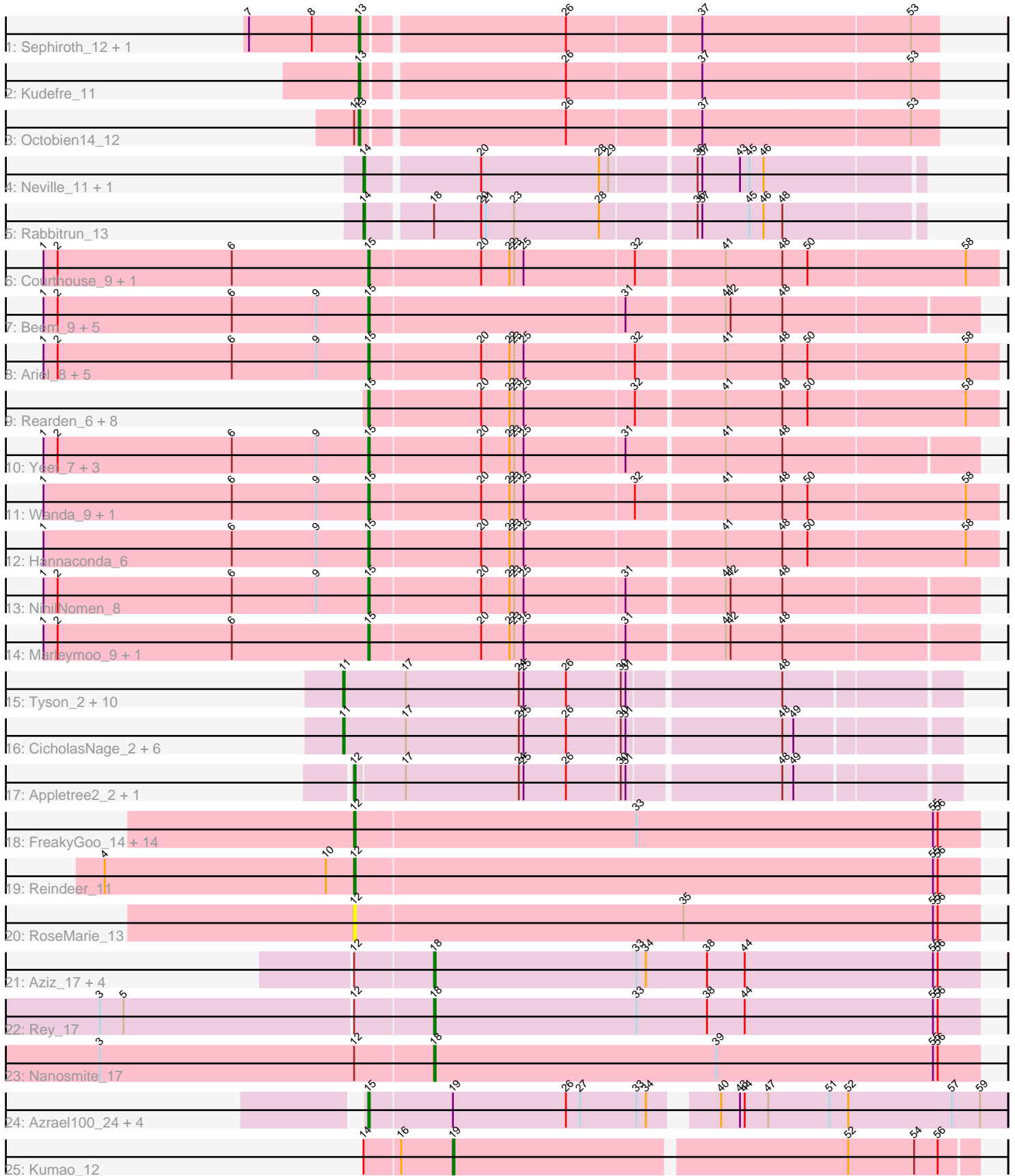


Pham 296452



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 296452 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296452 has 90 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Sephiroth_12, Syleon_12
- Track 2 : Kudrefre_11
- Track 3 : Octobien14_12
- Track 4 : Neville_11, Trax_11
- Track 5 : Rabbitrun_13
- Track 6 : Courthouse_9, Superphikiman_9
- Track 7 : Beem_9, Halley_9, Dallas_8, Redno2_8, Ejimix_10, JuicyJay_10
- Track 8 : Ariel_8, Porcelain_9, MiaZeal_9, Lucky2013_9, Bobby_10, Squint_9
- Track 9 : Rearden_6, BronnyJames_5, Omega_10, Shaboozey_5, KashFlow_3, Nibley_5, Nekros_7, LittleE_8, Gonephishing_9
- Track 10 : Yeet_7, Pound_8, Schatzie_7, Hidrated_8
- Track 11 : Wanda_9, Klein_9
- Track 12 : Hannaconda_6
- Track 13 : NihilNomen_8
- Track 14 : Marleymoo_9, Zelink_9
- Track 15 : Tyson_2, Wyatt2_2, Zaria_2, AvadaKedavra_2, Wamburggrxpress_2, Rose5_2, MAckerman_2, Poochiewood_2, Calm_2, Halena_2, Acquire49_2
- Track 16 : CicholasNage_2, LeBron_2, JoeDirt_2, UPIE_2, Silverleaf_2, Enceladus_2, DirkDirk_2
- Track 17 : Appletree2_2, OhShagHennessy_2
- Track 18 : FreakyGoo_14, Auspice_13, Bricole_13, Dulcita_14, KleverKiS_13, Diminimus_14, Izel_14, Glaske16_14, Skinny_14, LilhomieP_12, PegLeg_13, TyDawg_13, Bongo_13, IPhane7_13, SlimJimmy_12
- Track 19 : Reindeer_11
- Track 20 : RoseMarie_13
- Track 21 : Aziz_17, MrMagoo_17, GardenSalsa_17, Estes_18, GenevaB15_17
- Track 22 : Rey_17
- Track 23 : Nanosmite_17
- Track 24 : Azrael100_24, EniyanLRS_22, MaryV_25, Cosmo_25, Wildcat_25
- Track 25 : Kumao_12

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 30 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ariel_8, Azrael100_24, Beem_9, Bobby_10, BronnyJames_5, Cosmo_25, Courthouse_9, Dallas_8, Ejimix_10, EniyanLRS_22, Gonephishing_9, Halley_9, Hannaconda_6, Hidrated_8, JuicyJay_10, KashFlow_3, Klein_9, LittleE_8, Lucky2013_9, Marleymoo_9, MaryV_25, MiaZeal_9, Nekros_7, Nibley_5, NihilNomen_8, Omega_10, Porcelain_9, Pound_8, Rearden_6, Redno2_8, Schatzie_7, Shaboozey_5, Squint_9, Superphikiman_9, Wanda_9, Wildcat_25, Yeet_7, Zelink_9,

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

-

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

- Acquire49_2, Appletree2_2, Auspice_13, AvadaKedavra_2, Aziz_17, Bongo_13, Bricole_13, Calm_2, CicholasNage_2, Diminimus_14, DirkDirk_2, Dulcita_14, Enceladus_2, Estes_18, FreakyGoo_14, GardenSalsa_17, GenevaB15_17, Glaske16_14, Halena_2, IPHane7_13, Izel_14, JoeDirt_2, KleverKiS_13, Kudrefre_11, Kumao_12, LeBron_2, LilhomieP_12, MAckerman_2, MrMagoo_17, Nanosmite_17, Neville_11, Octobien14_12, OhShagHennessy_2, PegLeg_13, Poochiewood_2, Rabbitrun_13, Reindeer_11, Rey_17, Rose5_2, RoseMarie_13, Sephiroth_12, Silverleaf_2, Skinny_14, SlimJimmy_12, Syleon_12, Trax_11, TyDawg_13, Tyson_2, UPIE_2, Wamburgrxpress_2, Wyatt2_2, Zaria_2,

Summary by start number:

Start 11:

- Found in 18 of 90 (20.0%) of genes in pham
- Manual Annotations of this start: 17 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acquire49_2 (L1), AvadaKedavra_2 (L1), Calm_2 (L1), CicholasNage_2 (L1), DirkDirk_2 (L1), Enceladus_2 (L1), Halena_2 (L1), JoeDirt_2 (L1), LeBron_2 (L1), MAckerman_2 (L1), Poochiewood_2 (L1), Rose5_2 (L1), Silverleaf_2 (L1), Tyson_2 (L1), UPIE_2 (L1), Wamburgrxpress_2 (L1), Wyatt2_2 (L1), Zaria_2 (L1),

Start 12:

- Found in 27 of 90 (30.0%) of genes in pham
- Manual Annotations of this start: 17 of 79
- Called 70.4% of time when present
- Phage (with cluster) where this start called: Appletree2_2 (L1), Auspice_13 (M1), Bongo_13 (M1), Bricole_13 (M1), Diminimus_14 (M1), Dulcita_14 (M1), FreakyGoo_14 (M1), Glaske16_14 (M1), IPHane7_13 (M1), Izel_14 (M1), KleverKiS_13 (M1), LilhomieP_12 (M1), OhShagHennessy_2 (L1), PegLeg_13 (M1), Reindeer_11 (M1), RoseMarie_13 (M1), Skinny_14 (M1), SlimJimmy_12 (M1), TyDawg_13 (M1),

Start 13:

- Found in 4 of 90 (4.4%) of genes in pham
- Manual Annotations of this start: 4 of 79
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Kudrefre_11 (DU1), Octobien14_12 (DU1), Sephiroth_12 (DU1), Syleon_12 (DU1),

Start 14:

- Found in 4 of 90 (4.4%) of genes in pham
- Manual Annotations of this start: 3 of 79
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Neville_11 (DU2), Rabbitrun_13 (DU2), Trax_11 (DU2),

Start 15:

- Found in 38 of 90 (42.2%) of genes in pham
- Manual Annotations of this start: 30 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ariel_8 (J), Azrael100_24 (V), Beem_9 (J), Bobby_10 (J), BronnyJames_5 (J), Cosmo_25 (V), Courthouse_9 (J), Dallas_8 (J), Ejimix_10 (J), EniyanLRS_22 (V), Gonephishing_9 (J), Halley_9 (J), Hannaconda_6 (J), Hidrated_8 (J), JuicyJay_10 (J), KashFlow_3 (J), Klein_9 (J), LittleE_8 (J), Lucky2013_9 (J), Marleymoo_9 (J), MaryV_25 (V), MiaZeal_9 (J), Nekros_7 (J), Nibley_5 (J), NihilNomen_8 (J), Omega_10 (J), Porcelain_9 (J), Pound_8 (J), Rearden_6 (J), Redno2_8 (J), Schatzie_7 (J), Shaboozey_5 (J), Squint_9 (J), Superphikiman_9 (J), Wanda_9 (J), Wildcat_25 (V), Yeet_7 (J), Zelink_9 (J),

Start 18:

- Found in 8 of 90 (8.9%) of genes in pham
- Manual Annotations of this start: 7 of 79
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Aziz_17 (M2), Estes_18 (M2), GardenSalsa_17 (M2), GenevaB15_17 (M2), MrMagoo_17 (M2), Nanosmite_17 (M3), Rey_17 (M2),

Start 19:

- Found in 6 of 90 (6.7%) of genes in pham
- Manual Annotations of this start: 1 of 79
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Kumao_12 (singleton),

Summary by clusters:

There are 9 clusters represented in this pham: V, J, singleton, M1, M3, L1, DU1, DU2, M2,

Info for manual annotations of cluster DU1:

- Start number 13 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 14 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster J:

- Start number 15 was manually annotated 25 times for cluster J.

Info for manual annotations of cluster L1:

- Start number 11 was manually annotated 17 times for cluster L1.
- Start number 12 was manually annotated 2 times for cluster L1.

Info for manual annotations of cluster M1:

- Start number 12 was manually annotated 15 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 18 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 18 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

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

Gene Information:

Gene: Acquire49_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for Acquire49_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Appletree2_2 Start: 456, Stop: 821, Start Num: 12

Candidate Starts for Appletree2_2:

(Start: 12 @456 has 17 MA's), (17, 486), (24, 558), (25, 561), (26, 588), (30, 621), (31, 624), (48, 717), (49, 723),

Gene: Ariel_8 Start: 2563, Stop: 2952, Start Num: 15

Candidate Starts for Ariel_8:

(1, 2356), (2, 2365), (6, 2476), (9, 2530), (Start: 15 @2563 has 30 MA's), (20, 2632), (22, 2650), (23, 2653), (25, 2659), (32, 2728), (41, 2782), (48, 2818), (50, 2833), (58, 2932),

Gene: Auspice_13 Start: 4298, Stop: 4693, Start Num: 12

Candidate Starts for Auspice_13:

(Start: 12 @4298 has 17 MA's), (33, 4475), (55, 4664), (56, 4667),

Gene: AvadaKedavra_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for AvadaKedavra_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Aziz_17 Start: 4947, Stop: 5294, Start Num: 18

Candidate Starts for Aziz_17:

(Start: 12 @4899 has 17 MA's), (Start: 18 @4947 has 7 MA's), (33, 5076), (34, 5082), (38, 5121), (44, 5145), (55, 5265), (56, 5268),

Gene: Azrael100_24 Start: 7714, Stop: 8103, Start Num: 15

Candidate Starts for Azrael100_24:

(Start: 15 @7714 has 30 MA's), (Start: 19 @7765 has 1 MA's), (26, 7837), (27, 7846), (33, 7882), (34, 7888), (40, 7921), (43, 7933), (44, 7936), (47, 7951), (51, 7990), (52, 8002), (57, 8068), (59, 8086),

Gene: Beem_9 Start: 2758, Stop: 3132, Start Num: 15

Candidate Starts for Beem_9:

(1, 2551), (2, 2560), (6, 2671), (9, 2725), (Start: 15 @2758 has 30 MA's), (31, 2917), (41, 2977), (42, 2980), (48, 3013),

Gene: Bobby_10 Start: 3493, Stop: 3882, Start Num: 15

Candidate Starts for Bobby_10:

(1, 3286), (2, 3295), (6, 3406), (9, 3460), (Start: 15 @3493 has 30 MA's), (20, 3562), (22, 3580), (23, 3583), (25, 3589), (32, 3658), (41, 3712), (48, 3748), (50, 3763), (58, 3862),

Gene: Bongo_13 Start: 4298, Stop: 4693, Start Num: 12

Candidate Starts for Bongo_13:

(Start: 12 @4298 has 17 MA's), (33, 4475), (55, 4664), (56, 4667),

Gene: Bricole_13 Start: 4297, Stop: 4692, Start Num: 12

Candidate Starts for Bricole_13:

(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: BronnyJames_5 Start: 1913, Stop: 2302, Start Num: 15

Candidate Starts for BronnyJames_5:

(Start: 15 @1913 has 30 MA's), (20, 1982), (22, 2000), (23, 2003), (25, 2009), (32, 2078), (41, 2132), (48, 2168), (50, 2183), (58, 2282),

Gene: Calm_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for Calm_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: CicholasNage_2 Start: 475, Stop: 849, Start Num: 11

Candidate Starts for CicholasNage_2:

(Start: 11 @475 has 17 MA's), (17, 514), (24, 586), (25, 589), (26, 616), (30, 649), (31, 652), (48, 745), (49, 751),

Gene: Cosmo_25 Start: 7720, Stop: 8109, Start Num: 15

Candidate Starts for Cosmo_25:

(Start: 15 @7720 has 30 MA's), (Start: 19 @7771 has 1 MA's), (26, 7843), (27, 7852), (33, 7888), (34, 7894), (40, 7927), (43, 7939), (44, 7942), (47, 7957), (51, 7996), (52, 8008), (57, 8074), (59, 8092),

Gene: Courthouse_9 Start: 3362, Stop: 3751, Start Num: 15

Candidate Starts for Courthouse_9:

(1, 3155), (2, 3164), (6, 3275), (Start: 15 @3362 has 30 MA's), (20, 3431), (22, 3449), (23, 3452), (25, 3458), (32, 3527), (41, 3581), (48, 3617), (50, 3632), (58, 3731),

Gene: Dallas_8 Start: 2297, Stop: 2671, Start Num: 15

Candidate Starts for Dallas_8:

(1, 2090), (2, 2099), (6, 2210), (9, 2264), (Start: 15 @2297 has 30 MA's), (31, 2456), (41, 2516), (42, 2519), (48, 2552),

Gene: Diminimus_14 Start: 4297, Stop: 4692, Start Num: 12

Candidate Starts for Diminimus_14:

(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: DirkDirk_2 Start: 475, Stop: 849, Start Num: 11

Candidate Starts for DirkDirk_2:

(Start: 11 @475 has 17 MA's), (17, 514), (24, 586), (25, 589), (26, 616), (30, 649), (31, 652), (48, 745), (49, 751),

Gene: Dulcita_14 Start: 4297, Stop: 4692, Start Num: 12
Candidate Starts for Dulcita_14:
(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: Ejimix_10 Start: 3508, Stop: 3882, Start Num: 15
Candidate Starts for Ejimix_10:
(1, 3301), (2, 3310), (6, 3421), (9, 3475), (Start: 15 @3508 has 30 MA's), (31, 3667), (41, 3727), (42, 3730), (48, 3763),

Gene: Enceladus_2 Start: 475, Stop: 849, Start Num: 11
Candidate Starts for Enceladus_2:
(Start: 11 @475 has 17 MA's), (17, 514), (24, 586), (25, 589), (26, 616), (30, 649), (31, 652), (48, 745), (49, 751),

Gene: EniyanLRS_22 Start: 7412, Stop: 7801, Start Num: 15
Candidate Starts for EniyanLRS_22:
(Start: 15 @7412 has 30 MA's), (Start: 19 @7463 has 1 MA's), (26, 7535), (27, 7544), (33, 7580), (34, 7586), (40, 7619), (43, 7631), (44, 7634), (47, 7649), (51, 7688), (52, 7700), (57, 7766), (59, 7784),

Gene: Estes_18 Start: 5092, Stop: 5439, Start Num: 18
Candidate Starts for Estes_18:
(Start: 12 @5044 has 17 MA's), (Start: 18 @5092 has 7 MA's), (33, 5221), (34, 5227), (38, 5266), (44, 5290), (55, 5410), (56, 5413),

Gene: FreakyGoo_14 Start: 4298, Stop: 4693, Start Num: 12
Candidate Starts for FreakyGoo_14:
(Start: 12 @4298 has 17 MA's), (33, 4475), (55, 4664), (56, 4667),

Gene: GardenSalsa_17 Start: 4926, Stop: 5273, Start Num: 18
Candidate Starts for GardenSalsa_17:
(Start: 12 @4878 has 17 MA's), (Start: 18 @4926 has 7 MA's), (33, 5055), (34, 5061), (38, 5100), (44, 5124), (55, 5244), (56, 5247),

Gene: GenevaB15_17 Start: 4947, Stop: 5294, Start Num: 18
Candidate Starts for GenevaB15_17:
(Start: 12 @4899 has 17 MA's), (Start: 18 @4947 has 7 MA's), (33, 5076), (34, 5082), (38, 5121), (44, 5145), (55, 5265), (56, 5268),

Gene: Glaske16_14 Start: 4297, Stop: 4692, Start Num: 12
Candidate Starts for Glaske16_14:
(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: Gonephishing_9 Start: 3890, Stop: 4279, Start Num: 15
Candidate Starts for Gonephishing_9:
(Start: 15 @3890 has 30 MA's), (20, 3959), (22, 3977), (23, 3980), (25, 3986), (32, 4055), (41, 4109), (48, 4145), (50, 4160), (58, 4259),

Gene: Halena_2 Start: 474, Stop: 848, Start Num: 11
Candidate Starts for Halena_2:
(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Halley_9 Start: 2758, Stop: 3132, Start Num: 15

Candidate Starts for Halley_9:

(1, 2551), (2, 2560), (6, 2671), (9, 2725), (Start: 15 @2758 has 30 MA's), (31, 2917), (41, 2977), (42, 2980), (48, 3013),

Gene: Hannaconda_6 Start: 2042, Stop: 2431, Start Num: 15

Candidate Starts for Hannaconda_6:

(1, 1835), (6, 1955), (9, 2009), (Start: 15 @2042 has 30 MA's), (20, 2111), (22, 2129), (23, 2132), (25, 2138), (41, 2261), (48, 2297), (50, 2312), (58, 2411),

Gene: Hidrated_8 Start: 2813, Stop: 3187, Start Num: 15

Candidate Starts for Hidrated_8:

(1, 2606), (2, 2615), (6, 2726), (9, 2780), (Start: 15 @2813 has 30 MA's), (20, 2882), (22, 2900), (23, 2903), (25, 2909), (31, 2972), (41, 3032), (48, 3068),

Gene: IPhane7_13 Start: 4298, Stop: 4693, Start Num: 12

Candidate Starts for IPhane7_13:

(Start: 12 @4298 has 17 MA's), (33, 4475), (55, 4664), (56, 4667),

Gene: Izel_14 Start: 4297, Stop: 4692, Start Num: 12

Candidate Starts for Izel_14:

(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: JoeDirt_2 Start: 475, Stop: 849, Start Num: 11

Candidate Starts for JoeDirt_2:

(Start: 11 @475 has 17 MA's), (17, 514), (24, 586), (25, 589), (26, 616), (30, 649), (31, 652), (48, 745), (49, 751),

Gene: JuicyJay_10 Start: 3588, Stop: 3962, Start Num: 15

Candidate Starts for JuicyJay_10:

(1, 3381), (2, 3390), (6, 3501), (9, 3555), (Start: 15 @3588 has 30 MA's), (31, 3747), (41, 3807), (42, 3810), (48, 3843),

Gene: KashFlow_3 Start: 1608, Stop: 1997, Start Num: 15

Candidate Starts for KashFlow_3:

(Start: 15 @1608 has 30 MA's), (20, 1677), (22, 1695), (23, 1698), (25, 1704), (32, 1773), (41, 1827), (48, 1863), (50, 1878), (58, 1977),

Gene: Klein_9 Start: 3342, Stop: 3731, Start Num: 15

Candidate Starts for Klein_9:

(1, 3135), (6, 3255), (9, 3309), (Start: 15 @3342 has 30 MA's), (20, 3411), (22, 3429), (23, 3432), (25, 3438), (32, 3507), (41, 3561), (48, 3597), (50, 3612), (58, 3711),

Gene: KleverKiS_13 Start: 4294, Stop: 4689, Start Num: 12

Candidate Starts for KleverKiS_13:

(Start: 12 @4294 has 17 MA's), (33, 4471), (55, 4660), (56, 4663),

Gene: Kudrefre_11 Start: 4593, Stop: 4943, Start Num: 13

Candidate Starts for Kudrefre_11:

(Start: 13 @4593 has 4 MA's), (26, 4716), (37, 4797), (53, 4926),

Gene: Kumao_12 Start: 3923, Stop: 4243, Start Num: 19

Candidate Starts for Kumao_12:

(Start: 14 @3869 has 3 MA's), (16, 3890), (Start: 19 @3923 has 1 MA's), (52, 4163), (54, 4205), (56, 4220),

Gene: LeBron_2 Start: 475, Stop: 849, Start Num: 11

Candidate Starts for LeBron_2:

(Start: 11 @475 has 17 MA's), (17, 514), (24, 586), (25, 589), (26, 616), (30, 649), (31, 652), (48, 745), (49, 751),

Gene: LilhomieP_12 Start: 4298, Stop: 4693, Start Num: 12

Candidate Starts for LilhomieP_12:

(Start: 12 @4298 has 17 MA's), (33, 4475), (55, 4664), (56, 4667),

Gene: LittleE_8 Start: 2721, Stop: 3110, Start Num: 15

Candidate Starts for LittleE_8:

(Start: 15 @2721 has 30 MA's), (20, 2790), (22, 2808), (23, 2811), (25, 2817), (32, 2886), (41, 2940), (48, 2976), (50, 2991), (58, 3090),

Gene: Lucky2013_9 Start: 3112, Stop: 3501, Start Num: 15

Candidate Starts for Lucky2013_9:

(1, 2905), (2, 2914), (6, 3025), (9, 3079), (Start: 15 @3112 has 30 MA's), (20, 3181), (22, 3199), (23, 3202), (25, 3208), (32, 3277), (41, 3331), (48, 3367), (50, 3382), (58, 3481),

Gene: MAckerman_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for MAckerman_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Marleymoo_9 Start: 3358, Stop: 3732, Start Num: 15

Candidate Starts for Marleymoo_9:

(1, 3151), (2, 3160), (6, 3271), (Start: 15 @3358 has 30 MA's), (20, 3427), (22, 3445), (23, 3448), (25, 3454), (31, 3517), (41, 3577), (42, 3580), (48, 3613),

Gene: MaryV_25 Start: 7684, Stop: 8073, Start Num: 15

Candidate Starts for MaryV_25:

(Start: 15 @7684 has 30 MA's), (Start: 19 @7735 has 1 MA's), (26, 7807), (27, 7816), (33, 7852), (34, 7858), (40, 7891), (43, 7903), (44, 7906), (47, 7921), (51, 7960), (52, 7972), (57, 8038), (59, 8056),

Gene: MiaZeal_9 Start: 3181, Stop: 3570, Start Num: 15

Candidate Starts for MiaZeal_9:

(1, 2974), (2, 2983), (6, 3094), (9, 3148), (Start: 15 @3181 has 30 MA's), (20, 3250), (22, 3268), (23, 3271), (25, 3277), (32, 3346), (41, 3400), (48, 3436), (50, 3451), (58, 3550),

Gene: MrMagoo_17 Start: 4926, Stop: 5273, Start Num: 18

Candidate Starts for MrMagoo_17:

(Start: 12 @4878 has 17 MA's), (Start: 18 @4926 has 7 MA's), (33, 5055), (34, 5061), (38, 5100), (44, 5124), (55, 5244), (56, 5247),

Gene: Nanosmite_17 Start: 5093, Stop: 5440, Start Num: 18

Candidate Starts for Nanosmite_17:

(3, 4883), (Start: 12 @5045 has 17 MA's), (Start: 18 @5093 has 7 MA's), (39, 5273), (55, 5411), (56, 5414),

Gene: Nekros_7 Start: 3229, Stop: 3618, Start Num: 15

Candidate Starts for Nekros_7:

(Start: 15 @3229 has 30 MA's), (20, 3298), (22, 3316), (23, 3319), (25, 3325), (32, 3394), (41, 3448), (48, 3484), (50, 3499), (58, 3598),

Gene: Neville_11 Start: 4473, Stop: 4811, Start Num: 14

Candidate Starts for Neville_11:

(Start: 14 @4473 has 3 MA's), (20, 4542), (28, 4617), (29, 4623), (36, 4674), (37, 4677), (43, 4701), (45, 4707), (46, 4716),

Gene: Nibley_5 Start: 1913, Stop: 2302, Start Num: 15

Candidate Starts for Nibley_5:

(Start: 15 @1913 has 30 MA's), (20, 1982), (22, 2000), (23, 2003), (25, 2009), (32, 2078), (41, 2132), (48, 2168), (50, 2183), (58, 2282),

Gene: NihilNomen_8 Start: 2817, Stop: 3191, Start Num: 15

Candidate Starts for NihilNomen_8:

(1, 2610), (2, 2619), (6, 2730), (9, 2784), (Start: 15 @2817 has 30 MA's), (20, 2886), (22, 2904), (23, 2907), (25, 2913), (31, 2976), (41, 3036), (42, 3039), (48, 3072),

Gene: Octobien14_12 Start: 5664, Stop: 6014, Start Num: 13

Candidate Starts for Octobien14_12:

(Start: 12 @5661 has 17 MA's), (Start: 13 @5664 has 4 MA's), (26, 5787), (37, 5868), (53, 5997),

Gene: OhShagHennessy_2 Start: 456, Stop: 821, Start Num: 12

Candidate Starts for OhShagHennessy_2:

(Start: 12 @456 has 17 MA's), (17, 486), (24, 558), (25, 561), (26, 588), (30, 621), (31, 624), (48, 717), (49, 723),

Gene: Omega_10 Start: 4066, Stop: 4455, Start Num: 15

Candidate Starts for Omega_10:

(Start: 15 @4066 has 30 MA's), (20, 4135), (22, 4153), (23, 4156), (25, 4162), (32, 4231), (41, 4285), (48, 4321), (50, 4336), (58, 4435),

Gene: PegLeg_13 Start: 4297, Stop: 4692, Start Num: 12

Candidate Starts for PegLeg_13:

(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: Pochiewood_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for Pochiewood_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Porcelain_9 Start: 3181, Stop: 3570, Start Num: 15

Candidate Starts for Porcelain_9:

(1, 2974), (2, 2983), (6, 3094), (9, 3148), (Start: 15 @3181 has 30 MA's), (20, 3250), (22, 3268), (23, 3271), (25, 3277), (32, 3346), (41, 3400), (48, 3436), (50, 3451), (58, 3550),

Gene: Pound_8 Start: 2813, Stop: 3187, Start Num: 15

Candidate Starts for Pound_8:

(1, 2606), (2, 2615), (6, 2726), (9, 2780), (Start: 15 @2813 has 30 MA's), (20, 2882), (22, 2900), (23, 2903), (25, 2909), (31, 2972), (41, 3032), (48, 3068),

Gene: Rabbitrun_13 Start: 4987, Stop: 5325, Start Num: 14

Candidate Starts for Rabbitrun_13:

(Start: 14 @4987 has 3 MA's), (Start: 18 @5026 has 7 MA's), (20, 5056), (21, 5059), (23, 5077), (28, 5131), (36, 5188), (37, 5191), (45, 5221), (46, 5230), (48, 5242),

Gene: Rearden_6 Start: 1991, Stop: 2380, Start Num: 15

Candidate Starts for Rearden_6:

(Start: 15 @1991 has 30 MA's), (20, 2060), (22, 2078), (23, 2081), (25, 2087), (32, 2156), (41, 2210), (48, 2246), (50, 2261), (58, 2360),

Gene: Redno2_8 Start: 2528, Stop: 2902, Start Num: 15

Candidate Starts for Redno2_8:

(1, 2321), (2, 2330), (6, 2441), (9, 2495), (Start: 15 @2528 has 30 MA's), (31, 2687), (41, 2747), (42, 2750), (48, 2783),

Gene: Reindeer_11 Start: 4169, Stop: 4564, Start Num: 12

Candidate Starts for Reindeer_11:

(4, 4010), (10, 4151), (Start: 12 @4169 has 17 MA's), (55, 4535), (56, 4538),

Gene: Rey_17 Start: 5157, Stop: 5504, Start Num: 18

Candidate Starts for Rey_17:

(3, 4950), (5, 4965), (Start: 12 @5109 has 17 MA's), (Start: 18 @5157 has 7 MA's), (33, 5286), (38, 5331), (44, 5355), (55, 5475), (56, 5478),

Gene: Rose5_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for Rose5_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: RoseMarie_13 Start: 4545, Stop: 4940, Start Num: 12

Candidate Starts for RoseMarie_13:

(Start: 12 @4545 has 17 MA's), (35, 4752), (55, 4911), (56, 4914),

Gene: Schatzie_7 Start: 2067, Stop: 2441, Start Num: 15

Candidate Starts for Schatzie_7:

(1, 1860), (2, 1869), (6, 1980), (9, 2034), (Start: 15 @2067 has 30 MA's), (20, 2136), (22, 2154), (23, 2157), (25, 2163), (31, 2226), (41, 2286), (48, 2322),

Gene: Sephiroth_12 Start: 4764, Stop: 5114, Start Num: 13

Candidate Starts for Sephiroth_12:

(7, 4695), (8, 4734), (Start: 13 @4764 has 4 MA's), (26, 4887), (37, 4968), (53, 5097),

Gene: Shaboozey_5 Start: 1913, Stop: 2302, Start Num: 15

Candidate Starts for Shaboozey_5:

(Start: 15 @1913 has 30 MA's), (20, 1982), (22, 2000), (23, 2003), (25, 2009), (32, 2078), (41, 2132), (48, 2168), (50, 2183), (58, 2282),

Gene: Silverleaf_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for Silverleaf_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744), (49, 750),

Gene: Skinny_14 Start: 4297, Stop: 4692, Start Num: 12

Candidate Starts for Skinny_14:

(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: SlimJimmy_12 Start: 4297, Stop: 4692, Start Num: 12
Candidate Starts for SlimJimmy_12:
(Start: 12 @4297 has 17 MA's), (33, 4474), (55, 4663), (56, 4666),

Gene: Squint_9 Start: 3112, Stop: 3501, Start Num: 15
Candidate Starts for Squint_9:
(1, 2905), (2, 2914), (6, 3025), (9, 3079), (Start: 15 @3112 has 30 MA's), (20, 3181), (22, 3199), (23, 3202), (25, 3208), (32, 3277), (41, 3331), (48, 3367), (50, 3382), (58, 3481),

Gene: Superphikiman_9 Start: 3362, Stop: 3751, Start Num: 15
Candidate Starts for Superphikiman_9:
(1, 3155), (2, 3164), (6, 3275), (Start: 15 @3362 has 30 MA's), (20, 3431), (22, 3449), (23, 3452), (25, 3458), (32, 3527), (41, 3581), (48, 3617), (50, 3632), (58, 3731),

Gene: Syleon_12 Start: 4686, Stop: 5036, Start Num: 13
Candidate Starts for Syleon_12:
(7, 4617), (8, 4656), (Start: 13 @4686 has 4 MA's), (26, 4809), (37, 4890), (53, 5019),

Gene: Trax_11 Start: 4473, Stop: 4811, Start Num: 14
Candidate Starts for Trax_11:
(Start: 14 @4473 has 3 MA's), (20, 4542), (28, 4617), (29, 4623), (36, 4674), (37, 4677), (43, 4701), (45, 4707), (46, 4716),

Gene: TyDawg_13 Start: 4298, Stop: 4693, Start Num: 12
Candidate Starts for TyDawg_13:
(Start: 12 @4298 has 17 MA's), (33, 4475), (55, 4664), (56, 4667),

Gene: Tyson_2 Start: 474, Stop: 848, Start Num: 11
Candidate Starts for Tyson_2:
(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: UPIE_2 Start: 475, Stop: 849, Start Num: 11
Candidate Starts for UPIE_2:
(Start: 11 @475 has 17 MA's), (17, 514), (24, 586), (25, 589), (26, 616), (30, 649), (31, 652), (48, 745), (49, 751),

Gene: Wamburgrexpress_2 Start: 474, Stop: 848, Start Num: 11
Candidate Starts for Wamburgrexpress_2:
(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Wanda_9 Start: 3342, Stop: 3731, Start Num: 15
Candidate Starts for Wanda_9:
(1, 3135), (6, 3255), (9, 3309), (Start: 15 @3342 has 30 MA's), (20, 3411), (22, 3429), (23, 3432), (25, 3438), (32, 3507), (41, 3561), (48, 3597), (50, 3612), (58, 3711),

Gene: Wildcat_25 Start: 7694, Stop: 8083, Start Num: 15
Candidate Starts for Wildcat_25:
(Start: 15 @7694 has 30 MA's), (Start: 19 @7745 has 1 MA's), (26, 7817), (27, 7826), (33, 7862), (34, 7868), (40, 7901), (43, 7913), (44, 7916), (47, 7931), (51, 7970), (52, 7982), (57, 8048), (59, 8066),

Gene: Wyatt2_2 Start: 474, Stop: 848, Start Num: 11
Candidate Starts for Wyatt2_2:
(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Yeet_7 Start: 2067, Stop: 2441, Start Num: 15

Candidate Starts for Yeet_7:

(1, 1860), (2, 1869), (6, 1980), (9, 2034), (Start: 15 @2067 has 30 MA's), (20, 2136), (22, 2154), (23, 2157), (25, 2163), (31, 2226), (41, 2286), (48, 2322),

Gene: Zaria_2 Start: 474, Stop: 848, Start Num: 11

Candidate Starts for Zaria_2:

(Start: 11 @474 has 17 MA's), (17, 513), (24, 585), (25, 588), (26, 615), (30, 648), (31, 651), (48, 744),

Gene: Zelink_9 Start: 2841, Stop: 3215, Start Num: 15

Candidate Starts for Zelink_9:

(1, 2634), (2, 2643), (6, 2754), (Start: 15 @2841 has 30 MA's), (20, 2910), (22, 2928), (23, 2931), (25, 2937), (31, 3000), (41, 3060), (42, 3063), (48, 3096),