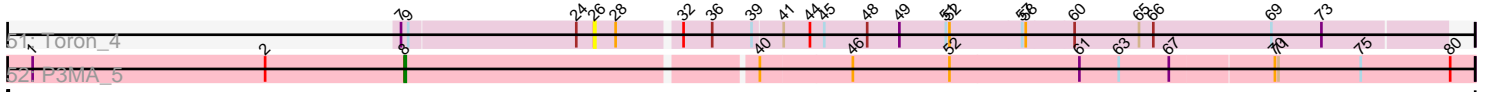


Pham 292528



Position	Toron_4	P3MA_5
1	Yes	Yes
2	No	Yes
3	Yes	Yes
4	Yes	Yes
5	Yes	Yes
6	Yes	Yes
7	Yes	Yes
8	Yes	Yes
9	Yes	Yes
10	Yes	Yes
11	Yes	Yes
12	Yes	Yes
13	Yes	Yes
14	Yes	Yes
15	Yes	Yes
16	Yes	Yes
17	Yes	Yes
18	Yes	Yes
19	Yes	Yes
20	Yes	Yes
21	Yes	Yes
22	Yes	Yes
23	Yes	Yes
24	Yes	Yes
25	Yes	Yes
26	Yes	Yes
27	Yes	Yes
28	Yes	Yes
29	Yes	Yes
30	Yes	Yes
31	Yes	Yes
32	Yes	Yes
33	Yes	Yes
34	Yes	Yes
35	Yes	Yes
36	Yes	Yes
37	Yes	Yes
38	Yes	Yes
39	Yes	Yes
40	Yes	Yes
41	Yes	Yes
42	Yes	Yes
43	Yes	Yes
44	Yes	Yes
45	Yes	Yes
46	Yes	Yes
47	Yes	Yes
48	Yes	Yes
49	Yes	Yes
50	Yes	Yes
51	Yes	Yes
52	Yes	Yes
53	Yes	Yes
54	Yes	Yes
55	Yes	Yes
56	Yes	Yes
57	Yes	Yes
58	Yes	Yes
59	Yes	Yes
60	Yes	Yes
61	Yes	Yes
62	Yes	Yes
63	Yes	Yes
64	Yes	Yes
65	Yes	Yes
66	Yes	Yes
67	Yes	Yes
68	Yes	Yes
69	Yes	Yes
70	Yes	Yes
71	Yes	Yes
72	Yes	Yes
73	Yes	Yes
74	Yes	Yes
75	Yes	Yes
76	Yes	Yes
77	Yes	Yes
78	Yes	Yes
79	Yes	Yes
80	Yes	Yes

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 292528 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292528 has 100 members, 23 are drafts.

Phages represented in each track:

- Track 1 : SteamedHams_8
- Track 2 : CocoaPuff_5, Balloona_5
- Track 3 : Survivors_8
- Track 4 : Horseradish_7, SweatNTears_8, Biskit_7, SketchMex_5, Yummy_7
- Track 5 : Fribs8_7
- Track 6 : Lauer_5
- Track 7 : Sopespian_6, Carsonalex_7, PsychoKiller_6, Elliott_6
- Track 8 : RADical_7, RSchmailzl_7, Cozz_6, ChickenTender_8, MunkgeeRoachy_6, Agatha_6, Socotra_7, GoldHunter_7, Starburst_7, Burnsey_6, Axym_6
- Track 9 : Emalyn_5, AikoCarson_5
- Track 10 : RanchParmCat_9
- Track 11 : CherryonLim_7
- Track 12 : Tarnish_5
- Track 13 : BigChungus_5, Feastonyeet_5
- Track 14 : Elinal_7, KayGee_6, Bavilard_6, Yucky_6
- Track 15 : Blondies_7, MScarn_8, Troje_6, Buttrmlkdreams_6
- Track 16 : RedBaron_7
- Track 17 : Zareef_8
- Track 18 : Gibbous_6, Dre3_6
- Track 19 : Amok_5
- Track 20 : Yakult_7
- Track 21 : Mayweather_7, SheckWes_5, Pons_6, MAnor_6
- Track 22 : GTE2_04
- Track 23 : Button_7
- Track 24 : Margaret_9
- Track 25 : McDazzle_5
- Track 26 : AndPeggy_5, Yarn_5
- Track 27 : Vine_7
- Track 28 : HippoPololi_8
- Track 29 : SummitAcademy_5, PotPie_6
- Track 30 : Quasar_6, Typhonmarchy_6
- Track 31 : Wolfwood_9, Azira_8, MaVan_8, Nibbles_8
- Track 32 : CanesSauce_6, CaramellLatte_6, ChocoMunchkin_6
- Track 33 : Jamzy_9
- Track 34 : Bubble_6
- Track 35 : ElJefes_5
- Track 36 : Tolls_8

- Track 37 : Cleo_6
- Track 38 : BillDoor_8
- Track 39 : GiKK_9
- Track 40 : Marteena_4, EnalisNailo_4, EMSquaredA_4, Floral_4, BritBrat_4, Lilas_4, Pollux_4
- Track 41 : Angelique_4
- Track 42 : Bradissa_4
- Track 43 : Jablanski_4, Pytheas_4
- Track 44 : Posh_4, Confidence_4, BeeGee_4
- Track 45 : Wrigley_4
- Track 46 : Cashline_4
- Track 47 : LonelyBoi_4
- Track 48 : TChen_4, LunaStella_4
- Track 49 : ThetaBob_4
- Track 50 : Renaud18_4
- Track 51 : Toron_4
- Track 52 : 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 18, it was called in 32 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha_6, AikoCarson_5, Amok_5, AndPeggy_5, Axym_6, Balloona_5, Bavidard_6, BillDoor_8, Biskit_7, Blondies_7, Bubble_6, Burnsey_6, Buttrmlkdreams_6, CanesSauce_6, CaramelLatte_6, Carsonalex_7, ChickenTender_8, ChocoMunchkin_6, CocoaPuff_5, Cozz_6, Elinal_7, Elliott_6, Emalyn_5, GoldHunter_7, Horseradish_7, KayGee_6, MAnor_6, MScarn_8, Mayweather_7, McDazzle_5, MunkgeeRoachy_6, Pons_6, PotPie_6, PsychoKiller_6, RADical_7, RSchmailzl_7, RedBaron_7, SheckWes_5, SketchMex_5, Socotra_7, Sopespian_6, Starburst_7, SteamedHams_8, SummitAcademy_5, SweatNTears_8, Tolls_8, Troje_6, Yarn_5, Yucky_6, Yummy_7,

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

- BigChungus_5, Bradissa_4, BritBrat_4, CherryonLim_7, EMSquaredA_4, ElJefes_5, EnalisNailo_4, Feastonyeet_5, Floral_4, GTE2_04, Lauer_5, Lilas_4, Marteena_4, Pollux_4, Quasar_6, Tarnish_5, Typhonomachy_6, Vine_7,

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

- Angelique_4, Azira_8, BeeGee_4, Button_7, Cashline_4, Cleo_6, Confidence_4, Dre3_6, Fribs8_7, GiKK_9, Gibbous_6, HippoPololi_8, Jablanski_4, Jamzy_9, LonelyBoi_4, LunaStella_4, MaVan_8, Margaret_9, Nibbles_8, P3MA_5, Posh_4, Pytheas_4, RanchParmCat_9, Renaud18_4, Survivors_8, TChen_4, ThetaBob_4, Toron_4, Wolfwood_9, Wrigley_4, Yakult_7, Zareef_8,

Summary by start number:

Start 5:

- Found in 71 of 100 (71.0%) of genes in pham

- No Manual Annotations of this start.
- Called 1.4% of time when present
- Phage (with cluster) where this start called: GTE2_04 (CT),

Start 7:

- Found in 22 of 100 (22.0%) of genes in pham
- Manual Annotations of this start: 17 of 77
- Called 77.3% of time when present
- Phage (with cluster) where this start called: Angelique_4 (CY1), BeeGee_4 (CY5), Bradissa_4 (CY1), BritBrat_4 (CY2), Cashline_4 (CY6), Confidence_4 (CY1), EMSquaredA_4 (CY1), EnalisNailo_4 (CY1), Floral_4 (CY1), Jablanski_4 (CY3), Lilas_4 (CY1), LonelyBoi_4 (CY7), Marteena_4 (CY1), Pollux_4 (CY1), Posh_4 (CY4), Pytheas_4 (CY3), Wrigley_4 (CY4),

Start 8:

- Found in 16 of 100 (16.0%) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Jamzy_9 (CT), P3MA_5 (singleton),

Start 13:

- Found in 31 of 100 (31.0%) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 9.7% of time when present
- Phage (with cluster) where this start called: Cleo_6 (CT), Survivors_8 (CT), Tarnish_5 (CT),

Start 15:

- Found in 20 of 100 (20.0%) of genes in pham
- Manual Annotations of this start: 2 of 77
- Called 15.0% of time when present
- Phage (with cluster) where this start called: ElJefes_5 (CT), Lauer_5 (CT), Vine_7 (CT),

Start 17:

- Found in 1 of 100 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fribs8_7 (CT),

Start 18:

- Found in 68 of 100 (68.0%) of genes in pham
- Manual Annotations of this start: 32 of 77
- Called 73.5% 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), Balloona_5 (CT), Bavidard_6 (CT), BillDoor_8 (CT), Biskit_7 (CT), Blondies_7 (CT), Bubble_6 (CT), Burnsey_6 (CT), Buttrmlkdreams_6 (CT), CanesSauce_6 (CT), CaramelLatte_6 (CT), Carsonalex_7 (CT), ChickenTender_8 (CT), ChocoMunchkin_6 (CT), CocoaPuff_5 (CT), Cozz_6 (CT), Elinal_7 (CT), Elliott_6 (CT), Emalyn_5 (CT), GoldHunter_7 (CT), Horseradish_7 (CT), KayGee_6 (CT), MAnor_6 (CT), MScarn_8 (CT), Mayweather_7 (CT), McDazzle_5 (CT), MunkgeeRoachy_6 (CT), Pons_6 (CT), PotPie_6 (CT), PsychoKiller_6 (CT), RADical_7 (CT), RSchmailz_7 (CT), RedBaron_7 (CT),

SheckWes_5 (CT), SketchMex_5 (CT), Socotra_7 (CT), Sopespian_6 (CT), Starburst_7 (CT), SteamedHams_8 (CT), SummitAcademy_5 (CT), SweatNTears_8 (CT), Tolls_8 (CT), Troje_6 (CT), Yarn_5 (CT), Yucky_6 (CT), Yummy_7 (CT),

Start 19:

- Found in 6 of 100 (6.0%) of genes in pham
- Manual Annotations of this start: 5 of 77
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Button_7 (CT), GiKK_9 (CT), Margaret_9 (CT), RanchParmCat_9 (CT), Yakult_7 (CT),

Start 20:

- Found in 2 of 100 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 77
- Called 50.0% of time when present
- Phage (with cluster) where this start called: CherryonLim_7 (CT),

Start 21:

- Found in 77 of 100 (77.0%) of genes in pham
- Manual Annotations of this start: 11 of 77
- Called 15.6% 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), Typhonomachy_6 (CT), Wolfwood_9 (CT), Zareef_8 (CT),

Start 26:

- Found in 34 of 100 (34.0%) of genes in pham
- Manual Annotations of this start: 4 of 77
- Called 14.7% 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),

Summary by clusters:

There are 11 clusters represented in this pham: CY3, CY2, CY1, F4, CY5, F6, CY4, singleton, CY7, CY6, CT,

Info for manual annotations of cluster CT:

- Start number 8 was manually annotated 1 time for cluster CT.
- Start number 13 was manually annotated 2 times for cluster CT.
- Start number 15 was manually annotated 2 times for cluster CT.
- Start number 17 was manually annotated 1 time for cluster CT.
- Start number 18 was manually annotated 32 times for cluster CT.
- Start number 19 was manually annotated 5 times for cluster CT.
- Start number 20 was manually annotated 1 time for cluster CT.
- Start number 21 was manually annotated 11 times for cluster CT.

Info for manual annotations of cluster CY1:

- Start number 7 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 7 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:

- Start number 7 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 7 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CY5:

- Start number 7 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:

- Start number 7 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:

- Start number 7 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster F4:

- Start number 26 was manually annotated 4 times for cluster F4.

Gene Information:

Gene: Agatha_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Agatha_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: AikoCarson_5 Start: 3913, Stop: 4572, Start Num: 18

Candidate Starts for AikoCarson_5:

(3, 3826), (5, 3832), (Start: 18 @3913 has 32 MA's), (Start: 21 @3961 has 11 MA's), (23, 3976), (24, 3982), (25, 3994), (39, 4108), (44, 4156), (51, 4270), (53, 4291), (56, 4321), (76, 4516), (78, 4543),

Gene: Amok_5 Start: 3914, Stop: 4573, Start Num: 18

Candidate Starts for Amok_5:

(3, 3827), (5, 3833), (Start: 8 @3842 has 2 MA's), (Start: 18 @3914 has 32 MA's), (Start: 21 @3962 has 11 MA's), (23, 3977), (24, 3983), (25, 3995), (39, 4109), (44, 4157), (46, 4193), (51, 4271), (53, 4292), (56, 4322), (73, 4475), (76, 4517), (78, 4544),

Gene: AndPeggy_5 Start: 4225, Stop: 4881, Start Num: 18

Candidate Starts for AndPeggy_5:

(3, 4138), (5, 4144), (Start: 8 @4153 has 2 MA's), (Start: 18 @4225 has 32 MA's), (Start: 21 @4273 has 11 MA's), (23, 4288), (25, 4306), (29, 4348), (39, 4420), (45, 4480), (46, 4504), (51, 4582), (56, 4633), (74, 4810), (76, 4828),

Gene: Angelique_4 Start: 3707, Stop: 4519, Start Num: 7

Candidate Starts for Angelique_4:

(Start: 7 @3707 has 17 MA's), (28, 3884), (33, 3935), (35, 3947), (37, 3965), (41, 4016), (42, 4022), (45, 4049), (49, 4112), (51, 4151), (59, 4238),

Gene: Axym_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Axym_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: Azira_8 Start: 5151, Stop: 5714, Start Num: 21

Candidate Starts for Azira_8:

(3, 5016), (5, 5022), (10, 5040), (Start: 13 @5064 has 2 MA's), (14, 5070), (Start: 21 @5151 has 11 MA's), (Start: 26 @5187 has 4 MA's), (27, 5193), (31, 5250), (39, 5304), (42, 5337), (43, 5340), (46, 5388), (51, 5466), (52, 5469), (53, 5487), (68, 5571), (69, 5577), (72, 5598), (79, 5688),

Gene: Balloona_5 Start: 3999, Stop: 4592, Start Num: 18

Candidate Starts for Balloona_5:

(3, 3909), (5, 3915), (11, 3942), (Start: 13 @3960 has 2 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 32 MA's), (Start: 21 @4047 has 11 MA's), (Start: 26 @4083 has 4 MA's), (29, 4122), (31, 4134), (37, 4170), (38, 4176), (39, 4194), (51, 4356), (53, 4377), (71, 4458), (72, 4473), (78, 4560),

Gene: Bavilard_6 Start: 4775, Stop: 5368, Start Num: 18

Candidate Starts for Bavilard_6:

(3, 4685), (5, 4691), (11, 4718), (Start: 13 @4736 has 2 MA's), (Start: 15 @4745 has 2 MA's), (Start: 18 @4775 has 32 MA's), (Start: 21 @4823 has 11 MA's), (Start: 26 @4859 has 4 MA's), (29, 4898), (31, 4910), (37, 4946), (38, 4952), (39, 4970), (51, 5132), (71, 5234), (72, 5249), (78, 5336),

Gene: BeeGee_4 Start: 3710, Stop: 4522, Start Num: 7

Candidate Starts for BeeGee_4:

(Start: 7 @3710 has 17 MA's), (35, 3950), (49, 4115), (51, 4154), (59, 4241),

Gene: BigChungus_5 Start: 4072, Stop: 4617, Start Num: 21

Candidate Starts for BigChungus_5:

(3, 3934), (5, 3940), (11, 3967), (Start: 13 @3985 has 2 MA's), (Start: 15 @3994 has 2 MA's), (Start: 18 @4024 has 32 MA's), (Start: 21 @4072 has 11 MA's), (Start: 26 @4108 has 4 MA's), (29, 4147), (31, 4159), (37, 4195), (38, 4201), (39, 4219), (51, 4381), (53, 4402), (71, 4483), (72, 4498), (78, 4585),

Gene: BillDoor_8 Start: 4220, Stop: 4846, Start Num: 18

Candidate Starts for BillDoor_8:

(3, 4133), (5, 4139), (Start: 8 @4148 has 2 MA's), (Start: 18 @4220 has 32 MA's), (Start: 21 @4268 has 11 MA's), (23, 4283), (25, 4301), (29, 4343), (39, 4415), (45, 4475), (46, 4499), (51, 4577), (53, 4598), (56, 4628), (74, 4775), (76, 4793),

Gene: Biskit_7 Start: 4215, Stop: 4838, Start Num: 18

Candidate Starts for Biskit_7:

(3, 4128), (5, 4134), (Start: 18 @4215 has 32 MA's), (Start: 21 @4263 has 11 MA's), (25, 4296), (29, 4338), (39, 4410), (45, 4470), (46, 4494), (51, 4572), (53, 4593), (56, 4623), (74, 4767), (76, 4785),

Gene: Blondies_7 Start: 4216, Stop: 4839, Start Num: 18

Candidate Starts for Blondies_7:

(3, 4129), (5, 4135), (Start: 18 @4216 has 32 MA's), (Start: 21 @4264 has 11 MA's), (23, 4279), (25, 4297), (29, 4339), (39, 4411), (45, 4471), (46, 4495), (51, 4573), (53, 4594), (56, 4624), (74, 4768), (76, 4786),

Gene: Bradissa_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for Bradissa_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: BritBrat_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for BritBrat_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: Bubble_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Bubble_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: Burnsey_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Burnsey_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: Button_7 Start: 4307, Stop: 4906, Start Num: 19

Candidate Starts for Button_7:

(6, 4214), (Start: 8 @4223 has 2 MA's), (Start: 19 @4307 has 5 MA's), (Start: 21 @4343 has 11 MA's), (23, 4358), (Start: 26 @4379 has 4 MA's), (30, 4439), (42, 4544), (46, 4595), (47, 4601), (51, 4673), (53, 4694), (69, 4766), (71, 4772), (76, 4850),

Gene: Buttrmlkdreams_6 Start: 4216, Stop: 4839, Start Num: 18

Candidate Starts for Buttrmlkdreams_6:

(3, 4129), (5, 4135), (Start: 18 @4216 has 32 MA's), (Start: 21 @4264 has 11 MA's), (23, 4279), (25, 4297), (29, 4339), (39, 4411), (45, 4471), (46, 4495), (51, 4573), (53, 4594), (56, 4624), (74, 4768), (76, 4786),

Gene: CanesSauce_6 Start: 4225, Stop: 4881, Start Num: 18

Candidate Starts for CanesSauce_6:

(3, 4138), (5, 4144), (Start: 8 @4153 has 2 MA's), (Start: 18 @4225 has 32 MA's), (Start: 21 @4273 has 11 MA's), (23, 4288), (25, 4306), (29, 4348), (39, 4420), (45, 4480), (46, 4504), (51, 4582), (56, 4633), (64, 4657), (74, 4810), (76, 4828),

Gene: CaramellLatte_6 Start: 4225, Stop: 4881, Start Num: 18

Candidate Starts for CaramellLatte_6:

(3, 4138), (5, 4144), (Start: 8 @4153 has 2 MA's), (Start: 18 @4225 has 32 MA's), (Start: 21 @4273 has 11 MA's), (23, 4288), (25, 4306), (29, 4348), (39, 4420), (45, 4480), (46, 4504), (51, 4582), (56, 4633), (64, 4657), (74, 4810), (76, 4828),

Gene: Carsonalex_7 Start: 4278, Stop: 4901, Start Num: 18

Candidate Starts for Carsonalex_7:

(3, 4188), (5, 4194), (Start: 18 @4278 has 32 MA's), (Start: 21 @4326 has 11 MA's), (24, 4347), (25, 4359), (27, 4368), (29, 4401), (39, 4473), (45, 4533), (51, 4635), (56, 4686), (74, 4830), (76, 4848), (77, 4869),

Gene: Cashline_4 Start: 3710, Stop: 4375, Start Num: 7

Candidate Starts for Cashline_4:

(Start: 7 @3710 has 17 MA's), (Start: 20 @3806 has 1 MA's), (28, 3887), (35, 3950), (42, 4025), (52, 4157), (55, 4199),

Gene: CherryonLim_7 Start: 4771, Stop: 5343, Start Num: 20

Candidate Starts for CherryonLim_7:

(3, 4660), (5, 4666), (11, 4693), (Start: 13 @4711 has 2 MA's), (Start: 15 @4720 has 2 MA's), (Start: 18 @4750 has 32 MA's), (Start: 20 @4771 has 1 MA's), (Start: 21 @4798 has 11 MA's), (29, 4873), (31, 4885), (37, 4921), (38, 4927), (39, 4945), (51, 5107), (53, 5128), (69, 5203), (71, 5209), (72, 5224), (78, 5311),

Gene: ChickenTender_8 Start: 4269, Stop: 4892, Start Num: 18

Candidate Starts for ChickenTender_8:

(3, 4179), (5, 4185), (Start: 18 @4269 has 32 MA's), (Start: 21 @4317 has 11 MA's), (24, 4338), (25, 4350), (27, 4359), (29, 4392), (39, 4464), (45, 4524), (51, 4626), (56, 4677), (69, 4755), (74, 4821), (76, 4839), (77, 4860),

Gene: ChocoMunchkin_6 Start: 4225, Stop: 4881, Start Num: 18

Candidate Starts for ChocoMunchkin_6:

(3, 4138), (5, 4144), (Start: 8 @4153 has 2 MA's), (Start: 18 @4225 has 32 MA's), (Start: 21 @4273 has 11 MA's), (23, 4288), (25, 4306), (29, 4348), (39, 4420), (45, 4480), (46, 4504), (51, 4582), (56, 4633), (64, 4657), (74, 4810), (76, 4828),

Gene: Cleo_6 Start: 4357, Stop: 5013, Start Num: 13

Candidate Starts for Cleo_6:

(3, 4306), (5, 4312), (10, 4333), (Start: 13 @4357 has 2 MA's), (Start: 21 @4444 has 11 MA's), (22, 4447), (23, 4459), (Start: 26 @4480 has 4 MA's), (27, 4486), (31, 4543), (39, 4597), (42, 4630), (51, 4759), (52, 4762), (53, 4780), (55, 4804), (68, 4870), (72, 4897),

Gene: CocoaPuff_5 Start: 3999, Stop: 4592, Start Num: 18

Candidate Starts for CocoaPuff_5:

(3, 3909), (5, 3915), (11, 3942), (Start: 13 @3960 has 2 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 32 MA's), (Start: 21 @4047 has 11 MA's), (Start: 26 @4083 has 4 MA's), (29, 4122), (31, 4134), (37, 4170), (38, 4176), (39, 4194), (51, 4356), (53, 4377), (71, 4458), (72, 4473), (78, 4560),

Gene: Confidence_4 Start: 3710, Stop: 4522, Start Num: 7

Candidate Starts for Confidence_4:

(Start: 7 @3710 has 17 MA's), (35, 3950), (49, 4115), (51, 4154), (59, 4241),

Gene: Cozz_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Cozz_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: Dre3_6 Start: 4388, Stop: 4960, Start Num: 21

Candidate Starts for Dre3_6:

(3, 4250), (5, 4256), (10, 4277), (Start: 13 @4301 has 2 MA's), (Start: 21 @4388 has 11 MA's), (22, 4391), (23, 4403), (Start: 26 @4424 has 4 MA's), (27, 4430), (31, 4490), (39, 4544), (42, 4577), (51, 4706), (52, 4709), (53, 4727), (55, 4751), (68, 4817), (72, 4844),

Gene: EMSquaredA_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for EMSquaredA_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: ElJefes_5 Start: 4440, Stop: 5063, Start Num: 15

Candidate Starts for ElJefes_5:

(5, 4389), (Start: 13 @4431 has 2 MA's), (Start: 15 @4440 has 2 MA's), (Start: 18 @4470 has 32 MA's), (Start: 21 @4518 has 11 MA's), (29, 4593), (31, 4605), (37, 4641), (38, 4647), (39, 4665), (51, 4827), (53, 4848), (69, 4923), (71, 4929), (72, 4944), (78, 5031),

Gene: Elinal_7 Start: 4002, Stop: 4595, Start Num: 18

Candidate Starts for Elinal_7:

(3, 3912), (5, 3918), (11, 3945), (Start: 13 @3963 has 2 MA's), (Start: 15 @3972 has 2 MA's), (Start: 18 @4002 has 32 MA's), (Start: 21 @4050 has 11 MA's), (Start: 26 @4086 has 4 MA's), (29, 4125), (31, 4137), (37, 4173), (38, 4179), (39, 4197), (51, 4359), (71, 4461), (72, 4476), (78, 4563),

Gene: Elliott_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Elliott_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (74, 4773), (76, 4791), (77, 4812),

Gene: Emalyn_5 Start: 3913, Stop: 4572, Start Num: 18

Candidate Starts for Emalyn_5:

(3, 3826), (5, 3832), (Start: 18 @3913 has 32 MA's), (Start: 21 @3961 has 11 MA's), (23, 3976), (24, 3982), (25, 3994), (39, 4108), (44, 4156), (51, 4270), (53, 4291), (56, 4321), (76, 4516), (78, 4543),

Gene: EnalisNailo_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for EnalisNailo_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: Feastonyeet_5 Start: 4072, Stop: 4617, Start Num: 21

Candidate Starts for Feastonyeet_5:

(3, 3934), (5, 3940), (11, 3967), (Start: 13 @3985 has 2 MA's), (Start: 15 @3994 has 2 MA's), (Start: 18 @4024 has 32 MA's), (Start: 21 @4072 has 11 MA's), (Start: 26 @4108 has 4 MA's), (29, 4147), (31, 4159), (37, 4195), (38, 4201), (39, 4219), (51, 4381), (53, 4402), (71, 4483), (72, 4498), (78, 4585),

Gene: Floral_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for Floral_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: Fribs8_7 Start: 4879, Stop: 5508, Start Num: 17

Candidate Starts for Fribs8_7:

(3, 4804), (5, 4810), (10, 4828), (Start: 13 @4852 has 2 MA's), (Start: 17 @4879 has 1 MA's), (Start: 21 @4939 has 11 MA's), (22, 4942), (Start: 26 @4975 has 4 MA's), (27, 4981), (31, 5038), (39, 5092), (42, 5125), (43, 5128), (51, 5254), (52, 5257), (53, 5275), (68, 5365), (72, 5392),

Gene: GTE2_04 Start: 3827, Stop: 4531, Start Num: 5

Candidate Starts for GTE2_04:

(3, 3821), (5, 3827), (Start: 8 @3836 has 2 MA's), (Start: 18 @3908 has 32 MA's), (Start: 21 @3956 has 11 MA's), (23, 3971), (25, 3989), (29, 4031), (39, 4103), (45, 4163), (46, 4187), (51, 4265), (53, 4286), (56, 4316), (74, 4460), (76, 4478),

Gene: GiKK_9 Start: 4616, Stop: 5209, Start Num: 19

Candidate Starts for GiKK_9:

(6, 4523), (Start: 8 @4532 has 2 MA's), (12, 4559), (Start: 19 @4616 has 5 MA's), (Start: 21 @4652 has 11 MA's), (23, 4667), (Start: 26 @4688 has 4 MA's), (42, 4847), (44, 4862), (46, 4898), (47, 4904), (51, 4976), (53, 4997), (71, 5075), (76, 5153),

Gene: Gibbous_6 Start: 4388, Stop: 4960, Start Num: 21

Candidate Starts for Gibbous_6:

(3, 4250), (5, 4256), (10, 4277), (Start: 13 @4301 has 2 MA's), (Start: 21 @4388 has 11 MA's), (22, 4391), (23, 4403), (Start: 26 @4424 has 4 MA's), (27, 4430), (31, 4490), (39, 4544), (42, 4577), (51, 4706), (52, 4709), (53, 4727), (55, 4751), (68, 4817), (72, 4844),

Gene: GoldHunter_7 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for GoldHunter_7:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: HippoPololi_8 Start: 5028, Stop: 5600, Start Num: 21

Candidate Starts for HippoPololi_8:

(3, 4890), (4, 4893), (5, 4896), (Start: 13 @4941 has 2 MA's), (Start: 21 @5028 has 11 MA's), (22, 5031), (Start: 26 @5064 has 4 MA's), (27, 5070), (31, 5130), (39, 5184), (42, 5217), (43, 5220), (45, 5244), (46, 5268), (51, 5346), (52, 5349), (53, 5367), (68, 5457), (69, 5463), (72, 5484),

Gene: Horseradish_7 Start: 4122, Stop: 4745, Start Num: 18

Candidate Starts for Horseradish_7:

(3, 4035), (5, 4041), (Start: 18 @4122 has 32 MA's), (Start: 21 @4170 has 11 MA's), (25, 4203), (29, 4245), (39, 4317), (45, 4377), (46, 4401), (51, 4479), (53, 4500), (56, 4530), (74, 4674), (76, 4692),

Gene: Jablanski_4 Start: 3710, Stop: 4375, Start Num: 7

Candidate Starts for Jablanski_4:

(Start: 7 @3710 has 17 MA's), (28, 3887), (35, 3950), (42, 4025), (52, 4157), (55, 4199),

Gene: Jamzy_9 Start: 4537, Stop: 5217, Start Num: 8

Candidate Starts for Jamzy_9:

(6, 4528), (Start: 8 @4537 has 2 MA's), (12, 4564), (Start: 19 @4621 has 5 MA's), (Start: 21 @4657 has 11 MA's), (Start: 26 @4693 has 4 MA's), (27, 4699), (31, 4759), (34, 4768), (42, 4852), (44, 4867), (46, 4903), (47, 4909), (50, 4948), (51, 4981), (53, 5002), (55, 5026), (71, 5083), (76, 5161),

Gene: KayGee_6 Start: 4002, Stop: 4595, Start Num: 18

Candidate Starts for KayGee_6:

(3, 3912), (5, 3918), (11, 3945), (Start: 13 @3963 has 2 MA's), (Start: 15 @3972 has 2 MA's), (Start: 18 @4002 has 32 MA's), (Start: 21 @4050 has 11 MA's), (Start: 26 @4086 has 4 MA's), (29, 4125), (31, 4137), (37, 4173), (38, 4179), (39, 4197), (51, 4359), (71, 4461), (72, 4476), (78, 4563),

Gene: Lauer_5 Start: 4024, Stop: 4647, Start Num: 15

Candidate Starts for Lauer_5:

(3, 3964), (5, 3970), (11, 3997), (Start: 13 @4015 has 2 MA's), (Start: 15 @4024 has 2 MA's), (Start: 18 @4054 has 32 MA's), (Start: 21 @4102 has 11 MA's), (Start: 26 @4138 has 4 MA's), (29, 4177), (31, 4189), (37, 4225), (38, 4231), (39, 4249), (51, 4411), (69, 4507), (71, 4513), (72, 4528), (78, 4615),

Gene: Lilas_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for Lilas_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: LonelyBoi_4 Start: 3710, Stop: 4375, Start Num: 7

Candidate Starts for LonelyBoi_4:

(Start: 7 @3710 has 17 MA's), (28, 3887), (35, 3950), (37, 3968), (42, 4025), (52, 4157), (55, 4199),

Gene: LunaStella_4 Start: 3803, Stop: 4498, Start Num: 26

Candidate Starts for LunaStella_4:

(Start: 7 @3644 has 17 MA's), (9, 3650), (Start: 26 @3803 has 4 MA's), (28, 3821), (32, 3869), (36, 3893), (39, 3926), (41, 3950), (44, 3971), (45, 3983), (48, 4019), (49, 4046), (51, 4085), (52, 4088), (58, 4151), (60, 4190), (62, 4226), (65, 4244), (66, 4256), (69, 4355), (73, 4397),

Gene: MAnor_6 Start: 3999, Stop: 4592, Start Num: 18

Candidate Starts for MAnor_6:

(3, 3909), (5, 3915), (11, 3942), (Start: 13 @3960 has 2 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 32 MA's), (Start: 21 @4047 has 11 MA's), (29, 4122), (31, 4134), (37, 4170), (38, 4176), (39, 4194), (51, 4356), (53, 4377), (69, 4452), (71, 4458), (72, 4473), (78, 4560),

Gene: MScarn_8 Start: 4216, Stop: 4839, Start Num: 18

Candidate Starts for MScarn_8:

(3, 4129), (5, 4135), (Start: 18 @4216 has 32 MA's), (Start: 21 @4264 has 11 MA's), (23, 4279), (25, 4297), (29, 4339), (39, 4411), (45, 4471), (46, 4495), (51, 4573), (53, 4594), (56, 4624), (74, 4768), (76, 4786),

Gene: MaVan_8 Start: 5151, Stop: 5714, Start Num: 21

Candidate Starts for MaVan_8:

(3, 5016), (5, 5022), (10, 5040), (Start: 13 @5064 has 2 MA's), (14, 5070), (Start: 21 @5151 has 11 MA's), (Start: 26 @5187 has 4 MA's), (27, 5193), (31, 5250), (39, 5304), (42, 5337), (43, 5340), (46, 5388), (51, 5466), (52, 5469), (53, 5487), (68, 5571), (69, 5577), (72, 5598), (79, 5688),

Gene: Margaret_9 Start: 4991, Stop: 5593, Start Num: 19

Candidate Starts for Margaret_9:

(6, 4898), (Start: 8 @4907 has 2 MA's), (12, 4934), (Start: 19 @4991 has 5 MA's), (Start: 21 @5027 has 11 MA's), (Start: 26 @5063 has 4 MA's), (27, 5069), (42, 5228), (44, 5243), (46, 5279), (47, 5285), (50, 5324), (51, 5357), (53, 5378), (55, 5402), (71, 5459), (76, 5537),

Gene: Marteena_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for Marteena_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: Mayweather_7 Start: 4620, Stop: 5213, Start Num: 18

Candidate Starts for Mayweather_7:

(3, 4530), (5, 4536), (11, 4563), (Start: 13 @4581 has 2 MA's), (Start: 15 @4590 has 2 MA's), (Start: 18 @4620 has 32 MA's), (Start: 21 @4668 has 11 MA's), (29, 4743), (31, 4755), (37, 4791), (38, 4797), (39, 4815), (51, 4977), (53, 4998), (69, 5073), (71, 5079), (72, 5094), (78, 5181),

Gene: McDazzle_5 Start: 4464, Stop: 5057, Start Num: 18

Candidate Starts for McDazzle_5:

(5, 4383), (Start: 13 @4425 has 2 MA's), (Start: 15 @4434 has 2 MA's), (Start: 18 @4464 has 32 MA's), (Start: 21 @4512 has 11 MA's), (29, 4587), (31, 4599), (37, 4635), (38, 4641), (39, 4659), (51,

4821), (53, 4842), (69, 4917), (71, 4923), (72, 4938), (78, 5025),

Gene: MunkgeeRoachy_6 Start: 4269, Stop: 4892, Start Num: 18

Candidate Starts for MunkgeeRoachy_6:

(3, 4179), (5, 4185), (Start: 18 @4269 has 32 MA's), (Start: 21 @4317 has 11 MA's), (24, 4338), (25, 4350), (27, 4359), (29, 4392), (39, 4464), (45, 4524), (51, 4626), (56, 4677), (69, 4755), (74, 4821), (76, 4839), (77, 4860),

Gene: Nibbles_8 Start: 5151, Stop: 5714, Start Num: 21

Candidate Starts for Nibbles_8:

(3, 5016), (5, 5022), (10, 5040), (Start: 13 @5064 has 2 MA's), (14, 5070), (Start: 21 @5151 has 11 MA's), (Start: 26 @5187 has 4 MA's), (27, 5193), (31, 5250), (39, 5304), (42, 5337), (43, 5340), (46, 5388), (51, 5466), (52, 5469), (53, 5487), (68, 5571), (69, 5577), (72, 5598), (79, 5688),

Gene: P3MA_5 Start: 3858, Stop: 4730, Start Num: 8

Candidate Starts for P3MA_5:

(1, 3546), (2, 3741), (Start: 8 @3858 has 2 MA's), (40, 4140), (46, 4215), (52, 4296), (61, 4404), (63, 4437), (67, 4479), (70, 4563), (71, 4566), (75, 4635), (80, 4710),

Gene: Pollux_4 Start: 3716, Stop: 4528, Start Num: 7

Candidate Starts for Pollux_4:

(Start: 7 @3716 has 17 MA's), (Start: 18 @3791 has 32 MA's), (37, 3974), (42, 4031), (49, 4121), (51, 4160), (59, 4247),

Gene: Pons_6 Start: 3999, Stop: 4592, Start Num: 18

Candidate Starts for Pons_6:

(3, 3909), (5, 3915), (11, 3942), (Start: 13 @3960 has 2 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 32 MA's), (Start: 21 @4047 has 11 MA's), (29, 4122), (31, 4134), (37, 4170), (38, 4176), (39, 4194), (51, 4356), (53, 4377), (69, 4452), (71, 4458), (72, 4473), (78, 4560),

Gene: Posh_4 Start: 3710, Stop: 4522, Start Num: 7

Candidate Starts for Posh_4:

(Start: 7 @3710 has 17 MA's), (35, 3950), (49, 4115), (51, 4154), (59, 4241),

Gene: PotPie_6 Start: 4858, Stop: 5451, Start Num: 18

Candidate Starts for PotPie_6:

(3, 4768), (5, 4774), (11, 4801), (Start: 13 @4819 has 2 MA's), (Start: 15 @4828 has 2 MA's), (Start: 18 @4858 has 32 MA's), (Start: 21 @4906 has 11 MA's), (Start: 26 @4942 has 4 MA's), (29, 4981), (31, 4993), (37, 5029), (38, 5035), (39, 5053), (51, 5215), (53, 5236), (69, 5311), (71, 5317), (72, 5332), (78, 5419),

Gene: PsychoKiller_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for PsychoKiller_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (74, 4773), (76, 4791), (77, 4812),

Gene: Pytheas_4 Start: 3710, Stop: 4375, Start Num: 7

Candidate Starts for Pytheas_4:

(Start: 7 @3710 has 17 MA's), (28, 3887), (35, 3950), (42, 4025), (52, 4157), (55, 4199),

Gene: Quasar_6 Start: 4890, Stop: 5465, Start Num: 21

Candidate Starts for Quasar_6:

(3, 4752), (5, 4758), (Start: 18 @4842 has 32 MA's), (Start: 21 @4890 has 11 MA's), (24, 4911), (25, 4923), (27, 4932), (29, 4965), (39, 5037), (45, 5097), (51, 5199), (56, 5250), (69, 5328), (74, 5394), (76, 5412), (77, 5433),

Gene: RADical_7 Start: 4222, Stop: 4845, Start Num: 18

Candidate Starts for RADical_7:

(3, 4132), (5, 4138), (Start: 18 @4222 has 32 MA's), (Start: 21 @4270 has 11 MA's), (24, 4291), (25, 4303), (27, 4312), (29, 4345), (39, 4417), (45, 4477), (51, 4579), (56, 4630), (69, 4708), (74, 4774), (76, 4792), (77, 4813),

Gene: RSchmailzl_7 Start: 4362, Stop: 4985, Start Num: 18

Candidate Starts for RSchmailzl_7:

(3, 4272), (5, 4278), (Start: 18 @4362 has 32 MA's), (Start: 21 @4410 has 11 MA's), (24, 4431), (25, 4443), (27, 4452), (29, 4485), (39, 4557), (45, 4617), (51, 4719), (56, 4770), (69, 4848), (74, 4914), (76, 4932), (77, 4953),

Gene: RanchParmCat_9 Start: 4991, Stop: 5593, Start Num: 19

Candidate Starts for RanchParmCat_9:

(6, 4898), (Start: 8 @4907 has 2 MA's), (12, 4934), (Start: 19 @4991 has 5 MA's), (Start: 21 @5027 has 11 MA's), (Start: 26 @5063 has 4 MA's), (42, 5228), (44, 5243), (46, 5279), (47, 5285), (50, 5324), (51, 5357), (53, 5378), (55, 5402), (71, 5459), (76, 5537),

Gene: RedBaron_7 Start: 4266, Stop: 4889, Start Num: 18

Candidate Starts for RedBaron_7:

(3, 4176), (5, 4182), (Start: 18 @4266 has 32 MA's), (Start: 21 @4314 has 11 MA's), (24, 4335), (25, 4347), (27, 4356), (29, 4389), (39, 4461), (45, 4521), (51, 4623), (56, 4674), (69, 4752), (74, 4818), (77, 4857),

Gene: Renaud18_4 Start: 3803, Stop: 4378, Start Num: 26

Candidate Starts for Renaud18_4:

(Start: 7 @3644 has 17 MA's), (9, 3650), (Start: 26 @3803 has 4 MA's), (28, 3821), (31, 3866), (32, 3869), (36, 3893), (39, 3926), (41, 3950), (44, 3971), (45, 3983), (48, 4019), (49, 4046), (51, 4085), (52, 4088), (54, 4115), (69, 4235), (73, 4277),

Gene: SheckWes_5 Start: 3999, Stop: 4592, Start Num: 18

Candidate Starts for SheckWes_5:

(3, 3909), (5, 3915), (11, 3942), (Start: 13 @3960 has 2 MA's), (Start: 15 @3969 has 2 MA's), (Start: 18 @3999 has 32 MA's), (Start: 21 @4047 has 11 MA's), (29, 4122), (31, 4134), (37, 4170), (38, 4176), (39, 4194), (51, 4356), (53, 4377), (69, 4452), (71, 4458), (72, 4473), (78, 4560),

Gene: SketchMex_5 Start: 4215, Stop: 4838, Start Num: 18

Candidate Starts for SketchMex_5:

(3, 4128), (5, 4134), (Start: 18 @4215 has 32 MA's), (Start: 21 @4263 has 11 MA's), (25, 4296), (29, 4338), (39, 4410), (45, 4470), (46, 4494), (51, 4572), (53, 4593), (56, 4623), (74, 4767), (76, 4785),

Gene: Socotra_7 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Socotra_7:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: Sopespian_6 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Sopespian_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (74, 4773), (76, 4791), (77, 4812),

Gene: Starburst_7 Start: 4221, Stop: 4844, Start Num: 18

Candidate Starts for Starburst_7:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: SteamedHams_8 Start: 4225, Stop: 4881, Start Num: 18

Candidate Starts for SteamedHams_8:

(3, 4138), (5, 4144), (Start: 8 @4153 has 2 MA's), (Start: 18 @4225 has 32 MA's), (Start: 21 @4273 has 11 MA's), (23, 4288), (25, 4306), (29, 4348), (39, 4420), (45, 4480), (46, 4504), (51, 4582), (56, 4633), (73, 4786), (76, 4828),

Gene: SummitAcademy_5 Start: 4073, Stop: 4666, Start Num: 18

Candidate Starts for SummitAcademy_5:

(3, 3983), (5, 3989), (11, 4016), (Start: 13 @4034 has 2 MA's), (Start: 15 @4043 has 2 MA's), (Start: 18 @4073 has 32 MA's), (Start: 21 @4121 has 11 MA's), (Start: 26 @4157 has 4 MA's), (29, 4196), (31, 4208), (37, 4244), (38, 4250), (39, 4268), (51, 4430), (53, 4451), (69, 4526), (71, 4532), (72, 4547), (78, 4634),

Gene: Survivors_8 Start: 4918, Stop: 5568, Start Num: 13

Candidate Starts for Survivors_8:

(3, 4870), (5, 4876), (10, 4894), (Start: 13 @4918 has 2 MA's), (14, 4924), (Start: 21 @5005 has 11 MA's), (Start: 26 @5041 has 4 MA's), (27, 5047), (31, 5104), (39, 5158), (42, 5191), (43, 5194), (51, 5320), (52, 5323), (53, 5341), (68, 5425), (69, 5431), (72, 5452), (79, 5542),

Gene: SweatNTears_8 Start: 4742, Stop: 5365, Start Num: 18

Candidate Starts for SweatNTears_8:

(3, 4655), (5, 4661), (Start: 18 @4742 has 32 MA's), (Start: 21 @4790 has 11 MA's), (25, 4823), (29, 4865), (39, 4937), (45, 4997), (46, 5021), (51, 5099), (53, 5120), (56, 5150), (74, 5294), (76, 5312),

Gene: TChen_4 Start: 3803, Stop: 4498, Start Num: 26

Candidate Starts for TChen_4:

(Start: 7 @3644 has 17 MA's), (9, 3650), (Start: 26 @3803 has 4 MA's), (28, 3821), (32, 3869), (36, 3893), (39, 3926), (41, 3950), (44, 3971), (45, 3983), (48, 4019), (49, 4046), (51, 4085), (52, 4088), (58, 4151), (60, 4190), (62, 4226), (65, 4244), (66, 4256), (69, 4355), (73, 4397),

Gene: Tarnish_5 Start: 4333, Stop: 4965, Start Num: 13

Candidate Starts for Tarnish_5:

(3, 4282), (5, 4288), (11, 4315), (Start: 13 @4333 has 2 MA's), (Start: 15 @4342 has 2 MA's), (Start: 18 @4372 has 32 MA's), (Start: 21 @4420 has 11 MA's), (Start: 26 @4456 has 4 MA's), (29, 4495), (31, 4507), (37, 4543), (38, 4549), (39, 4567), (51, 4729), (53, 4750), (69, 4825), (71, 4831), (72, 4846), (78, 4933),

Gene: ThetaBob_4 Start: 3803, Stop: 4378, Start Num: 26

Candidate Starts for ThetaBob_4:

(Start: 7 @3644 has 17 MA's), (9, 3650), (Start: 26 @3803 has 4 MA's), (28, 3821), (32, 3869), (36, 3893), (39, 3926), (41, 3950), (44, 3971), (45, 3983), (48, 4019), (49, 4046), (51, 4085), (52, 4088), (54, 4115), (69, 4235), (73, 4277),

Gene: Tolls_8 Start: 4226, Stop: 4885, Start Num: 18

Candidate Starts for Tolls_8:

(3, 4139), (5, 4145), (Start: 18 @4226 has 32 MA's), (Start: 21 @4274 has 11 MA's), (23, 4289), (25, 4307), (29, 4349), (39, 4421), (45, 4481), (46, 4505), (51, 4583), (56, 4634), (73, 4787), (76, 4829), (78, 4856),

Gene: Toron_4 Start: 3803, Stop: 4498, Start Num: 26

Candidate Starts for Toron_4:

(Start: 7 @3644 has 17 MA's), (9, 3650), (24, 3788), (Start: 26 @3803 has 4 MA's), (28, 3821), (32, 3869), (36, 3893), (39, 3926), (41, 3950), (44, 3971), (45, 3983), (48, 4019), (49, 4046), (51, 4085), (52, 4088), (57, 4148), (58, 4151), (60, 4190), (65, 4244), (66, 4256), (69, 4355), (73, 4397),

Gene: Troje_6 Start: 4216, Stop: 4839, Start Num: 18

Candidate Starts for Troje_6:

(3, 4129), (5, 4135), (Start: 18 @4216 has 32 MA's), (Start: 21 @4264 has 11 MA's), (23, 4279), (25, 4297), (29, 4339), (39, 4411), (45, 4471), (46, 4495), (51, 4573), (53, 4594), (56, 4624), (74, 4768), (76, 4786),

Gene: Typhonomachy_6 Start: 4269, Stop: 4844, Start Num: 21

Candidate Starts for Typhonomachy_6:

(3, 4131), (5, 4137), (Start: 18 @4221 has 32 MA's), (Start: 21 @4269 has 11 MA's), (24, 4290), (25, 4302), (27, 4311), (29, 4344), (39, 4416), (45, 4476), (51, 4578), (56, 4629), (69, 4707), (74, 4773), (76, 4791), (77, 4812),

Gene: Vine_7 Start: 4967, Stop: 5590, Start Num: 15

Candidate Starts for Vine_7:

(3, 4907), (5, 4913), (11, 4940), (Start: 13 @4958 has 2 MA's), (Start: 15 @4967 has 2 MA's), (Start: 18 @4997 has 32 MA's), (Start: 21 @5045 has 11 MA's), (Start: 26 @5081 has 4 MA's), (29, 5120), (31, 5132), (37, 5168), (38, 5174), (39, 5192), (51, 5354), (71, 5456), (72, 5471), (78, 5558),

Gene: Wolfwood_9 Start: 5150, Stop: 5713, Start Num: 21

Candidate Starts for Wolfwood_9:

(3, 5015), (5, 5021), (10, 5039), (Start: 13 @5063 has 2 MA's), (14, 5069), (Start: 21 @5150 has 11 MA's), (Start: 26 @5186 has 4 MA's), (27, 5192), (31, 5249), (39, 5303), (42, 5336), (43, 5339), (46, 5387), (51, 5465), (52, 5468), (53, 5486), (68, 5570), (69, 5576), (72, 5597), (79, 5687),

Gene: Wrigley_4 Start: 3707, Stop: 4372, Start Num: 7

Candidate Starts for Wrigley_4:

(Start: 7 @3707 has 17 MA's), (35, 3947), (42, 4022), (52, 4154), (55, 4196),

Gene: Yakult_7 Start: 4190, Stop: 4777, Start Num: 19

Candidate Starts for Yakult_7:

(6, 4097), (Start: 8 @4106 has 2 MA's), (14, 4145), (16, 4157), (Start: 19 @4190 has 5 MA's), (Start: 21 @4226 has 11 MA's), (23, 4241), (42, 4412), (47, 4469), (51, 4541), (53, 4562), (55, 4586), (71, 4643), (76, 4721),

Gene: Yarn_5 Start: 4219, Stop: 4875, Start Num: 18

Candidate Starts for Yarn_5:

(3, 4132), (5, 4138), (Start: 8 @4147 has 2 MA's), (Start: 18 @4219 has 32 MA's), (Start: 21 @4267 has 11 MA's), (23, 4282), (25, 4300), (29, 4342), (39, 4414), (45, 4474), (46, 4498), (51, 4576), (56, 4627), (74, 4804), (76, 4822),

Gene: Yucky_6 Start: 4858, Stop: 5451, Start Num: 18

Candidate Starts for Yucky_6:

(3, 4768), (5, 4774), (11, 4801), (Start: 13 @4819 has 2 MA's), (Start: 15 @4828 has 2 MA's), (Start: 18 @4858 has 32 MA's), (Start: 21 @4906 has 11 MA's), (Start: 26 @4942 has 4 MA's), (29, 4981), (31, 4993), (37, 5029), (38, 5035), (39, 5053), (51, 5215), (71, 5317), (72, 5332), (78, 5419),

Gene: Yummy_7 Start: 4122, Stop: 4745, Start Num: 18

Candidate Starts for Yummy_7:

(3, 4035), (5, 4041), (Start: 18 @4122 has 32 MA's), (Start: 21 @4170 has 11 MA's), (25, 4203), (29, 4245), (39, 4317), (45, 4377), (46, 4401), (51, 4479), (53, 4500), (56, 4530), (74, 4674), (76, 4692),

Gene: Zareef_8 Start: 5152, Stop: 5715, Start Num: 21

Candidate Starts for Zareef_8:

(3, 5017), (5, 5023), (10, 5041), (Start: 13 @5065 has 2 MA's), (14, 5071), (Start: 21 @5152 has 11 MA's), (Start: 26 @5188 has 4 MA's), (27, 5194), (31, 5251), (39, 5305), (42, 5338), (43, 5341), (46, 5389), (51, 5467), (52, 5470), (53, 5488), (68, 5572), (72, 5599), (79, 5689),