Azula_7 (CV), CheeseSpider_7 (CV), Gambino_7 (CV), Hortense_7 (CZ4), Howe_7 (CZ4), Mbo4_7 (singleton), MissRona_7 (CV), Ohgeesy_7 (CZ), PantheRoc_7 (CZ3), Shlim410_7 (CZ4), Sidious_7 (CZ7), Twinkle_7 (CZ4),

Start 15:

- Found in 22 of 85 (25.9%) of genes in pham
- Manual Annotations of this start: 20 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArchiDore_7 (DW), Ayotoya_11 (DI), BetterKatz_11 (DI), Bock_11 (DI), Brylie_11 (DI), Chop_11 (DI), DelRio_11 (DI), DumpsterDude_7 (DW), Francois_11 (DI), GrandSlam_11 (DI), Hamood_11 (DI), MakCheese_7 (DW), Malibo_7 (DW), Mulch_11 (DI), Nadeem_11 (DI), NancyRae_11 (DI), Parada_11 (DI), Pimento_11 (DI), Ruthy_7 (DW), Sprinklemunch_7 (DW), WheatThin_11 (DI), Zodiariah_7 (DW),

Start 16:

- Found in 36 of 85 (42.4%) of genes in pham
- Manual Annotations of this start: 32 of 77
- Called 97.2% of time when present
- Phage (with cluster) where this start called: Archis_7 (CV), Barco_7 (CV), Begonia_7 (CV), BlingBling_7 (CV), CaptainKirk2_7 (CV), Delian_7 (CV), Fairfaxidum_7 (CV), Ferry_7 (CV), Guacamole_7 (CV), Hitter_7 (CV), Jalamamah_7 (CV), JasperJr_7 (CV), KappaFarmDelta_7 (CV), Lysidious_7 (CV), Malachai_7 (CV), Melba_7 (CV), Mellie_7 (CV), MintFen_7 (CV), Murp_7 (CV), Obliviate_7 (CV), PCoral7_7 (CV), PhrostedPhlake_7 (CV), Pipp_7 (CV), PrincePatrick_7 (CV), REQ2_07 (singleton), Samba_7 (CV), Toast_7 (CV), UmaThurman_7 (CV), Utz_7 (CV), William_7 (CV), Wisp_7 (CV), Wocket_7 (CV), Zarbodnamra_7 (CV), ZiggyZoo_7 (CV), Zilla_7 (CV),

Start 27:

- Found in 16 of 85 (18.8%) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Petra_7 (CV),

Summary by clusters:

There are 9 clusters represented in this pham: singleton, DI, CZ3, DB, CZ7, CZ4, CZ, DW, CV,

Info for manual annotations of cluster CV:

- Start number 13 was manually annotated 6 times for cluster CV.
- Start number 14 was manually annotated 3 times for cluster CV.
- Start number 16 was manually annotated 32 times for cluster CV.
- Start number 27 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ:

- Start number 14 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ3:

- Start number 13 was manually annotated 2 times for cluster CZ3.
- Start number 14 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 14 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ7:

- Start number 14 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DB:

- Start number 12 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DI:

- Start number 15 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DW:

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

Gene Information:

Gene: Adora_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Adora_7:

(3, 5365), (6, 5629), (7, 5653), (10, 5755), (Start: 14 @5836 has 11 MA's), (23, 5896), (30, 5941), (59, 6106), (66, 6157), (74, 6241),

Gene: ArchiDore_7 Start: 6345, Stop: 6746, Start Num: 15

Candidate Starts for ArchiDore_7:

(10, 6261), (Start: 12 @6321 has 4 MA's), (Start: 15 @6345 has 20 MA's), (39, 6480), (41, 6495), (42, 6498), (71, 6702),

Gene: Archis_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Archis_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (68, 6481), (69, 6499),

Gene: Ayotoya_11 Start: 8058, Stop: 8519, Start Num: 15

Candidate Starts for Ayotoya_11:

(10, 7974), (Start: 15 @8058 has 20 MA's), (18, 8073), (19, 8097), (20, 8100), (28, 8148), (35, 8190), (42, 8235), (43, 8241), (71, 8475), (73, 8490), (75, 8502),

Gene: Azula_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for Azula_7:

(6, 5763), (10, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 11 MA's), (23, 6021), (Start: 27 @6045 has 1 MA's), (30, 6066), (32, 6075), (62, 6291), (66, 6324), (67, 6351), (70, 6387),

Gene: Barco_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Barco_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: BaxterFox_7 Start: 5821, Stop: 6270, Start Num: 13

Candidate Starts for BaxterFox_7:

(Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 11 MA's), (23, 5875), (30, 5920), (32, 5929), (54, 6058), (74, 6235),

Gene: Begonia_7 Start: 6145, Stop: 6573, Start Num: 16

Candidate Starts for Begonia_7:

(Start: 16 @6145 has 32 MA's), (25, 6187), (29, 6220), (34, 6247), (63, 6421), (64, 6454), (68, 6484),

Gene: BetterKatz_11 Start: 8026, Stop: 8487, Start Num: 15

Candidate Starts for BetterKatz_11:

(10, 7942), (Start: 15 @8026 has 20 MA's), (18, 8041), (19, 8065), (20, 8068), (23, 8080), (28, 8116), (35, 8158), (42, 8203), (43, 8209), (71, 8443), (73, 8458), (75, 8470),

Gene: BlingBling_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for BlingBling_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: Blino_7 Start: 5970, Stop: 6470, Start Num: 13

Candidate Starts for Blino_7:

(6, 5766), (10, 5892), (Start: 13 @5970 has 9 MA's), (Start: 14 @5973 has 11 MA's), (23, 6024), (Start: 27 @6048 has 1 MA's), (48, 6201), (58, 6264), (62, 6318), (66, 6348), (67, 6375), (70, 6411),

Gene: Blueberry_7 Start: 5967, Stop: 6446, Start Num: 13

Candidate Starts for Blueberry_7:

(6, 5763), (10, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 11 MA's), (23, 6021), (Start: 27 @6045 has 1 MA's), (30, 6066), (32, 6075), (62, 6291), (66, 6324), (67, 6351), (70, 6387),

Gene: Bock_11 Start: 7776, Stop: 8237, Start Num: 15

Candidate Starts for Bock_11:

(10, 7692), (Start: 15 @7776 has 20 MA's), (18, 7791), (19, 7815), (20, 7818), (23, 7830), (28, 7866), (35, 7908), (42, 7953), (43, 7959), (71, 8193), (73, 8208), (75, 8220),

Gene: Brylie_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Brylie_11:

(10, 7689), (Start: 15 @7773 has 20 MA's), (18, 7788), (19, 7812), (20, 7815), (23, 7827), (28, 7863), (35, 7905), (42, 7950), (43, 7956), (71, 8190), (73, 8205), (75, 8217),

Gene: CaptainKirk2_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for CaptainKirk2_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: CarolAnn_7 Start: 5969, Stop: 6469, Start Num: 13

Candidate Starts for CarolAnn_7:

(6, 5765), (10, 5891), (Start: 13 @5969 has 9 MA's), (Start: 14 @5972 has 11 MA's), (23, 6023), (Start: 27 @6047 has 1 MA's), (48, 6200), (58, 6263), (62, 6317), (66, 6347), (67, 6374), (70, 6410),

Gene: CheeseSpider_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for CheeseSpider_7:

(10, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 11 MA's), (23, 6021), (Start: 27 @6045 has 1 MA's), (30, 6066), (32, 6075), (48, 6198), (58, 6270), (62, 6291), (66, 6324), (67, 6351), (70, 6387),

Gene: Chop_11 Start: 7806, Stop: 8267, Start Num: 15

Candidate Starts for Chop_11:

(10, 7722), (Start: 15 @7806 has 20 MA's), (18, 7821), (19, 7845), (20, 7848), (28, 7896), (35, 7938), (42, 7983), (43, 7989), (71, 8223), (73, 8238), (75, 8250),

Gene: DelRio_11 Start: 8070, Stop: 8531, Start Num: 15

Candidate Starts for DelRio_11:

(10, 7986), (Start: 15 @8070 has 20 MA's), (18, 8085), (19, 8109), (20, 8112), (23, 8124), (28, 8160), (35, 8202), (43, 8253), (71, 8487), (73, 8502),

Gene: Delian_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Delian_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: DumpsterDude_7 Start: 6346, Stop: 6756, Start Num: 15

Candidate Starts for DumpsterDude_7:

(10, 6262), (Start: 12 @6322 has 4 MA's), (Start: 15 @6346 has 20 MA's), (39, 6481), (41, 6496), (42, 6499), (71, 6712),

Gene: Fairfaxidum_7 Start: 6141, Stop: 6554, Start Num: 16

Candidate Starts for Fairfaxidum_7:

(Start: 12 @6114 has 4 MA's), (Start: 16 @6141 has 32 MA's), (29, 6216), (34, 6243), (38, 6267), (43, 6303), (46, 6327), (55, 6354), (57, 6357),

Gene: Fenry_7 Start: 6145, Stop: 6579, Start Num: 16

Candidate Starts for Fenry_7:

(Start: 16 @6145 has 32 MA's), (29, 6220), (34, 6247), (38, 6271), (63, 6427), (68, 6490),

Gene: Francois_11 Start: 7775, Stop: 8248, Start Num: 15

Candidate Starts for Francois_11:

(10, 7691), (Start: 12 @7751 has 4 MA's), (Start: 15 @7775 has 20 MA's), (18, 7790), (19, 7814), (20, 7817), (23, 7829), (28, 7865), (35, 7907), (43, 7958), (65, 8135), (71, 8204), (75, 8231),

Gene: Frokostdame_7 Start: 6038, Stop: 6565, Start Num: 13

Candidate Starts for Frokostdame_7:

(6, 5834), (10, 5960), (Start: 13 @6038 has 9 MA's), (Start: 14 @6041 has 11 MA's), (23, 6092), (Start: 27 @6116 has 1 MA's), (30, 6137), (62, 6410), (66, 6443), (67, 6470), (70, 6506),

Gene: Gambino_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for Gambino_7:

(6, 5763), (10, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 11 MA's), (23, 6021), (Start: 27 @6045 has 1 MA's), (30, 6066), (32, 6075), (62, 6291), (66, 6324), (67, 6351), (70, 6387),

Gene: GrandSlam_11 Start: 7806, Stop: 8267, Start Num: 15

Candidate Starts for GrandSlam_11:

(10, 7722), (Start: 15 @7806 has 20 MA's), (18, 7821), (19, 7845), (20, 7848), (28, 7896), (35, 7938), (42, 7983), (43, 7989), (71, 8223), (73, 8238), (75, 8250),

Gene: Guacamole_7 Start: 6146, Stop: 6574, Start Num: 16

Candidate Starts for Guacamole_7:

(Start: 16 @6146 has 32 MA's), (29, 6221), (34, 6248), (38, 6272), (63, 6422), (64, 6455), (68, 6485), (69, 6503),

Gene: Hamood_11 Start: 7806, Stop: 8267, Start Num: 15

Candidate Starts for Hamood_11:

(10, 7722), (Start: 15 @7806 has 20 MA's), (18, 7821), (19, 7845), (20, 7848), (28, 7896), (35, 7938), (42, 7983), (43, 7989), (71, 8223), (73, 8238), (75, 8250),

Gene: Hitter_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Hitter_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (68, 6481), (69, 6499),

Gene: Hortense_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Hortense_7:

(3, 5365), (6, 5629), (7, 5653), (10, 5755), (Start: 14 @5836 has 11 MA's), (23, 5896), (30, 5941), (59, 6106), (66, 6157), (74, 6241),

Gene: Howe_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Howe_7:

(3, 5365), (6, 5629), (7, 5653), (10, 5755), (Start: 14 @5836 has 11 MA's), (23, 5896), (30, 5941), (59, 6106), (66, 6157), (74, 6241),

Gene: Jalammah_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Jalammah_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (68, 6481), (69, 6499),

Gene: JasperJr_7 Start: 6146, Stop: 6574, Start Num: 16

Candidate Starts for JasperJr_7:

(Start: 16 @6146 has 32 MA's), (29, 6221), (34, 6248), (38, 6272), (63, 6422), (64, 6455), (68, 6485), (69, 6503),

Gene: JuJu_7 Start: 5980, Stop: 6495, Start Num: 13

Candidate Starts for JuJu_7:

(6, 5776), (10, 5902), (Start: 13 @5980 has 9 MA's), (Start: 14 @5983 has 11 MA's), (23, 6034), (Start: 27 @6058 has 1 MA's), (30, 6079), (32, 6088), (48, 6205), (62, 6322), (66, 6373), (67, 6400), (70, 6436),

Gene: KappaFarmDelta_7 Start: 6123, Stop: 6608, Start Num: 16

Candidate Starts for KappaFarmDelta_7:

(Start: 12 @6099 has 4 MA's), (Start: 16 @6123 has 32 MA's), (24, 6162), (29, 6198), (34, 6225), (38, 6249), (39, 6261), (45, 6315), (47, 6321), (52, 6354), (63, 6456), (68, 6519), (69, 6537),

Gene: Lysidious_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Lysidious_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: MagicMan_7 Start: 6338, Stop: 6826, Start Num: 12

Candidate Starts for MagicMan_7:

(8, 6227), (9, 6266), (Start: 12 @6338 has 4 MA's), (Start: 27 @6422 has 1 MA's), (37, 6488), (43, 6527), (74, 6791),

Gene: MakCheese_7 Start: 6342, Stop: 6779, Start Num: 15

Candidate Starts for MakCheese_7:

(10, 6258), (Start: 15 @6342 has 20 MA's), (19, 6381), (20, 6384), (42, 6519), (56, 6579), (75, 6765),

Gene: Malachai_7 Start: 6145, Stop: 6573, Start Num: 16

Candidate Starts for Malachai_7:

(Start: 16 @6145 has 32 MA's), (25, 6187), (29, 6220), (34, 6247), (63, 6421), (64, 6454), (68, 6484),

Gene: Malibo_7 Start: 6358, Stop: 6762, Start Num: 15

Candidate Starts for Malibo_7:

(10, 6274), (Start: 15 @6358 has 20 MA's), (21, 6397), (41, 6508), (53, 6556), (71, 6721),

Gene: Mbo4_7 Start: 6382, Stop: 6798, Start Num: 14

Candidate Starts for Mbo4_7:

(Start: 12 @6361 has 4 MA's), (Start: 14 @6382 has 11 MA's), (Start: 16 @6388 has 32 MA's), (17, 6400), (22, 6430), (31, 6481), (36, 6514), (40, 6541),

Gene: Melba_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Melba_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: Mellie_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Mellie_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (68, 6481), (69, 6499),

Gene: MintFen_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for MintFen_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: MissRona_7 Start: 5970, Stop: 6446, Start Num: 14

Candidate Starts for MissRona_7:

(6, 5763), (10, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 11 MA's), (23, 6021), (Start: 27 @6045 has 1 MA's), (30, 6066), (32, 6075), (62, 6291), (66, 6324), (67, 6351), (70, 6387),

Gene: Mulch_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Mulch_11:

(10, 7689), (Start: 15 @7773 has 20 MA's), (18, 7788), (19, 7812), (20, 7815), (23, 7827), (28, 7863), (35, 7905), (42, 7950), (43, 7956), (71, 8190), (73, 8205), (75, 8217),

Gene: Murp_7 Start: 6126, Stop: 6611, Start Num: 16

Candidate Starts for Murp_7:

(Start: 12 @6102 has 4 MA's), (Start: 16 @6126 has 32 MA's), (24, 6165), (29, 6201), (34, 6228), (38, 6252), (39, 6264), (45, 6318), (47, 6324), (52, 6357), (63, 6459), (68, 6522), (69, 6540),

Gene: Nadeem_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Nadeem_11:

(10, 7689), (Start: 15 @7773 has 20 MA's), (18, 7788), (19, 7812), (20, 7815), (23, 7827), (28, 7863), (35, 7905), (42, 7950), (43, 7956), (71, 8190), (73, 8205), (75, 8217),

Gene: NancyRae_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for NancyRae_11:

(10, 7689), (Start: 15 @7773 has 20 MA's), (18, 7788), (19, 7812), (20, 7815), (23, 7827), (28, 7863), (35, 7905), (42, 7950), (43, 7956), (71, 8190), (73, 8205), (75, 8217),

Gene: Obliviate_7 Start: 6166, Stop: 6594, Start Num: 16

Candidate Starts for Obliviate_7:

(Start: 16 @6166 has 32 MA's), (29, 6241), (34, 6268), (63, 6442), (64, 6475), (68, 6505), (69, 6523),

Gene: Ohgeesy_7 Start: 5824, Stop: 6270, Start Num: 14

Candidate Starts for Ohgeesy_7:

(Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 11 MA's), (23, 5875), (30, 5920), (32, 5929), (54, 6058), (74, 6235),

Gene: Opie_7 Start: 6347, Stop: 6841, Start Num: 12

Candidate Starts for Opie_7:

(8, 6236), (9, 6275), (Start: 12 @6347 has 4 MA's), (Start: 27 @6431 has 1 MA's), (43, 6536), (74, 6806),

Gene: PCoral7_7 Start: 6141, Stop: 6554, Start Num: 16

Candidate Starts for PCoral7_7:

(Start: 12 @6114 has 4 MA's), (Start: 16 @6141 has 32 MA's), (29, 6216), (34, 6243), (38, 6267), (46, 6327), (55, 6354), (57, 6357),

Gene: PantheRoc_7 Start: 5824, Stop: 6270, Start Num: 14

Candidate Starts for PantheRoc_7:

(3, 5353), (4, 5398), (6, 5617), (10, 5743), (Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 11 MA's), (23, 5875), (30, 5920), (32, 5929), (54, 6058), (74, 6235),

Gene: Parada_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for Parada_11:

(10, 7689), (Start: 15 @7773 has 20 MA's), (18, 7788), (19, 7812), (20, 7815), (23, 7827), (28, 7863), (35, 7905), (42, 7950), (43, 7956), (71, 8190), (73, 8205), (75, 8217),

Gene: Petra_7 Start: 6045, Stop: 6476, Start Num: 27

Candidate Starts for Petra_7:

(6, 5763), (10, 5889), (Start: 13 @5967 has 9 MA's), (Start: 14 @5970 has 11 MA's), (23, 6021), (Start: 27 @6045 has 1 MA's), (30, 6066), (32, 6075), (48, 6195), (58, 6267), (62, 6321), (66, 6354), (67, 6381), (70, 6417),

Gene: PhrostedPhlake_7 Start: 6160, Stop: 6651, Start Num: 16

Candidate Starts for PhrostedPhlake_7:

(Start: 16 @6160 has 32 MA's), (24, 6199), (29, 6235), (34, 6262), (38, 6286), (45, 6352), (47, 6358), (52, 6397), (63, 6499), (64, 6532), (68, 6562),

Gene: Pimento_11 Start: 7770, Stop: 8225, Start Num: 15

Candidate Starts for Pimento_11:

(10, 7686), (Start: 15 @7770 has 20 MA's), (18, 7785), (19, 7809), (20, 7812), (23, 7824), (28, 7860), (35, 7902), (42, 7947), (43, 7953), (71, 8181), (73, 8196),

Gene: Pipp_7 Start: 6166, Stop: 6594, Start Num: 16

Candidate Starts for Pipp_7:

(Start: 16 @6166 has 32 MA's), (29, 6241), (34, 6268), (38, 6292), (46, 6349), (63, 6442),

Gene: PrincePatrick_7 Start: 6142, Stop: 6555, Start Num: 16

Candidate Starts for PrincePatrick_7:

(Start: 12 @6115 has 4 MA's), (Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (43, 6304), (46, 6328), (55, 6355), (57, 6358),

Gene: REQ2_07 Start: 5849, Stop: 6256, Start Num: 16

Candidate Starts for REQ2_07:

(Start: 12 @5825 has 4 MA's), (Start: 16 @5849 has 32 MA's), (17, 5861), (72, 6194), (74, 6203),

Gene: Ruthy_7 Start: 6423, Stop: 6830, Start Num: 15

Candidate Starts for Ruthy_7:

(10, 6339), (Start: 12 @6399 has 4 MA's), (Start: 15 @6423 has 20 MA's), (41, 6573), (42, 6576), (71, 6786),

Gene: Samba_7 Start: 6143, Stop: 6571, Start Num: 16

Candidate Starts for Samba_7:

(Start: 16 @6143 has 32 MA's), (29, 6218), (34, 6245), (38, 6269), (63, 6419), (68, 6482), (69, 6500),

Gene: Schnabeltier_7 Start: 6339, Stop: 6827, Start Num: 12

Candidate Starts for Schnabeltier_7:

(8, 6228), (9, 6267), (Start: 12 @6339 has 4 MA's), (Start: 27 @6423 has 1 MA's), (37, 6489), (43, 6528), (74, 6792),

Gene: Shlim410_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Shlim410_7:

(3, 5365), (6, 5629), (7, 5653), (10, 5755), (Start: 14 @5836 has 11 MA's), (23, 5896), (30, 5941), (59, 6106), (66, 6157), (74, 6241),

Gene: Sidious_7 Start: 5827, Stop: 6273, Start Num: 14

Candidate Starts for Sidious_7:

(3, 5356), (4, 5401), (6, 5620), (10, 5746), (Start: 13 @5824 has 9 MA's), (Start: 14 @5827 has 11 MA's), (23, 5878), (26, 5899), (30, 5923), (54, 6061), (60, 6106), (74, 6238),

Gene: Sprinklemunch_7 Start: 6361, Stop: 6819, Start Num: 15

Candidate Starts for Sprinklemunch_7:

(2, 5884), (5, 5977), (10, 6277), (Start: 15 @6361 has 20 MA's), (19, 6400), (20, 6403), (42, 6538), (75, 6805),

Gene: TaronosaurusRx_7 Start: 6346, Stop: 6837, Start Num: 12

Candidate Starts for TaronosaurusRx_7:

(8, 6235), (9, 6274), (Start: 12 @6346 has 4 MA's), (Start: 27 @6430 has 1 MA's), (37, 6496), (43, 6535), (69, 6766), (74, 6802),

Gene: Toast_7 Start: 6141, Stop: 6554, Start Num: 16

Candidate Starts for Toast_7:

(Start: 12 @6114 has 4 MA's), (Start: 16 @6141 has 32 MA's), (29, 6216), (34, 6243), (38, 6267), (46, 6327), (55, 6354), (57, 6357),

Gene: Twinkle_7 Start: 5836, Stop: 6276, Start Num: 14

Candidate Starts for Twinkle_7:

(3, 5365), (6, 5629), (7, 5653), (10, 5755), (Start: 14 @5836 has 11 MA's), (23, 5896), (30, 5941), (59, 6106), (66, 6157), (74, 6241),

Gene: UmaThurman_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for UmaThurman_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (68, 6481), (69, 6499),

Gene: Utz_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Utz_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: Walrus_7 Start: 5970, Stop: 6482, Start Num: 13

Candidate Starts for Walrus_7:

(6, 5766), (10, 5892), (Start: 13 @5970 has 9 MA's), (Start: 14 @5973 has 11 MA's), (23, 6024), (Start: 27 @6048 has 1 MA's), (32, 6078), (48, 6201), (58, 6273), (62, 6327), (66, 6360), (67, 6387), (70, 6423),

Gene: Whack_7 Start: 5839, Stop: 6255, Start Num: 13

Candidate Starts for Whack_7:

(6, 5635), (11, 5818), (Start: 13 @5839 has 9 MA's), (Start: 14 @5842 has 11 MA's), (33, 5950), (61, 6127),

Gene: WheatThin_11 Start: 7773, Stop: 8234, Start Num: 15

Candidate Starts for WheatThin_11:

(10, 7689), (Start: 15 @7773 has 20 MA's), (18, 7788), (19, 7812), (20, 7815), (23, 7827), (28, 7863), (35, 7905), (42, 7950), (43, 7956), (71, 8190), (73, 8205), (75, 8217),

Gene: William_7 Start: 6141, Stop: 6569, Start Num: 16

Candidate Starts for William_7:

(Start: 12 @6114 has 4 MA's), (Start: 16 @6141 has 32 MA's), (29, 6216), (34, 6243), (38, 6267), (46, 6327), (55, 6369), (57, 6372),

Gene: Wisp_7 Start: 6142, Stop: 6570, Start Num: 16

Candidate Starts for Wisp_7:

(Start: 16 @6142 has 32 MA's), (29, 6217), (34, 6244), (38, 6268), (63, 6418), (64, 6451), (68, 6481), (69, 6499),

Gene: Wocket_7 Start: 6129, Stop: 6635, Start Num: 16

Candidate Starts for Wocket_7:

(1, 5271), (2, 5652), (10, 6045), (Start: 12 @6105 has 4 MA's), (Start: 16 @6129 has 32 MA's), (24, 6168), (29, 6204), (34, 6231), (38, 6255), (44, 6312), (50, 6351), (63, 6483), (68, 6546), (69, 6564),

Gene: Yeezy_7 Start: 5821, Stop: 6270, Start Num: 13

Candidate Starts for Yeezy_7:

(3, 5353), (4, 5398), (6, 5617), (10, 5743), (Start: 13 @5821 has 9 MA's), (Start: 14 @5824 has 11 MA's), (30, 5920), (74, 6235), (76, 6250),

Gene: ZAYM_7 Start: 6339, Stop: 6830, Start Num: 12

Candidate Starts for ZAYM_7:

(8, 6228), (9, 6267), (Start: 12 @6339 has 4 MA's), (Start: 27 @6423 has 1 MA's), (37, 6489), (43, 6528), (69, 6759), (74, 6795), (76, 6810),

Gene: Zarbodnamra_7 Start: 6141, Stop: 6569, Start Num: 16

Candidate Starts for Zarbodnamra_7:

(Start: 16 @6141 has 32 MA's), (29, 6216), (34, 6243), (38, 6267), (63, 6417), (64, 6450), (68, 6480), (69, 6498),

Gene: ZiggyZoo_7 Start: 6166, Stop: 6594, Start Num: 16

Candidate Starts for ZiggyZoo_7:

(Start: 16 @6166 has 32 MA's), (29, 6241), (34, 6268), (63, 6442), (64, 6475), (68, 6505), (69, 6523),

Gene: Zilla_7 Start: 6131, Stop: 6622, Start Num: 16

Candidate Starts for Zilla_7:

(10, 6047), (Start: 12 @6107 has 4 MA's), (Start: 16 @6131 has 32 MA's), (24, 6170), (34, 6233), (38, 6257), (45, 6323), (46, 6326), (49, 6350), (51, 6374), (63, 6470), (64, 6503), (68, 6533), (69, 6551),

Gene: Zodiariah_7 Start: 6347, Stop: 6769, Start Num: 15

Candidate Starts for Zodiariah_7:

(10, 6263), (Start: 15 @6347 has 20 MA's), (19, 6386), (20, 6389), (42, 6524), (56, 6569), (75, 6755),