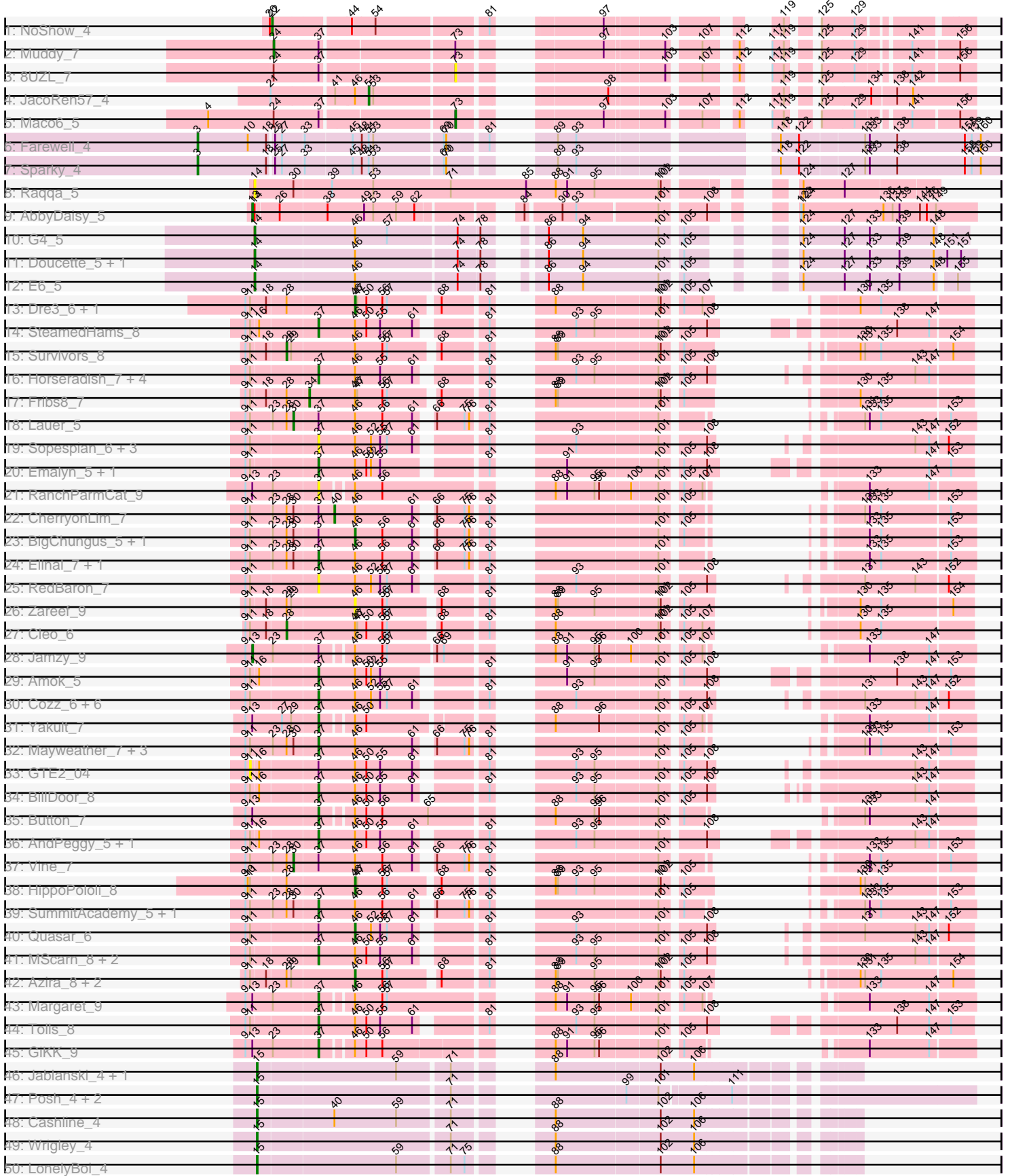
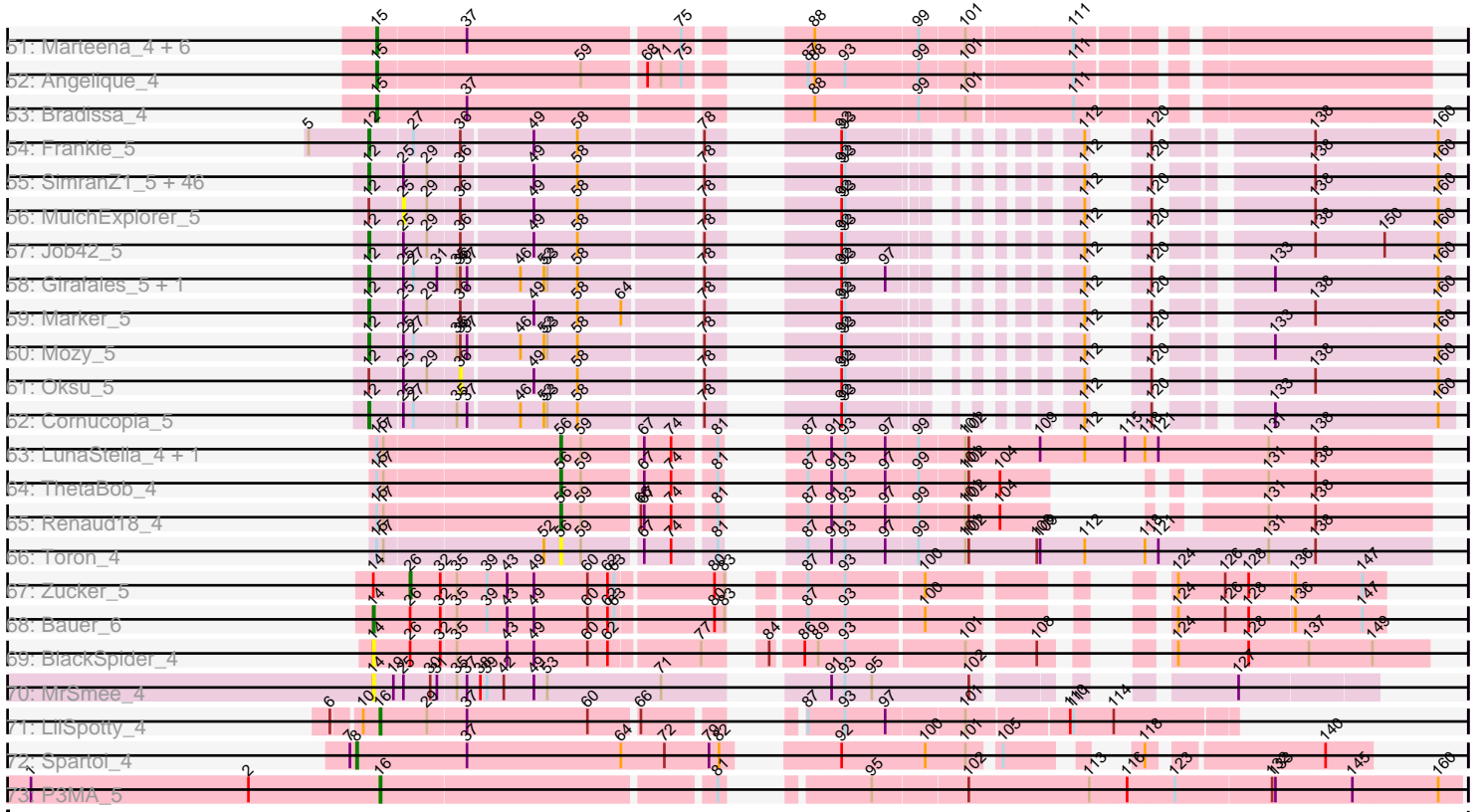


Pham 193788



Pham 193788



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 193788 Report

This analysis was run 11/02/24 on database version 579.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 193788 has 157 members, 18 are drafts.

Phages represented in each track:

- Track 1 : NoShow_4
- Track 2 : Muddy_7
- Track 3 : 8UZL_7
- Track 4 : JacoRen57_4
- Track 5 : Maco6_5
- Track 6 : Farewell_4
- Track 7 : Sparky_4
- Track 8 : Raqqa_5
- Track 9 : AbbyDaisy_5
- Track 10 : G4_5
- Track 11 : Doucette_5, B22_5
- Track 12 : E6_5
- Track 13 : Dre3_6, Gibbous_6
- Track 14 : SteamedHams_8
- Track 15 : Survivors_8
- Track 16 : Horseradish_7, SweatNTears_8, Biskit_7, SketchMex_5, Yummy_7
- Track 17 : Fribs8_7
- Track 18 : Lauer_5
- Track 19 : Sopespian_6, Carsonalex_7, PsychoKiller_6, Elliott_6
- Track 20 : Emalyn_5, AikoCarson_5
- Track 21 : RanchParmCat_9
- Track 22 : CherryonLim_7
- Track 23 : BigChungus_5, Feastonyeet_5
- Track 24 : Elinal_7, KayGee_6
- Track 25 : RedBaron_7
- Track 26 : Zareef_9
- Track 27 : Cleo_6
- Track 28 : Jamzy_9
- Track 29 : Amok_5
- Track 30 : Cozz_6, MunkgeeRoachy_6, Agatha_6, Typhonmacy_7, GoldHunter_7, Burnsey_6, Axym_6
- Track 31 : Yakult_7
- Track 32 : Mayweather_7, SheckWes_5, MAnor_6, Pons_6

- Track 33 : GTE2_04
- Track 34 : BillDoor_8
- Track 35 : Button_7
- Track 36 : AndPeggy_5, Yarn_5
- Track 37 : Vine_7
- Track 38 : HippoPololi_8
- Track 39 : SummitAcademy_5, PotPie_6
- Track 40 : Quasar_6
- Track 41 : MScarn_8, Troje_6, Buttrmlkdreams_6
- Track 42 : Azira_8, Nibbles_8, MaVan_8
- Track 43 : Margaret_9
- Track 44 : Tolls_8
- Track 45 : GiKK_9
- Track 46 : Jablanski_4, Pytheas_4
- Track 47 : Posh_4, BeeGee_4, Confidence_4
- Track 48 : Cashline_4
- Track 49 : Wrigley_4
- Track 50 : LonelyBoi_4
- Track 51 : Marteena_4, EnalisNailo_4, EMSquaredA_4, Floral_4, BritBrat_4, Lilas_4, Pollux_4
- Track 52 : Angelique_4
- Track 53 : Bradissa_4
- Track 54 : Frankie_5
- Track 55 : SimranZ1_5, TootsiePop_5, Leozinho_5, Spikelee_5, OwlsT2W_5, Plumbus_5, Alexphander_5, Coco12_5, BigPhil_5, Bobi_5, Beakin_5, Kingsley_5, Lorde_5, RockyHorror_5, Seagreen_5, Boomer_5, Enby_5, BuzzLyseyear_5, Rialto_5, Flathead_5, JalFarm20_5, Starcevich_5, ChickenDinner_5, DirtMcgirt_5, Stap_5, Piper2020_5, Cerasum_5, Ramsey_5, Drago_5, Hegedechwinu_5, LittleShirley_5, DocMcStuffins_5, Pollywog_5, Madiba_5, Sarma624_5, DosHalletts_5, Mova_5, UncleRicky_5, DaWorst_5, Kimberlium_5, Juice456_5, Awesomesauce_5, Squirty_5, Misha28_5, Totinger_5, Velveteen_5, Tootsieroll_5
- Track 56 : MulchExplorer_5
- Track 57 : Job42_5
- Track 58 : Girafales_5, Quico_5
- Track 59 : Marker_5
- Track 60 : Mozy_5
- Track 61 : Oksu_5
- Track 62 : Cornucopia_5
- Track 63 : LunaStella_4, TChen_4
- Track 64 : ThetaBob_4
- Track 65 : Renaud18_4
- Track 66 : Toron_4
- Track 67 : Zucker_5
- Track 68 : Bauer_6
- Track 69 : BlackSpider_4
- Track 70 : MrSmee_4
- Track 71 : LilSpotty_4
- Track 72 : Spartoi_4
- Track 73 : P3MA_5

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

The start number called the most often in the published annotations is 12, it was called in 53 of the 139 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander_5, Awesomesauce_5, Beakin_5, BigPhil_5, Bobi_5, Boomer_5, BuzzLyseyear_5, Cerasum_5, ChickenDinner_5, Coco12_5, Cornucopia_5, DaWorst_5, DirtMcgirt_5, DocMcStuffins_5, DosHalletts_5, Drago_5, Enby_5, Flathead_5, Frankie_5, Girafales_5, Hegedechwinu_5, JalFarm20_5, Job42_5, Juice456_5, Kimberlium_5, Kingsley_5, Leozinho_5, LittleShirley_5, Lorde_5, Madiba_5, Marker_5, Misha28_5, Mova_5, Mozy_5, OwlsT2W_5, Piper2020_5, Plumbus_5, Pollywog_5, Quico_5, Ramsey_5, Rialto_5, RockyHorror_5, Sarma624_5, Seagreen_5, SimranZ1_5, Spikelee_5, Squirty_5, Stap_5, Starcevich_5, TootsiePop_5, Tootsieroll_5, Totinger_5, UncleRicky_5, Velveteen_5,

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

- MulchExplorer_5, Oksu_5,

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

- 8UZL_7, AbbyDaisy_5, Agatha_6, AikoCarson_5, Amok_5, AndPeggy_5, Angelique_4, Axym_6, Azira_8, B22_5, Bauer_6, BeeGee_4, BigChungus_5, BillDoor_8, Biskit_7, BlackSpider_4, Bradissa_4, BritBrat_4, Burnsey_6, Button_7, Buttrmlkdreams_6, Carsonalex_7, Cashline_4, CherryonLim_7, Cleo_6, Confidence_4, Cozz_6, Doucette_5, Dre3_6, E6_5, EMsquaredA_4, Elinal_7, Elliott_6, Emalyn_5, EnalisNailo_4, Farewell_4, Feastonyeet_5, Floral_4, Fribs8_7, G4_5, GTE2_04, GiKK_9, Gibbous_6, GoldHunter_7, HippoPololi_8, Horseradish_7, Jablanski_4, JacoRen57_4, Jamzy_9, KayGee_6, Lauer_5, LilSpotty_4, Lilas_4, LonelyBoi_4, LunaStella_4, MAnor_6, MScarn_8, MaVan_8, Maco6_5, Margaret_9, Marteena_4, Mayweather_7, MrSmee_4, Muddy_7, MunkgeeRoachy_6, Nibbles_8, NoShow_4, P3MA_5, Pollux_4, Pons_6, Posh_4, PotPie_6, PsychoKiller_6, Pytheas_4, Quasar_6, RanchParmCat_9, Raqqa_5, RedBaron_7, Renaud18_4, SheckWes_5, SketchMex_5, Sopespian_6, Sparky_4, Spartoi_4, SteamedHams_8, SummitAcademy_5, Survivors_8, SweatNTears_8, TChen_4, ThetaBob_4, Tolls_8, Toron_4, Troje_6, Typhonomachy_7, Vine_7, Wrigley_4, Yakult_7, Yarn_5, Yummy_7, Zareef_9, Zucker_5,

Summary by start number:

Start 3:

- Found in 2 of 157 (1.3%) of genes in pham
- Manual Annotations of this start: 2 of 139
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Farewell_4 (AF), Sparky_4 (AF),

Start 8:

- Found in 1 of 157 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spartoi_4 (singleton),

Start 11:

- Found in 53 of 157 (33.8%) of genes in pham
- No Manual Annotations of this start.

- Called 1.9% of time when present
- Phage (with cluster) where this start called: GTE2_04 (CT),

Start 12:

- Found in 56 of 157 (35.7%) of genes in pham
- Manual Annotations of this start: 53 of 139
- Called 96.4% of time when present
- Phage (with cluster) where this start called: Alexphander_5 (F1), Awesomesauce_5 (F1), Beakin_5 (F1), BigPhil_5 (F1), Bobi_5 (F1), Boomer_5 (F1), BuzzLyseyear_5 (F1), Cerasum_5 (F1), ChickenDinner_5 (F1), Coco12_5 (F1), Cornucopia_5 (F1), DaWorst_5 (F1), DirtMcgirt_5 (F1), DocMcStuffins_5 (F1), DosHalletts_5 (F1), Drago_5 (F1), Enby_5 (F1), Flathead_5 (F1), Frankie_5 (F1), Girafales_5 (F1), Hegedechwinu_5 (F1), JalFarm20_5 (F1), Job42_5 (F1), Juice456_5 (F1), Kimberlium_5 (F1), Kingsley_5 (F1), Leozinho_5 (F1), LittleShirley_5 (F1), Lorde_5 (F1), Madiba_5 (F1), Marker_5 (F1), Misha28_5 (F1), Mova_5 (F1), Mozy_5 (F1), OwlsT2W_5 (F1), Piper2020_5 (F1), Plumbus_5 (F1), Pollywog_5 (F1), Quico_5 (F1), Ramsey_5 (F1), Rialto_5 (F1), RockyHorror_5 (F1), Sarma624_5 (F1), Seagreen_5 (F1), SimranZ1_5 (F1), Spikelee_5 (F1), Squirty_5 (F3), Stap_5 (F1), Starcevich_5 (F1), TootsiePop_5 (F1), Tootsieroll_5 (F1), Totinger_5 (F1), UncleRicky_5 (F1), Velveteen_5 (F1),

Start 13:

- Found in 7 of 157 (4.5%) of genes in pham
- Manual Annotations of this start: 2 of 139
- Called 28.6% of time when present
- Phage (with cluster) where this start called: AbbyDaisy_5 (AY), Jamzy_9 (CT),

Start 14:

- Found in 10 of 157 (6.4%) of genes in pham
- Manual Annotations of this start: 5 of 139
- Called 80.0% of time when present
- Phage (with cluster) where this start called: B22_5 (BW), Bauer_6 (FN), BlackSpider_4 (FN), Doucette_5 (BW), E6_5 (BW), G4_5 (BW), MrSmee_4 (UNK), Raqqa_5 (AY),

Start 15:

- Found in 22 of 157 (14.0%) of genes in pham
- Manual Annotations of this start: 17 of 139
- Called 77.3% of time when present
- Phage (with cluster) where this start called: Angelique_4 (CY1), BeeGee_4 (CY), Bradissa_4 (CY1), BritBrat_4 (CY2), Cashline_4 (CY), Confidence_4 (CY1), EMSquaredA_4 (CY1), EnalisNailo_4 (CY1), Floral_4 (CY1), Jablanski_4 (CY), Lilas_4 (CY1), LonelyBoi_4 (CY), Marteen_4 (CY1), Pollux_4 (CY1), Posh_4 (CY), Pytheas_4 (CY), Wrigley_4 (CY),

Start 16:

- Found in 8 of 157 (5.1%) of genes in pham
- Manual Annotations of this start: 2 of 139
- Called 25.0% of time when present
- Phage (with cluster) where this start called: LilSpotty_4 (singleton), P3MA_5 (singleton),

Start 22:

- Found in 1 of 157 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NoShow_4 (AB),

Start 24:

- Found in 3 of 157 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Muddy_7 (AB),

Start 25:

- Found in 58 of 157 (36.9%) of genes in pham
- No Manual Annotations of this start.
- Called 1.7% of time when present
- Phage (with cluster) where this start called: MulchExplorer_5 (F1),

Start 26:

- Found in 4 of 157 (2.5%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Zucker_5 (FN),

Start 28:

- Found in 23 of 157 (14.6%) of genes in pham
- Manual Annotations of this start: 2 of 139
- Called 8.7% of time when present
- Phage (with cluster) where this start called: Cleo_6 (CT), Survivors_8 (CT),

Start 30:

- Found in 15 of 157 (9.6%) of genes in pham
- Manual Annotations of this start: 2 of 139
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Lauer_5 (CT), Vine_7 (CT),

Start 34:

- Found in 1 of 157 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fribs8_7 (CT),

Start 36:

- Found in 55 of 157 (35.0%) of genes in pham
- No Manual Annotations of this start.
- Called 1.8% of time when present
- Phage (with cluster) where this start called: Oksu_5 (F1),

Start 37:

- Found in 67 of 157 (42.7%) of genes in pham
- Manual Annotations of this start: 33 of 139
- Called 61.2% of time when present
- Phage (with cluster) where this start called: Agatha_6 (CT), AikoCarson_5 (CT), Amok_5 (CT), AndPeggy_5 (CT), Axym_6 (CT), BillDoor_8 (CT), Biskit_7 (CT),

Burnsey_6 (CT), Button_7 (CT), Buttrmilkdreams_6 (CT), Carsonalex_7 (CT), Cozz_6 (CT), Elinal_7 (CT), Elliott_6 (CT), Emalyn_5 (CT), GiKK_9 (CT), GoldHunter_7 (CT), Horseradish_7 (CT), KayGee_6 (CT), MAnor_6 (CT), MScarn_8 (CT), Margaret_9 (CT), Mayweather_7 (CT), MunkgeeRoachy_6 (CT), Pons_6 (CT), PotPie_6 (CT), PsychoKiller_6 (CT), RanchParmCat_9 (CT), RedBaron_7 (CT), SheckWes_5 (CT), SketchMex_5 (CT), Sopeopian_6 (CT), SteamedHams_8 (CT), SummitAcademy_5 (CT), SweatNTears_8 (CT), Tolls_8 (CT), Troje_6 (CT), Typhonmarchy_7 (CT), Yakult_7 (CT), Yarn_5 (CT), Yummy_7 (CT),

Start 40:

- Found in 2 of 157 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 50.0% of time when present
- Phage (with cluster) where this start called: CherryonLim_7 (CT),

Start 46:

- Found in 68 of 157 (43.3%) of genes in pham
- Manual Annotations of this start: 9 of 139
- Called 14.7% of time when present
- Phage (with cluster) where this start called: Azira_8 (CT), BigChungus_5 (CT), Dre3_6 (CT), Feastonyeet_5 (CT), Gibbous_6 (CT), HippoPololi_8 (CT), MaVan_8 (CT), Nibbles_8 (CT), Quasar_6 (CT), Zareef_9 (CT),

Start 51:

- Found in 3 of 157 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 33.3% of time when present
- Phage (with cluster) where this start called: JacoRen57_4 (AB),

Start 56:

- Found in 28 of 157 (17.8%) of genes in pham
- Manual Annotations of this start: 4 of 139
- Called 17.9% of time when present
- Phage (with cluster) where this start called: LunaStella_4 (F4), Renaud18_4 (F4), TChen_4 (F4), ThetaBob_4 (F4), Toron_4 (F6),

Start 73:

- Found in 3 of 157 (1.9%) of genes in pham
- Manual Annotations of this start: 1 of 139
- Called 66.7% of time when present
- Phage (with cluster) where this start called: 8UZL_7 (AB), Maco6_5 (AB),

Summary by clusters:

There are 15 clusters represented in this pham: F1, singleton, AB, F4, F6, AF, F3, CY1, CY2, CY, BW, AY, UNK, FN, CT,

Info for manual annotations of cluster AB:

- Start number 22 was manually annotated 1 time for cluster AB.
- Start number 24 was manually annotated 1 time for cluster AB.
- Start number 51 was manually annotated 1 time for cluster AB.
- Start number 73 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster AF:

- Start number 3 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster AY:

- Start number 13 was manually annotated 1 time for cluster AY.

Info for manual annotations of cluster BW:

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

Info for manual annotations of cluster CT:

- Start number 13 was manually annotated 1 time for cluster CT.
- Start number 28 was manually annotated 2 times for cluster CT.
- Start number 30 was manually annotated 2 times for cluster CT.
- Start number 34 was manually annotated 1 time for cluster CT.
- Start number 37 was manually annotated 33 times for cluster CT.
- Start number 40 was manually annotated 1 time for cluster CT.
- Start number 46 was manually annotated 9 times for cluster CT.

Info for manual annotations of cluster CY:

- Start number 15 was manually annotated 7 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 15 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 15 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster F1:

- Start number 12 was manually annotated 52 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 12 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 56 was manually annotated 4 times for cluster F4.

Info for manual annotations of cluster FN:

- Start number 14 was manually annotated 1 time for cluster FN.
- Start number 26 was manually annotated 1 time for cluster FN.

Gene Information:

Gene: 8UZL_7 Start: 5062, Stop: 5550, Start Num: 73

Candidate Starts for 8UZL_7:

(Start: 24 @4843 has 1 MA's), (Start: 37 @4900 has 33 MA's), (Start: 73 @5062 has 1 MA's), (103, 5263), (107, 5299), (112, 5329), (117, 5335), (119, 5350), (125, 5374), (129, 5416), (141, 5473), (156, 5530),

Gene: AbbyDaisy_5 Start: 3558, Stop: 4358, Start Num: 13

Candidate Starts for AbbyDaisy_5:

(Start: 13 @3558 has 2 MA's), (Start: 14 @3561 has 5 MA's), (Start: 26 @3591 has 1 MA's), (38, 3651), (49, 3699), (53, 3711), (59, 3741), (62, 3765), (84, 3867), (90, 3909), (93, 3927), (101, 4029), (108, 4080), (123, 4131), (124, 4134), (136, 4236), (137, 4248), (139, 4257), (144, 4284), (146, 4293), (149, 4305),

Gene: Agatha_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Agatha_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (131, 4707), (143, 4773), (147, 4791), (152, 4812),

Gene: AikoCarson_5 Start: 3913, Stop: 4572, Start Num: 37

Candidate Starts for AikoCarson_5:

(9, 3826), (11, 3832), (Start: 37 @3913 has 33 MA's), (Start: 46 @3961 has 9 MA's), (50, 3976), (52, 3982), (55, 3994), (81, 4108), (91, 4156), (101, 4270), (105, 4291), (108, 4321), (147, 4516), (153, 4543),

Gene: Alexphander_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Alexphander_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Amok_5 Start: 3914, Stop: 4573, Start Num: 37

Candidate Starts for Amok_5:

(9, 3827), (11, 3833), (Start: 16 @3842 has 2 MA's), (Start: 37 @3914 has 33 MA's), (Start: 46 @3962 has 9 MA's), (50, 3977), (52, 3983), (55, 3995), (81, 4109), (91, 4157), (95, 4193), (101, 4271), (105, 4292), (108, 4322), (138, 4475), (147, 4517), (153, 4544),

Gene: AndPeggy_5 Start: 4225, Stop: 4881, Start Num: 37

Candidate Starts for AndPeggy_5:

(9, 4138), (11, 4144), (Start: 16 @4153 has 2 MA's), (Start: 37 @4225 has 33 MA's), (Start: 46 @4273 has 9 MA's), (50, 4288), (55, 4306), (61, 4348), (81, 4420), (93, 4480), (95, 4504), (101, 4582), (108, 4633), (143, 4810), (147, 4828),

Gene: Angelique_4 Start: 3707, Stop: 4519, Start Num: 15

Candidate Starts for Angelique_4:

(Start: 15 @3707 has 17 MA's), (59, 3884), (68, 3935), (71, 3947), (75, 3965), (87, 4016), (88, 4022), (93, 4049), (99, 4112), (101, 4151), (111, 4238),

Gene: Awesomesauce_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for Awesomesauce_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: Axym_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Axym_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (131, 4707), (143, 4773), (147, 4791), (152, 4812),

Gene: Azira_8 Start: 5151, Stop: 5714, Start Num: 46

Candidate Starts for Azira_8:

(9, 5016), (11, 5022), (18, 5040), (Start: 28 @5064 has 2 MA's), (29, 5070), (Start: 46 @5151 has 9 MA's), (Start: 56 @5187 has 4 MA's), (57, 5193), (68, 5250), (81, 5304), (88, 5337), (89, 5340), (95, 5388), (101, 5466), (102, 5469), (105, 5487), (130, 5571), (131, 5577), (135, 5598), (154, 5688),

Gene: B22_5 Start: 3905, Stop: 4687, Start Num: 14

Candidate Starts for B22_5:

(Start: 14 @3905 has 5 MA's), (Start: 46 @4034 has 9 MA's), (74, 4157), (78, 4184), (86, 4229), (94, 4274), (101, 4373), (105, 4394), (124, 4460), (127, 4514), (133, 4547), (139, 4586), (148, 4631), (151, 4649), (157, 4667),

Gene: Bauer_6 Start: 4443, Stop: 5192, Start Num: 14

Candidate Starts for Bauer_6:

(Start: 14 @4443 has 5 MA's), (Start: 26 @4476 has 1 MA's), (32, 4503), (35, 4515), (39, 4542), (43, 4560), (49, 4584), (60, 4632), (62, 4650), (63, 4656), (80, 4737), (83, 4746), (87, 4785), (93, 4818), (100, 4884), (124, 5016), (126, 5055), (128, 5076), (136, 5115), (147, 5172),

Gene: Beakin_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for Beakin_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: BeeGee_4 Start: 3710, Stop: 4522, Start Num: 15

Candidate Starts for BeeGee_4:

(Start: 15 @3710 has 17 MA's), (71, 3950), (99, 4115), (101, 4154), (111, 4241),

Gene: BigChungus_5 Start: 4072, Stop: 4617, Start Num: 46

Candidate Starts for BigChungus_5:

(9, 3934), (11, 3940), (23, 3967), (Start: 28 @3985 has 2 MA's), (Start: 30 @3994 has 2 MA's), (Start: 37 @4024 has 33 MA's), (Start: 46 @4072 has 9 MA's), (Start: 56 @4108 has 4 MA's), (61, 4147), (66, 4159), (75, 4195), (76, 4201), (81, 4219), (101, 4381), (105, 4402), (133, 4483), (135, 4498), (153, 4585),

Gene: BigPhil_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for BigPhil_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: BillDoor_8 Start: 4220, Stop: 4846, Start Num: 37

Candidate Starts for BillDoor_8:

(9, 4133), (11, 4139), (Start: 16 @4148 has 2 MA's), (Start: 37 @4220 has 33 MA's), (Start: 46 @4268 has 9 MA's), (50, 4283), (55, 4301), (61, 4343), (81, 4415), (93, 4475), (95, 4499), (101, 4577), (105, 4598), (108, 4628), (143, 4775), (147, 4793),

Gene: Biskit_7 Start: 4215, Stop: 4838, Start Num: 37

Candidate Starts for Biskit_7:

(9, 4128), (11, 4134), (Start: 37 @4215 has 33 MA's), (Start: 46 @4263 has 9 MA's), (55, 4296), (61, 4338), (81, 4410), (93, 4470), (95, 4494), (101, 4572), (105, 4593), (108, 4623), (143, 4767), (147, 4785),

Gene: BlackSpider_4 Start: 3452, Stop: 4255, Start Num: 14

Candidate Starts for BlackSpider_4:

(Start: 14 @3452 has 5 MA's), (Start: 26 @3485 has 1 MA's), (32, 3512), (35, 3524), (43, 3569), (49, 3593), (60, 3641), (62, 3659), (77, 3734), (84, 3767), (86, 3791), (89, 3803), (93, 3827), (101, 3929),

(108, 3980), (124, 4034), (128, 4094), (137, 4148), (149, 4205),

Gene: Bobi_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Bobi_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Boomer_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Boomer_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Bradissa_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for Bradissa_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: BritBrat_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for BritBrat_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: Burnsey_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Burnsey_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (131, 4707), (143, 4773), (147, 4791), (152, 4812),

Gene: Button_7 Start: 4307, Stop: 4906, Start Num: 37

Candidate Starts for Button_7:

(9, 4214), (Start: 13 @4223 has 2 MA's), (Start: 37 @4307 has 33 MA's), (Start: 46 @4343 has 9 MA's), (50, 4358), (Start: 56 @4379 has 4 MA's), (65, 4439), (88, 4544), (95, 4595), (96, 4601), (101, 4673), (105, 4694), (131, 4766), (133, 4772), (147, 4850),

Gene: Buttrmlkdreams_6 Start: 4216, Stop: 4839, Start Num: 37

Candidate Starts for Buttrmlkdreams_6:

(9, 4129), (11, 4135), (Start: 37 @4216 has 33 MA's), (Start: 46 @4264 has 9 MA's), (50, 4279), (55, 4297), (61, 4339), (81, 4411), (93, 4471), (95, 4495), (101, 4573), (105, 4594), (108, 4624), (143, 4768), (147, 4786),

Gene: BuzzLyseyear_5 Start: 3603, Stop: 4328, Start Num: 12

Candidate Starts for BuzzLyseyear_5:

(Start: 12 @3603 has 53 MA's), (25, 3630), (29, 3651), (36, 3678), (49, 3738), (58, 3777), (78, 3876), (92, 3945), (93, 3948), (112, 4077), (120, 4098), (138, 4206), (160, 4314),

Gene: Carsonalex_7 Start: 4278, Stop: 4901, Start Num: 37

Candidate Starts for Carsonalex_7:

(9, 4188), (11, 4194), (Start: 37 @4278 has 33 MA's), (Start: 46 @4326 has 9 MA's), (52, 4347), (55, 4359), (57, 4368), (61, 4401), (81, 4473), (93, 4533), (101, 4635), (108, 4686), (143, 4830), (147, 4848), (152, 4869),

Gene: Cashline_4 Start: 3710, Stop: 4375, Start Num: 15

Candidate Starts for Cashline_4:

(Start: 15 @3710 has 17 MA's), (Start: 40 @3806 has 1 MA's), (59, 3887), (71, 3950), (88, 4025), (102, 4157), (106, 4199),

Gene: Cerasum_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Cerasum_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: CherryonLim_7 Start: 4771, Stop: 5343, Start Num: 40

Candidate Starts for CherryonLim_7:

(9, 4660), (11, 4666), (23, 4693), (Start: 28 @4711 has 2 MA's), (Start: 30 @4720 has 2 MA's), (Start: 37 @4750 has 33 MA's), (Start: 40 @4771 has 1 MA's), (Start: 46 @4798 has 9 MA's), (61, 4873), (66, 4885), (75, 4921), (76, 4927), (81, 4945), (101, 5107), (105, 5128), (131, 5203), (133, 5209), (135, 5224), (153, 5311),

Gene: ChickenDinner_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for ChickenDinner_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: Cleo_6 Start: 4357, Stop: 5013, Start Num: 28

Candidate Starts for Cleo_6:

(9, 4306), (11, 4312), (18, 4333), (Start: 28 @4357 has 2 MA's), (Start: 46 @4444 has 9 MA's), (47, 4447), (50, 4459), (Start: 56 @4480 has 4 MA's), (57, 4486), (68, 4543), (81, 4597), (88, 4630), (101, 4759), (102, 4762), (105, 4780), (107, 4804), (130, 4870), (135, 4897),

Gene: Coco12_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Coco12_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Confidence_4 Start: 3710, Stop: 4522, Start Num: 15

Candidate Starts for Confidence_4:

(Start: 15 @3710 has 17 MA's), (71, 3950), (99, 4115), (101, 4154), (111, 4241),

Gene: Cornucopia_5 Start: 3606, Stop: 4331, Start Num: 12

Candidate Starts for Cornucopia_5:

(Start: 12 @3606 has 53 MA's), (25, 3633), (27, 3642), (35, 3678), (Start: 37 @3687 has 33 MA's), (Start: 46 @3729 has 9 MA's), (52, 3750), (53, 3753), (58, 3780), (78, 3879), (92, 3948), (93, 3951), (112, 4080), (120, 4101), (133, 4173), (160, 4317),

Gene: Cozz_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Cozz_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (131, 4707), (143, 4773), (147, 4791), (152, 4812),

Gene: DaWorst_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for DaWorst_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: DirtMcgirt_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for DirtMcgirt_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: DocMcStuffins_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for DocMcStuffins_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: DosHalletts_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for DosHalletts_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Doucette_5 Start: 3905, Stop: 4690, Start Num: 14

Candidate Starts for Doucette_5:

(Start: 14 @3905 has 5 MA's), (Start: 46 @4034 has 9 MA's), (74, 4160), (78, 4187), (86, 4232), (94, 4277), (101, 4376), (105, 4397), (124, 4463), (127, 4517), (133, 4550), (139, 4589), (148, 4634), (151, 4652), (157, 4670),

Gene: Drago_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Drago_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Dre3_6 Start: 4388, Stop: 4960, Start Num: 46

Candidate Starts for Dre3_6:

(9, 4250), (11, 4256), (18, 4277), (Start: 28 @4301 has 2 MA's), (Start: 46 @4388 has 9 MA's), (47, 4391), (50, 4403), (Start: 56 @4424 has 4 MA's), (57, 4430), (68, 4490), (81, 4544), (88, 4577), (101, 4706), (102, 4709), (105, 4727), (107, 4751), (130, 4817), (135, 4844),

Gene: E6_5 Start: 3906, Stop: 4670, Start Num: 14

Candidate Starts for E6_5:

(Start: 14 @3906 has 5 MA's), (Start: 46 @4035 has 9 MA's), (74, 4161), (78, 4188), (86, 4233), (94, 4278), (101, 4377), (105, 4398), (124, 4464), (127, 4518), (133, 4551), (139, 4590), (148, 4635), (155, 4656),

Gene: EMSquaredA_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for EMSquaredA_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: Elinal_7 Start: 4002, Stop: 4595, Start Num: 37

Candidate Starts for Elinal_7:

(9, 3912), (11, 3918), (23, 3945), (Start: 28 @3963 has 2 MA's), (Start: 30 @3972 has 2 MA's), (Start: 37 @4002 has 33 MA's), (Start: 46 @4050 has 9 MA's), (Start: 56 @4086 has 4 MA's), (61, 4125), (66, 4137), (75, 4173), (76, 4179), (81, 4197), (101, 4359), (133, 4461), (135, 4476), (153, 4563),

Gene: Elliott_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Elliott_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (143, 4773), (147, 4791), (152, 4812),

Gene: Emalyn_5 Start: 3913, Stop: 4572, Start Num: 37

Candidate Starts for Emalyn_5:

(9, 3826), (11, 3832), (Start: 37 @3913 has 33 MA's), (Start: 46 @3961 has 9 MA's), (50, 3976), (52, 3982), (55, 3994), (81, 4108), (91, 4156), (101, 4270), (105, 4291), (108, 4321), (147, 4516), (153, 4543),

Gene: EnalisNailo_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for EnalisNailo_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: Enby_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Enby_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Farewell_4 Start: 3759, Stop: 4664, Start Num: 3

Candidate Starts for Farewell_4:

(Start: 3 @3759 has 2 MA's), (10, 3825), (18, 3849), (25, 3855), (27, 3864), (33, 3891), (45, 3951), (48, 3963), (Start: 51 @3972 has 1 MA's), (53, 3978), (69, 4065), (70, 4068), (81, 4113), (89, 4149), (93, 4173), (118, 4383), (122, 4407), (131, 4488), (133, 4494), (138, 4530), (158, 4617), (159, 4626), (160, 4638),

Gene: Feastonyeet_5 Start: 4072, Stop: 4617, Start Num: 46

Candidate Starts for Feastonyeet_5:

(9, 3934), (11, 3940), (23, 3967), (Start: 28 @3985 has 2 MA's), (Start: 30 @3994 has 2 MA's), (Start: 37 @4024 has 33 MA's), (Start: 46 @4072 has 9 MA's), (Start: 56 @4108 has 4 MA's), (61, 4147), (66, 4159), (75, 4195), (76, 4201), (81, 4219), (101, 4381), (105, 4402), (133, 4483), (135, 4498), (153, 4585),

Gene: Flathead_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Flathead_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Floral_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for Floral_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: Frankie_5 Start: 3798, Stop: 4523, Start Num: 12

Candidate Starts for Frankie_5:

(5, 3744), (Start: 12 @3798 has 53 MA's), (27, 3834), (36, 3873), (49, 3933), (58, 3972), (78, 4071), (92, 4140), (93, 4143), (112, 4272), (120, 4293), (138, 4401), (160, 4509),

Gene: Fribs8_7 Start: 4879, Stop: 5508, Start Num: 34

Candidate Starts for Fribs8_7:

(9, 4804), (11, 4810), (18, 4828), (Start: 28 @4852 has 2 MA's), (Start: 34 @4879 has 1 MA's), (Start: 46 @4939 has 9 MA's), (47, 4942), (Start: 56 @4975 has 4 MA's), (57, 4981), (68, 5038), (81, 5092), (88, 5125), (89, 5128), (101, 5254), (102, 5257), (105, 5275), (130, 5365), (135, 5392),

Gene: G4_5 Start: 3905, Stop: 4669, Start Num: 14

Candidate Starts for G4_5:

(Start: 14 @3905 has 5 MA's), (Start: 46 @4034 has 9 MA's), (57, 4076), (74, 4160), (78, 4187), (86, 4232), (94, 4277), (101, 4376), (105, 4397), (124, 4463), (127, 4517), (133, 4550), (139, 4589), (148, 4634),

Gene: GTE2_04 Start: 3827, Stop: 4531, Start Num: 11

Candidate Starts for GTE2_04:

(9, 3821), (11, 3827), (Start: 16 @3836 has 2 MA's), (Start: 37 @3908 has 33 MA's), (Start: 46 @3956 has 9 MA's), (50, 3971), (55, 3989), (61, 4031), (81, 4103), (93, 4163), (95, 4187), (101, 4265), (105, 4286), (108, 4316), (143, 4460), (147, 4478),

Gene: GiKK_9 Start: 4616, Stop: 5209, Start Num: 37

Candidate Starts for GiKK_9:

(9, 4523), (Start: 13 @4532 has 2 MA's), (23, 4559), (Start: 37 @4616 has 33 MA's), (Start: 46 @4652 has 9 MA's), (50, 4667), (Start: 56 @4688 has 4 MA's), (88, 4847), (91, 4862), (95, 4898), (96, 4904), (101, 4976), (105, 4997), (133, 5075), (147, 5153),

Gene: Gibbous_6 Start: 4388, Stop: 4960, Start Num: 46

Candidate Starts for Gibbous_6:

(9, 4250), (11, 4256), (18, 4277), (Start: 28 @4301 has 2 MA's), (Start: 46 @4388 has 9 MA's), (47, 4391), (50, 4403), (Start: 56 @4424 has 4 MA's), (57, 4430), (68, 4490), (81, 4544), (88, 4577), (101, 4706), (102, 4709), (105, 4727), (107, 4751), (130, 4817), (135, 4844),

Gene: Girafales_5 Start: 3602, Stop: 4327, Start Num: 12

Candidate Starts for Girafales_5:

(Start: 12 @3602 has 53 MA's), (25, 3629), (27, 3638), (31, 3659), (35, 3674), (36, 3677), (Start: 37 @3683 has 33 MA's), (Start: 46 @3725 has 9 MA's), (52, 3746), (53, 3749), (58, 3776), (78, 3875), (92, 3944), (93, 3947), (97, 3983), (112, 4076), (120, 4097), (133, 4169), (160, 4313),

Gene: GoldHunter_7 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for GoldHunter_7:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (131, 4707), (143, 4773), (147, 4791), (152, 4812),

Gene: Hegedechwinu_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Hegedechwinu_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: HippoPololi_8 Start: 5028, Stop: 5600, Start Num: 46

Candidate Starts for HippoPololi_8:

(9, 4890), (10, 4893), (11, 4896), (Start: 28 @4941 has 2 MA's), (Start: 46 @5028 has 9 MA's), (47, 5031), (Start: 56 @5064 has 4 MA's), (57, 5070), (68, 5130), (81, 5184), (88, 5217), (89, 5220), (93, 5244), (95, 5268), (101, 5346), (102, 5349), (105, 5367), (130, 5457), (131, 5463), (135, 5484),

Gene: Horseradish_7 Start: 4122, Stop: 4745, Start Num: 37

Candidate Starts for Horseradish_7:

(9, 4035), (11, 4041), (Start: 37 @4122 has 33 MA's), (Start: 46 @4170 has 9 MA's), (55, 4203), (61, 4245), (81, 4317), (93, 4377), (95, 4401), (101, 4479), (105, 4500), (108, 4530), (143, 4674), (147, 4692),

Gene: Jablanski_4 Start: 3710, Stop: 4375, Start Num: 15

Candidate Starts for Jablanski_4:

(Start: 15 @3710 has 17 MA's), (59, 3887), (71, 3950), (88, 4025), (102, 4157), (106, 4199),

Gene: JacoRen57_4 Start: 3951, Stop: 4562, Start Num: 51

Candidate Starts for JacoRen57_4:

(21, 3834), (41, 3909), (Start: 46 @3933 has 9 MA's), (Start: 51 @3951 has 1 MA's), (53, 3957), (98, 4191), (119, 4344), (125, 4368), (134, 4431), (138, 4461), (142, 4482),

Gene: JalFarm20_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for JalFarm20_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Jamzy_9 Start: 4537, Stop: 5217, Start Num: 13

Candidate Starts for Jamzy_9:

(9, 4528), (Start: 13 @4537 has 2 MA's), (23, 4564), (Start: 37 @4621 has 33 MA's), (Start: 46 @4657 has 9 MA's), (Start: 56 @4693 has 4 MA's), (57, 4699), (66, 4759), (69, 4768), (88, 4852), (91, 4867), (95, 4903), (96, 4909), (100, 4948), (101, 4981), (105, 5002), (107, 5026), (133, 5083), (147, 5161),

Gene: Job42_5 Start: 3603, Stop: 4328, Start Num: 12

Candidate Starts for Job42_5:

(Start: 12 @3603 has 53 MA's), (25, 3630), (29, 3651), (36, 3678), (49, 3738), (58, 3777), (78, 3876), (92, 3945), (93, 3948), (112, 4077), (120, 4098), (138, 4206), (150, 4266), (160, 4314),

Gene: Juice456_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Juice456_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: KayGee_6 Start: 4002, Stop: 4595, Start Num: 37

Candidate Starts for KayGee_6:

(9, 3912), (11, 3918), (23, 3945), (Start: 28 @3963 has 2 MA's), (Start: 30 @3972 has 2 MA's), (Start: 37 @4002 has 33 MA's), (Start: 46 @4050 has 9 MA's), (Start: 56 @4086 has 4 MA's), (61, 4125), (66, 4137), (75, 4173), (76, 4179), (81, 4197), (101, 4359), (133, 4461), (135, 4476), (153, 4563),

Gene: Kimberlium_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Kimberlium_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: Kingsley_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Kingsley_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Lauer_5 Start: 4024, Stop: 4647, Start Num: 30

Candidate Starts for Lauer_5:

(9, 3964), (11, 3970), (23, 3997), (Start: 28 @4015 has 2 MA's), (Start: 30 @4024 has 2 MA's), (Start: 37 @4054 has 33 MA's), (Start: 46 @4102 has 9 MA's), (Start: 56 @4138 has 4 MA's), (61, 4177), (66, 4189), (75, 4225), (76, 4231), (81, 4249), (101, 4411), (131, 4507), (133, 4513), (135, 4528), (153, 4615),

Gene: Leozinho_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Leozinho_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: LilSpotty_4 Start: 3229, Stop: 3888, Start Num: 16

Candidate Starts for LilSpotty_4:

(6, 3193), (10, 3214), (Start: 16 @3229 has 2 MA's), (29, 3271), (Start: 37 @3304 has 33 MA's), (60, 3412), (66, 3451), (87, 3529), (93, 3562), (97, 3598), (101, 3664), (110, 3748), (111, 3751), (114, 3787),

Gene: Lilas_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for Lilas_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: LittleShirley_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for LittleShirley_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: LonelyBoi_4 Start: 3710, Stop: 4375, Start Num: 15

Candidate Starts for LonelyBoi_4:

(Start: 15 @3710 has 17 MA's), (59, 3887), (71, 3950), (75, 3968), (88, 4025), (102, 4157), (106, 4199),

Gene: Lorde_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Lorde_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: LunaStella_4 Start: 3803, Stop: 4498, Start Num: 56

Candidate Starts for LunaStella_4:

(Start: 15 @3644 has 17 MA's), (17, 3650), (Start: 56 @3803 has 4 MA's), (59, 3821), (67, 3869), (74, 3893), (81, 3926), (87, 3950), (91, 3971), (93, 3983), (97, 4019), (99, 4046), (101, 4085), (102, 4088), (109, 4151), (112, 4190), (115, 4226), (118, 4244), (121, 4256), (131, 4355), (138, 4397),

Gene: MAnor_6 Start: 3999, Stop: 4592, Start Num: 37

Candidate Starts for MAnor_6:

(9, 3909), (11, 3915), (23, 3942), (Start: 28 @3960 has 2 MA's), (Start: 30 @3969 has 2 MA's), (Start: 37 @3999 has 33 MA's), (Start: 46 @4047 has 9 MA's), (61, 4122), (66, 4134), (75, 4170), (76, 4176), (81, 4194), (101, 4356), (105, 4377), (131, 4452), (133, 4458), (135, 4473), (153, 4560),

Gene: MScarn_8 Start: 4216, Stop: 4839, Start Num: 37

Candidate Starts for MScarn_8:

(9, 4129), (11, 4135), (Start: 37 @4216 has 33 MA's), (Start: 46 @4264 has 9 MA's), (50, 4279), (55, 4297), (61, 4339), (81, 4411), (93, 4471), (95, 4495), (101, 4573), (105, 4594), (108, 4624), (143, 4768), (147, 4786),

Gene: MaVan_8 Start: 5151, Stop: 5714, Start Num: 46

Candidate Starts for MaVan_8:

(9, 5016), (11, 5022), (18, 5040), (Start: 28 @5064 has 2 MA's), (29, 5070), (Start: 46 @5151 has 9 MA's), (Start: 56 @5187 has 4 MA's), (57, 5193), (68, 5250), (81, 5304), (88, 5337), (89, 5340), (95, 5388), (101, 5466), (102, 5469), (105, 5487), (130, 5571), (131, 5577), (135, 5598), (154, 5688),

Gene: Maco6_5 Start: 4321, Stop: 4809, Start Num: 73

Candidate Starts for Maco6_5:

(4, 4018), (Start: 24 @4102 has 1 MA's), (Start: 37 @4159 has 33 MA's), (Start: 73 @4321 has 1 MA's), (97, 4450), (103, 4522), (107, 4558), (112, 4588), (117, 4594), (119, 4609), (125, 4633), (129, 4675), (141, 4732), (156, 4789),

Gene: Madiba_5 Start: 3603, Stop: 4328, Start Num: 12

Candidate Starts for Madiba_5:

(Start: 12 @3603 has 53 MA's), (25, 3630), (29, 3651), (36, 3678), (49, 3738), (58, 3777), (78, 3876), (92, 3945), (93, 3948), (112, 4077), (120, 4098), (138, 4206), (160, 4314),

Gene: Margaret_9 Start: 4991, Stop: 5593, Start Num: 37

Candidate Starts for Margaret_9:

(9, 4898), (Start: 13 @4907 has 2 MA's), (23, 4934), (Start: 37 @4991 has 33 MA's), (Start: 46 @5027 has 9 MA's), (Start: 56 @5063 has 4 MA's), (57, 5069), (88, 5228), (91, 5243), (95, 5279), (96, 5285), (100, 5324), (101, 5357), (105, 5378), (107, 5402), (133, 5459), (147, 5537),

Gene: Marker_5 Start: 3603, Stop: 4328, Start Num: 12

Candidate Starts for Marker_5:

(Start: 12 @3603 has 53 MA's), (25, 3630), (29, 3651), (36, 3678), (49, 3738), (58, 3777), (64, 3816), (78, 3876), (92, 3945), (93, 3948), (112, 4077), (120, 4098), (138, 4206), (160, 4314),

Gene: Marteena_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for Marteena_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: Mayweather_7 Start: 4620, Stop: 5213, Start Num: 37

Candidate Starts for Mayweather_7:

(9, 4530), (11, 4536), (23, 4563), (Start: 28 @4581 has 2 MA's), (Start: 30 @4590 has 2 MA's), (Start: 37 @4620 has 33 MA's), (Start: 46 @4668 has 9 MA's), (61, 4743), (66, 4755), (75, 4791), (76, 4797), (81, 4815), (101, 4977), (105, 4998), (131, 5073), (133, 5079), (135, 5094), (153, 5181),

Gene: Misha28_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for Misha28_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: Mova_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Mova_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: Mozy_5 Start: 3603, Stop: 4328, Start Num: 12

Candidate Starts for Mozy_5:

(Start: 12 @3603 has 53 MA's), (25, 3630), (27, 3639), (35, 3675), (36, 3678), (Start: 37 @3684 has 33 MA's), (Start: 46 @3726 has 9 MA's), (52, 3747), (53, 3750), (58, 3777), (78, 3876), (92, 3945), (93, 3948), (112, 4077), (120, 4098), (133, 4170), (160, 4314),

Gene: MrSmee_4 Start: 3158, Stop: 3907, Start Num: 14

Candidate Starts for MrSmee_4:

(Start: 14 @3158 has 5 MA's), (19, 3176), (25, 3185), (Start: 30 @3209 has 2 MA's), (31, 3215), (35, 3230), (Start: 37 @3239 has 33 MA's), (38, 3251), (39, 3257), (42, 3272), (49, 3299), (53, 3311), (71, 3413), (91, 3512), (93, 3524), (95, 3548), (102, 3635), (127, 3788),

Gene: Muddy_7 Start: 5056, Stop: 5763, Start Num: 24

Candidate Starts for Muddy_7:

(Start: 24 @5056 has 1 MA's), (Start: 37 @5113 has 33 MA's), (Start: 73 @5275 has 1 MA's), (97, 5404), (103, 5476), (107, 5512), (112, 5542), (117, 5548), (119, 5563), (125, 5587), (129, 5629), (141, 5686), (156, 5743),

Gene: MulchExplorer_5 Start: 3632, Stop: 4330, Start Num: 25

Candidate Starts for MulchExplorer_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: MunkgeeRoachy_6 Start: 4269, Stop: 4892, Start Num: 37

Candidate Starts for MunkgeeRoachy_6:

(9, 4179), (11, 4185), (Start: 37 @4269 has 33 MA's), (Start: 46 @4317 has 9 MA's), (52, 4338), (55, 4350), (57, 4359), (61, 4392), (81, 4464), (93, 4524), (101, 4626), (108, 4677), (131, 4755), (143, 4821), (147, 4839), (152, 4860),

Gene: Nibbles_8 Start: 5151, Stop: 5714, Start Num: 46

Candidate Starts for Nibbles_8:

(9, 5016), (11, 5022), (18, 5040), (Start: 28 @5064 has 2 MA's), (29, 5070), (Start: 46 @5151 has 9 MA's), (Start: 56 @5187 has 4 MA's), (57, 5193), (68, 5250), (81, 5304), (88, 5337), (89, 5340), (95, 5388), (101, 5466), (102, 5469), (105, 5487), (130, 5571), (131, 5577), (135, 5598), (154, 5688),

Gene: NoShow_4 Start: 3865, Stop: 4563, Start Num: 22

Candidate Starts for NoShow_4:

(20, 3862), (Start: 22 @3865 has 1 MA's), (44, 3958), (54, 3988), (81, 4123), (97, 4213), (119, 4372), (125, 4396), (129, 4438),

Gene: Oksu_5 Start: 3680, Stop: 4330, Start Num: 36

Candidate Starts for Oksu_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: OwlsT2W_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for OwlsT2W_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: P3MA_5 Start: 3858, Stop: 4730, Start Num: 16

Candidate Starts for P3MA_5:

(1, 3546), (2, 3741), (Start: 16 @3858 has 2 MA's), (81, 4140), (95, 4215), (102, 4296), (113, 4404), (116, 4437), (123, 4479), (132, 4563), (133, 4566), (145, 4635), (160, 4710),

Gene: Piper2020_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for Piper2020_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: Plumbus_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Plumbus_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: Pollux_4 Start: 3716, Stop: 4528, Start Num: 15

Candidate Starts for Pollux_4:

(Start: 15 @3716 has 17 MA's), (Start: 37 @3791 has 33 MA's), (75, 3974), (88, 4031), (99, 4121), (101, 4160), (111, 4247),

Gene: Pollywog_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Pollywog_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Pons_6 Start: 3999, Stop: 4592, Start Num: 37

Candidate Starts for Pons_6:

(9, 3909), (11, 3915), (23, 3942), (Start: 28 @3960 has 2 MA's), (Start: 30 @3969 has 2 MA's), (Start: 37 @3999 has 33 MA's), (Start: 46 @4047 has 9 MA's), (61, 4122), (66, 4134), (75, 4170), (76, 4176), (81, 4194), (101, 4356), (105, 4377), (131, 4452), (133, 4458), (135, 4473), (153, 4560),

Gene: Posh_4 Start: 3710, Stop: 4522, Start Num: 15

Candidate Starts for Posh_4:

(Start: 15 @3710 has 17 MA's), (71, 3950), (99, 4115), (101, 4154), (111, 4241),

Gene: PotPie_6 Start: 4858, Stop: 5451, Start Num: 37

Candidate Starts for PotPie_6:

(9, 4768), (11, 4774), (23, 4801), (Start: 28 @4819 has 2 MA's), (Start: 30 @4828 has 2 MA's), (Start: 37 @4858 has 33 MA's), (Start: 46 @4906 has 9 MA's), (Start: 56 @4942 has 4 MA's), (61, 4981), (66, 4993), (75, 5029), (76, 5035), (81, 5053), (101, 5215), (105, 5236), (131, 5311), (133, 5317), (135, 5332), (153, 5419),

Gene: PsychoKiller_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for PsychoKiller_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (143, 4773), (147, 4791), (152, 4812),

Gene: Pytheas_4 Start: 3710, Stop: 4375, Start Num: 15

Candidate Starts for Pytheas_4:

(Start: 15 @3710 has 17 MA's), (59, 3887), (71, 3950), (88, 4025), (102, 4157), (106, 4199),

Gene: Quasar_6 Start: 4890, Stop: 5465, Start Num: 46

Candidate Starts for Quasar_6:

(9, 4752), (11, 4758), (Start: 37 @4842 has 33 MA's), (Start: 46 @4890 has 9 MA's), (52, 4911), (55, 4923), (57, 4932), (61, 4965), (81, 5037), (93, 5097), (101, 5199), (108, 5250), (131, 5328), (143, 5394), (147, 5412), (152, 5433),

Gene: Quico_5 Start: 3602, Stop: 4327, Start Num: 12

Candidate Starts for Quico_5:

(Start: 12 @3602 has 53 MA's), (25, 3629), (27, 3638), (31, 3659), (35, 3674), (36, 3677), (Start: 37 @3683 has 33 MA's), (Start: 46 @3725 has 9 MA's), (52, 3746), (53, 3749), (58, 3776), (78, 3875), (92, 3944), (93, 3947), (97, 3983), (112, 4076), (120, 4097), (133, 4169), (160, 4313),

Gene: Ramsey_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Ramsey_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: RanchParmCat_9 Start: 4991, Stop: 5593, Start Num: 37

Candidate Starts for RanchParmCat_9:

(9, 4898), (Start: 13 @4907 has 2 MA's), (23, 4934), (Start: 37 @4991 has 33 MA's), (Start: 46 @5027 has 9 MA's), (Start: 56 @5063 has 4 MA's), (88, 5228), (91, 5243), (95, 5279), (96, 5285), (100, 5324), (101, 5357), (105, 5378), (107, 5402), (133, 5459), (147, 5537),

Gene: Raqqa_5 Start: 3858, Stop: 4661, Start Num: 14

Candidate Starts for Raqqa_5:

(Start: 14 @3858 has 5 MA's), (Start: 30 @3909 has 2 MA's), (39, 3957), (53, 4011), (71, 4113), (85, 4212), (88, 4251), (91, 4266), (95, 4302), (101, 4386), (102, 4389), (124, 4488), (127, 4542),

Gene: RedBaron_7 Start: 4266, Stop: 4889, Start Num: 37

Candidate Starts for RedBaron_7:

(9, 4176), (11, 4182), (Start: 37 @4266 has 33 MA's), (Start: 46 @4314 has 9 MA's), (52, 4335), (55, 4347), (57, 4356), (61, 4389), (81, 4461), (93, 4521), (101, 4623), (108, 4674), (131, 4752), (143, 4818), (152, 4857),

Gene: Renaud18_4 Start: 3803, Stop: 4378, Start Num: 56

Candidate Starts for Renaud18_4:

(Start: 15 @3644 has 17 MA's), (17, 3650), (Start: 56 @3803 has 4 MA's), (59, 3821), (66, 3866), (67, 3869), (74, 3893), (81, 3926), (87, 3950), (91, 3971), (93, 3983), (97, 4019), (99, 4046), (101, 4085), (102, 4088), (104, 4115), (131, 4235), (138, 4277),

Gene: Rialto_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Rialto_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: RockyHorror_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for RockyHorror_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Sarma624_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Sarma624_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Seagreen_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Seagreen_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: SheckWes_5 Start: 3999, Stop: 4592, Start Num: 37

Candidate Starts for SheckWes_5:

(9, 3909), (11, 3915), (23, 3942), (Start: 28 @3960 has 2 MA's), (Start: 30 @3969 has 2 MA's), (Start: 37 @3999 has 33 MA's), (Start: 46 @4047 has 9 MA's), (61, 4122), (66, 4134), (75, 4170), (76, 4176), (81, 4194), (101, 4356), (105, 4377), (131, 4452), (133, 4458), (135, 4473), (153, 4560),

Gene: SimranZ1_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for SimranZ1_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: SketchMex_5 Start: 4215, Stop: 4838, Start Num: 37

Candidate Starts for SketchMex_5:

(9, 4128), (11, 4134), (Start: 37 @4215 has 33 MA's), (Start: 46 @4263 has 9 MA's), (55, 4296), (61, 4338), (81, 4410), (93, 4470), (95, 4494), (101, 4572), (105, 4593), (108, 4623), (143, 4767), (147, 4785),

Gene: Sopespian_6 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Sopespian_6:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (143, 4773), (147, 4791), (152, 4812),

Gene: Sparky_4 Start: 3760, Stop: 4665, Start Num: 3

Candidate Starts for Sparky_4:

(Start: 3 @3760 has 2 MA's), (18, 3850), (25, 3856), (27, 3865), (33, 3892), (45, 3952), (48, 3964), (Start: 51 @3973 has 1 MA's), (53, 3979), (69, 4066), (70, 4069), (89, 4150), (93, 4174), (118, 4384), (122, 4408), (131, 4489), (133, 4495), (138, 4531), (158, 4618), (159, 4627), (160, 4639),

Gene: Spartoi_4 Start: 3328, Stop: 4098, Start Num: 8

Candidate Starts for Spartoi_4:

(7, 3322), (Start: 8 @3328 has 1 MA's), (Start: 37 @3427 has 33 MA's), (64, 3565), (72, 3604), (79, 3643), (82, 3652), (92, 3715), (100, 3790), (101, 3826), (105, 3847), (118, 3916), (140, 4057),

Gene: Spikelee_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Spikelee_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Squirty_5 Start: 3603, Stop: 4328, Start Num: 12

Candidate Starts for Squirty_5:

(Start: 12 @3603 has 53 MA's), (25, 3630), (29, 3651), (36, 3678), (49, 3738), (58, 3777), (78, 3876), (92, 3945), (93, 3948), (112, 4077), (120, 4098), (138, 4206), (160, 4314),

Gene: Stap_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Stap_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Starcevich_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Starcevich_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: SteamedHams_8 Start: 4225, Stop: 4881, Start Num: 37

Candidate Starts for SteamedHams_8:

(9, 4138), (11, 4144), (Start: 16 @4153 has 2 MA's), (Start: 37 @4225 has 33 MA's), (Start: 46 @4273 has 9 MA's), (50, 4288), (55, 4306), (61, 4348), (81, 4420), (93, 4480), (95, 4504), (101, 4582), (108,

4633), (138, 4786), (147, 4828),

Gene: SummitAcademy_5 Start: 4073, Stop: 4666, Start Num: 37

Candidate Starts for SummitAcademy_5:

(9, 3983), (11, 3989), (23, 4016), (Start: 28 @4034 has 2 MA's), (Start: 30 @4043 has 2 MA's), (Start: 37 @4073 has 33 MA's), (Start: 46 @4121 has 9 MA's), (Start: 56 @4157 has 4 MA's), (61, 4196), (66, 4208), (75, 4244), (76, 4250), (81, 4268), (101, 4430), (105, 4451), (131, 4526), (133, 4532), (135, 4547), (153, 4634),

Gene: Survivors_8 Start: 4918, Stop: 5568, Start Num: 28

Candidate Starts for Survivors_8:

(9, 4870), (11, 4876), (18, 4894), (Start: 28 @4918 has 2 MA's), (29, 4924), (Start: 46 @5005 has 9 MA's), (Start: 56 @5041 has 4 MA's), (57, 5047), (68, 5104), (81, 5158), (88, 5191), (89, 5194), (101, 5320), (102, 5323), (105, 5341), (130, 5425), (131, 5431), (135, 5452), (154, 5542),

Gene: SweatNTears_8 Start: 4742, Stop: 5365, Start Num: 37

Candidate Starts for SweatNTears_8:

(9, 4655), (11, 4661), (Start: 37 @4742 has 33 MA's), (Start: 46 @4790 has 9 MA's), (55, 4823), (61, 4865), (81, 4937), (93, 4997), (95, 5021), (101, 5099), (105, 5120), (108, 5150), (143, 5294), (147, 5312),

Gene: TChen_4 Start: 3803, Stop: 4498, Start Num: 56

Candidate Starts for TChen_4:

(Start: 15 @3644 has 17 MA's), (17, 3650), (Start: 56 @3803 has 4 MA's), (59, 3821), (67, 3869), (74, 3893), (81, 3926), (87, 3950), (91, 3971), (93, 3983), (97, 4019), (99, 4046), (101, 4085), (102, 4088), (109, 4151), (112, 4190), (115, 4226), (118, 4244), (121, 4256), (131, 4355), (138, 4397),

Gene: ThetaBob_4 Start: 3803, Stop: 4378, Start Num: 56

Candidate Starts for ThetaBob_4:

(Start: 15 @3644 has 17 MA's), (17, 3650), (Start: 56 @3803 has 4 MA's), (59, 3821), (67, 3869), (74, 3893), (81, 3926), (87, 3950), (91, 3971), (93, 3983), (97, 4019), (99, 4046), (101, 4085), (102, 4088), (104, 4115), (131, 4235), (138, 4277),

Gene: Tolls_8 Start: 4226, Stop: 4885, Start Num: 37

Candidate Starts for Tolls_8:

(9, 4139), (11, 4145), (Start: 37 @4226 has 33 MA's), (Start: 46 @4274 has 9 MA's), (50, 4289), (55, 4307), (61, 4349), (81, 4421), (93, 4481), (95, 4505), (101, 4583), (108, 4634), (138, 4787), (147, 4829), (153, 4856),

Gene: TootsiePop_5 Start: 3607, Stop: 4332, Start Num: 12

Candidate Starts for TootsiePop_5:

(Start: 12 @3607 has 53 MA's), (25, 3634), (29, 3655), (36, 3682), (49, 3742), (58, 3781), (78, 3880), (92, 3949), (93, 3952), (112, 4081), (120, 4102), (138, 4210), (160, 4318),

Gene: Tootsieroll_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Tootsieroll_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Toron_4 Start: 3803, Stop: 4498, Start Num: 56

Candidate Starts for Toron_4:

(Start: 15 @3644 has 17 MA's), (17, 3650), (52, 3788), (Start: 56 @3803 has 4 MA's), (59, 3821), (67, 3869), (74, 3893), (81, 3926), (87, 3950), (91, 3971), (93, 3983), (97, 4019), (99, 4046), (101, 4085),

(102, 4088), (108, 4148), (109, 4151), (112, 4190), (118, 4244), (121, 4256), (131, 4355), (138, 4397),

Gene: Totinger_5 Start: 3605, Stop: 4330, Start Num: 12

Candidate Starts for Totinger_5:

(Start: 12 @3605 has 53 MA's), (25, 3632), (29, 3653), (36, 3680), (49, 3740), (58, 3779), (78, 3878), (92, 3947), (93, 3950), (112, 4079), (120, 4100), (138, 4208), (160, 4316),

Gene: Troje_6 Start: 4216, Stop: 4839, Start Num: 37

Candidate Starts for Troje_6:

(9, 4129), (11, 4135), (Start: 37 @4216 has 33 MA's), (Start: 46 @4264 has 9 MA's), (50, 4279), (55, 4297), (61, 4339), (81, 4411), (93, 4471), (95, 4495), (101, 4573), (105, 4594), (108, 4624), (143, 4768), (147, 4786),

Gene: Typhonomachy_7 Start: 4221, Stop: 4844, Start Num: 37

Candidate Starts for Typhonomachy_7:

(9, 4131), (11, 4137), (Start: 37 @4221 has 33 MA's), (Start: 46 @4269 has 9 MA's), (52, 4290), (55, 4302), (57, 4311), (61, 4344), (81, 4416), (93, 4476), (101, 4578), (108, 4629), (131, 4707), (143, 4773), (147, 4791), (152, 4812),

Gene: UncleRicky_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for UncleRicky_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Velveteen_5 Start: 3604, Stop: 4329, Start Num: 12

Candidate Starts for Velveteen_5:

(Start: 12 @3604 has 53 MA's), (25, 3631), (29, 3652), (36, 3679), (49, 3739), (58, 3778), (78, 3877), (92, 3946), (93, 3949), (112, 4078), (120, 4099), (138, 4207), (160, 4315),

Gene: Vine_7 Start: 4967, Stop: 5590, Start Num: 30

Candidate Starts for Vine_7:

(9, 4907), (11, 4913), (23, 4940), (Start: 28 @4958 has 2 MA's), (Start: 30 @4967 has 2 MA's), (Start: 37 @4997 has 33 MA's), (Start: 46 @5045 has 9 MA's), (Start: 56 @5081 has 4 MA's), (61, 5120), (66, 5132), (75, 5168), (76, 5174), (81, 5192), (101, 5354), (133, 5456), (135, 5471), (153, 5558),

Gene: Wrigley_4 Start: 3707, Stop: 4372, Start Num: 15

Candidate Starts for Wrigley_4:

(Start: 15 @3707 has 17 MA's), (71, 3947), (88, 4022), (102, 4154), (106, 4196),

Gene: Yakult_7 Start: 4190, Stop: 4777, Start Num: 37

Candidate Starts for Yakult_7:

(9, 4097), (Start: 13 @4106 has 2 MA's), (27, 4145), (29, 4157), (Start: 37 @4190 has 33 MA's), (Start: 46 @4226 has 9 MA's), (50, 4241), (88, 4412), (96, 4469), (101, 4541), (105, 4562), (107, 4586), (133, 4643), (147, 4721),

Gene: Yarn_5 Start: 4219, Stop: 4875, Start Num: 37

Candidate Starts for Yarn_5:

(9, 4132), (11, 4138), (Start: 16 @4147 has 2 MA's), (Start: 37 @4219 has 33 MA's), (Start: 46 @4267 has 9 MA's), (50, 4282), (55, 4300), (61, 4342), (81, 4414), (93, 4474), (95, 4498), (101, 4576), (108, 4627), (143, 4804), (147, 4822),

Gene: Yummy_7 Start: 4122, Stop: 4745, Start Num: 37

Candidate Starts for Yummy_7:

(9, 4035), (11, 4041), (Start: 37 @4122 has 33 MA's), (Start: 46 @4170 has 9 MA's), (55, 4203), (61, 4245), (81, 4317), (93, 4377), (95, 4401), (101, 4479), (105, 4500), (108, 4530), (143, 4674), (147, 4692),

Gene: Zareef_9 Start: 5152, Stop: 5715, Start Num: 46

Candidate Starts for Zareef_9:

(9, 5017), (11, 5023), (18, 5041), (Start: 28 @5065 has 2 MA's), (29, 5071), (Start: 46 @5152 has 9 MA's), (Start: 56 @5188 has 4 MA's), (57, 5194), (68, 5251), (81, 5305), (88, 5338), (89, 5341), (95, 5389), (101, 5467), (102, 5470), (105, 5488), (130, 5572), (135, 5599), (154, 5689),

Gene: Zucker_5 Start: 3788, Stop: 4504, Start Num: 26

Candidate Starts for Zucker_5:

(Start: 14 @3755 has 5 MA's), (Start: 26 @3788 has 1 MA's), (32, 3815), (35, 3827), (39, 3854), (43, 3872), (49, 3896), (60, 3944), (62, 3962), (63, 3968), (80, 4049), (83, 4058), (87, 4097), (93, 4130), (100, 4196), (124, 4328), (126, 4367), (128, 4388), (136, 4427), (147, 4484),