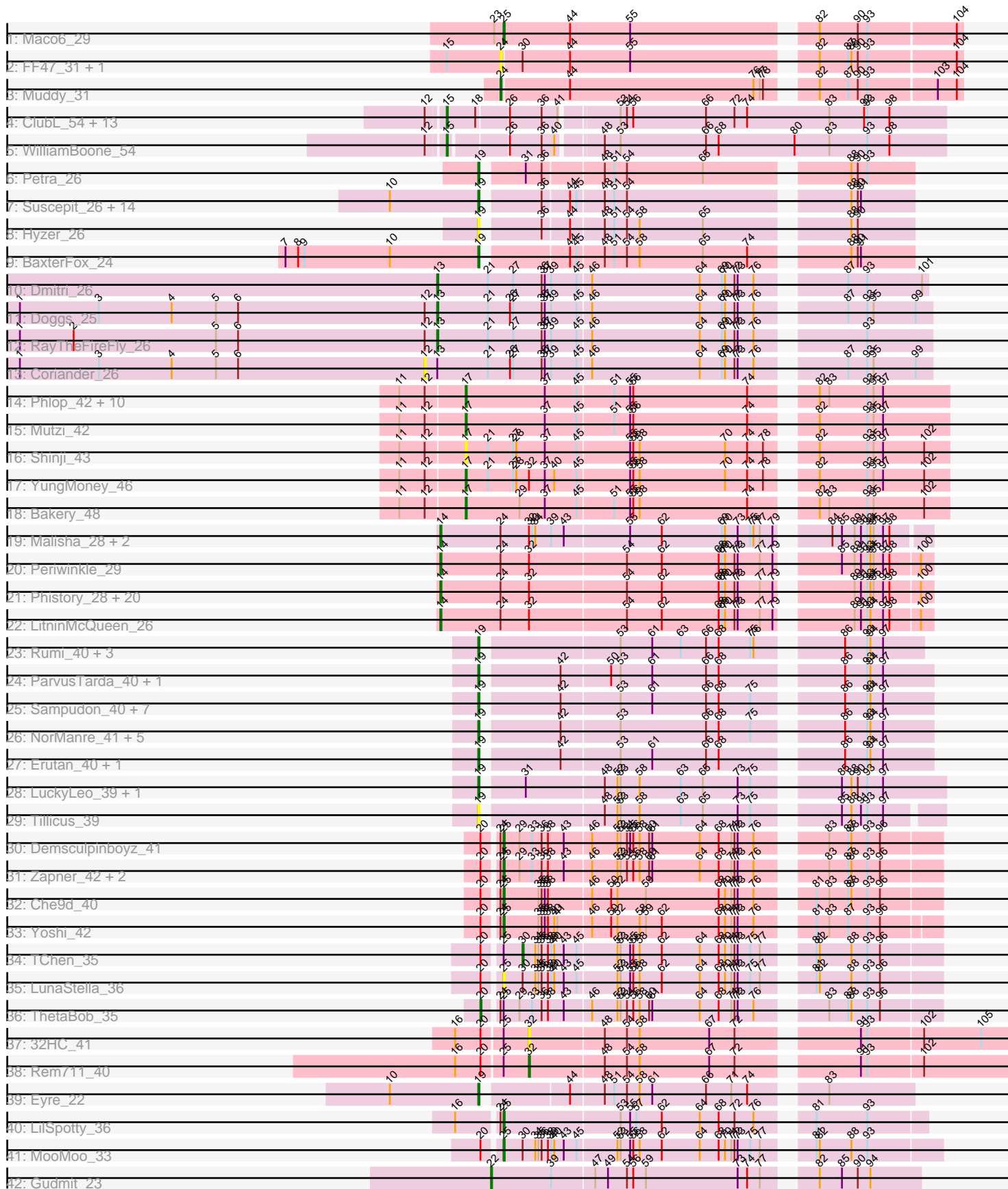


Pham 157709



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 157709 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157709 has 122 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Maco6_29
- Track 2 : FF47_31, 8UZL_31
- Track 3 : Muddy_31
- Track 4 : ClubL_54, Bachita_56, Engineer_56, Miskis_56, Norvs_55, Dusty_52, PhinkBoden_54, Abscondus_53, Cucurbita_56, Lozinak_55, Culver_54, Smoothie_56, Aphelion_54, Toniann_54
- Track 5 : WilliamBoone_54
- Track 6 : Petra_26
- Track 7 : Suscepit_26, Maridalia_25, Zameen_26, BoyNamedSue_25, AlumE_25, Neobush_26, Antonio_26, Agueybana_25, PantheRoc_24, Eudoria_26, Trumpet_26, Tayonia_26, Manasvini_26, Yeezy_26, Kita_26
- Track 8 : Hyzer_26
- Track 9 : BaxterFox_24
- Track 10 : Dmitri_26
- Track 11 : Doggs_25
- Track 12 : RayTheFireFly_26
- Track 13 : Coriander_26
- Track 14 : Phlop_42, Togo_42, SmokingBunny_43, Fireball_44, Barb_45, PullumCavea_42, PinkCoffee_45, ClamChowder_45, Fugax_46, Nubi_43, TillyBobJoe_43
- Track 15 : Mutzi_42
- Track 16 : Shinji_43
- Track 17 : YungMoney_46
- Track 18 : Bakery_48
- Track 19 : Malisha_28, Spooky_27, Squiddly_29
- Track 20 : Periwinkle_29
- Track 21 : Phistory_28, Kamaru_27, Birdsong_26, Getalong_28, Horus_27, Phabuloso_26, Lutum_27, CheeseTouch_27, Kenna_26, Frickyeah_26, Holliday_27, Apricot_26, Budski_27, BENtherdunthat_27, Asapag_27, BearBQ_26, Leroy_27, Crater_25, Kuwabara_26, MortyNRick_26, Whitney_28
- Track 22 : LitninMcQueen_26
- Track 23 : Rumi_40, NovaSharks_40, Alyssamiracle_41, Genamy16_41
- Track 24 : ParvusTarda_40, BirthdayBoy_41
- Track 25 : Sampudon_40, Yikes_41, OtterstedtS21_40, Ranch_40, Gretellyn_40, Jalebi_39, Sadboi_41, Lambo_40
- Track 26 : NorManre_41, GOATification_41, Fulcrum_41, Gibbin_41, Patos_41, Zany_39

- Track 27 : Erutan_40, Wojtek_39
- Track 28 : LuckyLeo_39, Apeppi_37
- Track 29 : Tillicus_39
- Track 30 : Demsculpinboyz_41
- Track 31 : Zapner_42, Jabbawokkie_43, Avani_40
- Track 32 : Che9d_40
- Track 33 : Yoshi_42
- Track 34 : TChen_35
- Track 35 : LunaStella_36
- Track 36 : ThetaBob_35
- Track 37 : 32HC_41
- Track 38 : Rem711_40
- Track 39 : Eyre_22
- Track 40 : LilSpotty_36
- Track 41 : MooMoo_33
- Track 42 : Gudmit_23

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

The start number called the most often in the published annotations is 19, it was called in 40 of the 106 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agueybana_25, AlumE_25, Alyssamiracle_41, Antonio_26, Apeppi_37, BaxterFox_24, BirthdayBoy_41, BoyNamedSue_25, Erutan_40, Eudoria_26, Eyre_22, Fulcrum_41, GOATification_41, Genamy16_41, Gibbin_41, GretellLyn_40, Hyzer_26, Jalebi_39, Kita_26, Lambo_40, LuckyLeo_39, Manasvini_26, Maridalia_25, Neobush_26, NorManre_41, NovaSharks_40, OtterstedtS21_40, PantheRoc_24, ParvusTarda_40, Patos_41, Petra_26, Ranch_40, Rumi_40, Sadboi_41, Sampudon_40, Suscepit_26, Tayonia_26, Tillicus_39, Trumpet_26, Wojtek_39, Yeezy_26, Yikes_41, Zameen_26, Zany_39,

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

-

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

- 32HC_41, 8UZL_31, Abscondus_53, Aphelion_54, Apricot_26, Asapag_27, Avani_40, BENtherdunthat_27, Bachita_56, Bakery_48, Barb_45, BearBQ_26, Birdsong_26, Budski_27, Che9d_40, CheeseTouch_27, ClamChowder_45, ClubL_54, Coriander_26, Crater_25, Cucurbita_56, Culver_54, Demsculpinboyz_41, Dmitri_26, Doggs_25, Dusty_52, Engineer_56, FF47_31, Fireball_44, Frickyeah_26, Fugax_46, Getalong_28, Gudmit_23, Holliday_27, Horus_27, Jabbawokkie_43, Kamaru_27, Kenna_26, Kuwabara_26, Leroy_27, LilSpotty_36, LitninMcQueen_26, Lozinak_55, LunaStella_36, Lutum_27, Maco6_29, Malisha_28, Miskis_56, MooMoo_33, MortyNRick_26, Muddy_31, Mutzi_42, Norvs_55, Nubi_43, Periwinkle_29, Phabuloso_26, PhinkBoden_54, Phistory_28, Phlop_42, PinkCoffee_45, PullumCavea_42, RayTheFireFly_26, Rem711_40, Shinji_43, SmokingBunny_43, Smoothie_56, Spooky_27, Squiddly_29, TChen_35, ThetaBob_35, TillyBobJoe_43, Togo_42, Toniann_54, Whitney_28, WilliamBoone_54, Yoshi_42, YungMoney_46, Zapner_42,

Summary by start number:

Start 12:

- Found in 33 of 122 (27.0%) of genes in pham
- No Manual Annotations of this start.
- Called 3.0% of time when present
- Phage (with cluster) where this start called: Coriander_26 (DB),

Start 13:

- Found in 4 of 122 (3.3%) of genes in pham
- Manual Annotations of this start: 3 of 106
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Dmitri_26 (DB), Doggs_25 (DB), RayTheFireFly_26 (DB),

Start 14:

- Found in 26 of 122 (21.3%) of genes in pham
- Manual Annotations of this start: 23 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_26 (DN3), Asapag_27 (DN1), BENTherdunthat_27 (DN1), BearBQ_26 (DN), Birdsong_26 (DN), Budski_27 (DN), CheeseTouch_27 (DN1), Crater_25 (DN3), Frickyeah_26 (DN1), Getalong_28 (DN1), Holliday_27 (DN1), Horus_27 (DN1), Kamaru_27 (DN1), Kenna_26 (DN1), Kuwabara_26 (DN4), Leroy_27 (DN1), LitninMcQueen_26 (DN1), Lutum_27 (DN1), Malisha_28 (DN), MortyNRick_26 (DN), Periwinkle_29 (DN1), Phabuloso_26 (DN1), Phistory_28 (DN1), Spooky_27 (DN2), Squiddly_29 (DN2), Whitney_28 (DN1),

Start 15:

- Found in 17 of 122 (13.9%) of genes in pham
- Manual Annotations of this start: 12 of 106
- Called 88.2% of time when present
- Phage (with cluster) where this start called: Abscondus_53 (CQ), Aphelion_54 (CQ1), Bachita_56 (CQ1), ClubL_54 (CQ1), Cucurbita_56 (CQ1), Culver_54 (CQ1), Dusty_52 (CQ), Engineer_56 (CQ1), Lozinak_55 (CQ1), Miskis_56 (CQ), Norvs_55 (CQ), PhinkBoden_54 (CQ1), Smoothie_56 (CQ1), Toniann_54 (CQ1), WilliamBoone_54 (CQ1),

Start 17:

- Found in 15 of 122 (12.3%) of genes in pham
- Manual Annotations of this start: 14 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bakery_48 (DC1), Barb_45 (DC1), ClamChowder_45 (DC1), Fireball_44 (DC1), Fugax_46 (DC1), Mutzi_42 (DC1), Nubi_43 (DC1), Phlop_42 (DC1), PinkCoffee_45 (DC1), PullumCavea_42 (DC1), Shinji_43 (DC1), SmokingBunny_43 (DC1), TillyBobJoe_43 (DC1), Togo_42 (DC1), YungMoney_46 (DC1),

Start 19:

- Found in 44 of 122 (36.1%) of genes in pham
- Manual Annotations of this start: 40 of 106
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Agueybana_25 (CZ1), AlumE_25 (CZ1), Alyssamiracle_41 (DV), Antonio_26 (CZ1), Apeppi_37 (DV), BaxterFox_24 (CZ3), BirthdayBoy_41 (DV), BoyNamedSue_25 (CZ1), Erutan_40 (DV), Eudoria_26 (CZ1), Eyre_22 (singleton), Fulcrum_41 (DV), GOATification_41 (DV), Genamy16_41 (DV), Gibbin_41 (DV), GretelLyn_40 (DV), Hyzer_26 (CZ1), Jalebi_39 (DV), Kita_26 (CZ1), Lambo_40 (DV), LuckyLeo_39 (DV), Manasvini_26 (CZ1), Maridalia_25 (CZ1), Neobush_26 (CZ1), NorManre_41 (DV), NovaSharks_40 (DV), OtterstedtS21_40 (DV), PantheRoc_24 (CZ3), ParvusTarda_40 (DV), Patos_41 (DV), Petra_26 (CV), Ranch_40 (DV), Rumi_40 (DV), Sadboi_41 (DV), Sampudon_40 (DV), Susceptit_26 (CZ1), Tayonia_26 (CZ1), Tillicus_39 (DV), Trumpet_26 (CZ1), Wojtek_39 (DV), Yeezy_26 (CZ3), Yikes_41 (DV), Zameen_26 (CZ1), Zany_39 (DV),

Start 20:

- Found in 12 of 122 (9.8%) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 8.3% of time when present
- Phage (with cluster) where this start called: ThetaBob_35 (F4),

Start 22:

- Found in 1 of 122 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit_23 (singleton),

Start 24:

- Found in 37 of 122 (30.3%) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 8.1% of time when present
- Phage (with cluster) where this start called: 8UZL_31 (AB), FF47_31 (AB), Muddy_31 (AB),

Start 25:

- Found in 14 of 122 (11.5%) of genes in pham
- Manual Annotations of this start: 9 of 106
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Avani_40 (F2), Che9d_40 (F2), Demsculpinboyz_41 (F2), Jabbawokkie_43 (F2), LilSpotty_36 (singleton), LunaStella_36 (F4), Maco6_29 (AB), MooMoo_33 (singleton), Yoshi_42 (F2), Zapner_42 (F2),

Start 30:

- Found in 5 of 122 (4.1%) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 20.0% of time when present
- Phage (with cluster) where this start called: TChen_35 (F4),

Start 32:

- Found in 29 of 122 (23.8%) of genes in pham
- Manual Annotations of this start: 1 of 106
- Called 6.9% of time when present
- Phage (with cluster) where this start called: 32HC_41 (Z), Rem711_40 (Z),

Summary by clusters:

There are 18 clusters represented in this pham: DN, F2, AB, F4, CZ3, CZ1, DB, singleton, DN4, DN1, DN3, DN2, DV, CQ1, Z, CQ, CV, DC1,

Info for manual annotations of cluster AB:

- Start number 24 was manually annotated 1 time for cluster AB.
- Start number 25 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster CQ:

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

Info for manual annotations of cluster CQ1:

- Start number 15 was manually annotated 11 times for cluster CQ1.

Info for manual annotations of cluster CV:

- Start number 19 was manually annotated 1 time for cluster CV.

Info for manual annotations of cluster CZ1:

- Start number 19 was manually annotated 13 times for cluster CZ1.

Info for manual annotations of cluster CZ3:

- Start number 19 was manually annotated 2 times for cluster CZ3.

Info for manual annotations of cluster DB:

- Start number 13 was manually annotated 3 times for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 17 was manually annotated 14 times for cluster DC1.

Info for manual annotations of cluster DN:

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

Info for manual annotations of cluster DN1:

- Start number 14 was manually annotated 14 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 14 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 14 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 14 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DV:

- Start number 19 was manually annotated 23 times for cluster DV.

Info for manual annotations of cluster F2:

- Start number 25 was manually annotated 6 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 20 was manually annotated 1 time for cluster F4.
- Start number 30 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster Z:

- Start number 32 was manually annotated 1 time for cluster Z.

Gene Information:

Gene: 32HC_41 Start: 30730, Stop: 31161, Start Num: 32

Candidate Starts for 32HC_41:

(16, 30664), (Start: 20 @30688 has 1 MA's), (Start: 25 @30706 has 9 MA's), (Start: 32 @30730 has 1 MA's), (48, 30799), (54, 30820), (58, 30832), (67, 30898), (72, 30922), (91, 31021), (93, 31027), (102, 31078), (105, 31132),

Gene: 8UZL_31 Start: 24782, Stop: 25192, Start Num: 24

Candidate Starts for 8UZL_31:

(Start: 15 @24731 has 12 MA's), (Start: 24 @24782 has 1 MA's), (Start: 30 @24800 has 1 MA's), (44, 24845), (55, 24902), (82, 25061), (87, 25088), (88, 25091), (90, 25097), (93, 25106), (104, 25187),

Gene: Abscondus_53 Start: 33557, Stop: 34012, Start Num: 15

Candidate Starts for Abscondus_53:

(12, 33542), (Start: 15 @33557 has 12 MA's), (18, 33584), (26, 33611), (36, 33641), (41, 33656), (53, 33704), (54, 33710), (56, 33716), (66, 33785), (72, 33812), (74, 33824), (83, 33902), (92, 33935), (93, 33938), (98, 33959),

Gene: Agueybana_25 Start: 21812, Stop: 22186, Start Num: 19

Candidate Starts for Agueybana_25:

(10, 21728), (Start: 19 @21812 has 40 MA's), (36, 21860), (44, 21884), (45, 21890), (48, 21914), (51, 21923), (54, 21935), (88, 22127), (90, 22133), (91, 22136),

Gene: AlumE_25 Start: 21811, Stop: 22185, Start Num: 19

Candidate Starts for AlumE_25:

(10, 21727), (Start: 19 @21811 has 40 MA's), (36, 21859), (44, 21883), (45, 21889), (48, 21913), (51, 21922), (54, 21934), (88, 22126), (90, 22132), (91, 22135),

Gene: Alyssamiracle_41 Start: 31366, Stop: 31752, Start Num: 19

Candidate Starts for Alyssamiracle_41:

(Start: 19 @31366 has 40 MA's), (53, 31486), (61, 31516), (63, 31543), (66, 31567), (68, 31579), (75, 31609), (76, 31612), (86, 31678), (93, 31699), (94, 31702), (97, 31714),

Gene: Antonio_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Antonio_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Apeppi_37 Start: 32448, Stop: 32855, Start Num: 19

Candidate Starts for Apeppi_37:

(Start: 19 @32448 has 40 MA's), (31, 32481), (48, 32553), (52, 32565), (53, 32568), (58, 32586), (63, 32625), (65, 32646), (73, 32679), (75, 32691), (85, 32757), (88, 32766), (90, 32772), (93, 32781), (97, 32796),

Gene: Aphelion_54 Start: 33826, Stop: 34281, Start Num: 15

Candidate Starts for Aphelion_54:

(12, 33811), (Start: 15 @33826 has 12 MA's), (18, 33853), (26, 33880), (36, 33910), (41, 33925), (53, 33973), (54, 33979), (56, 33985), (66, 34054), (72, 34081), (74, 34093), (83, 34171), (92, 34204), (93, 34207), (98, 34228),

Gene: Apricot_26 Start: 20622, Stop: 21062, Start Num: 14

Candidate Starts for Apricot_26:

(Start: 14 @20622 has 23 MA's), (Start: 24 @20679 has 1 MA's), (Start: 32 @20706 has 1 MA's), (54, 20796), (62, 20829), (68, 20883), (69, 20886), (70, 20889), (72, 20898), (73, 20901), (77, 20922), (79, 20934), (89, 20991), (91, 20997), (93, 21003), (94, 21006), (95, 21009), (97, 21018), (98, 21024), (100, 21051),

Gene: Asapag_27 Start: 21064, Stop: 21504, Start Num: 14

Candidate Starts for Asapag_27:

(Start: 14 @21064 has 23 MA's), (Start: 24 @21121 has 1 MA's), (Start: 32 @21148 has 1 MA's), (54, 21238), (62, 21271), (68, 21325), (69, 21328), (70, 21331), (72, 21340), (73, 21343), (77, 21364), (79, 21376), (89, 21433), (91, 21439), (93, 21445), (94, 21448), (95, 21451), (97, 21460), (98, 21466), (100, 21493),

Gene: Avani_40 Start: 28789, Stop: 29178, Start Num: 25

Candidate Starts for Avani_40:

(Start: 20 @28774 has 1 MA's), (Start: 24 @28786 has 1 MA's), (Start: 25 @28789 has 9 MA's), (29, 28804), (33, 28816), (36, 28825), (38, 28831), (43, 28846), (46, 28870), (52, 28894), (53, 28897), (54, 28903), (56, 28909), (58, 28915), (60, 28924), (61, 28927), (64, 28972), (68, 28990), (71, 29002), (72, 29005), (73, 29008), (76, 29023), (83, 29074), (87, 29092), (88, 29095), (93, 29110), (96, 29122),

Gene: BENtherdunthat_27 Start: 21061, Stop: 21501, Start Num: 14

Candidate Starts for BENtherdunthat_27:

(Start: 14 @21061 has 23 MA's), (Start: 24 @21118 has 1 MA's), (Start: 32 @21145 has 1 MA's), (54, 21235), (62, 21268), (68, 21322), (69, 21325), (70, 21328), (72, 21337), (73, 21340), (77, 21361), (79, 21373), (89, 21430), (91, 21436), (93, 21442), (94, 21445), (95, 21448), (97, 21457), (98, 21463), (100, 21490),

Gene: Bachita_56 Start: 34259, Stop: 34714, Start Num: 15

Candidate Starts for Bachita_56:

(12, 34244), (Start: 15 @34259 has 12 MA's), (18, 34286), (26, 34313), (36, 34343), (41, 34358), (53, 34406), (54, 34412), (56, 34418), (66, 34487), (72, 34514), (74, 34526), (83, 34604), (92, 34637), (93, 34640), (98, 34661),

Gene: Bakery_48 Start: 37078, Stop: 37512, Start Num: 17

Candidate Starts for Bakery_48:

(11, 37018), (12, 37042), (Start: 17 @37078 has 14 MA's), (29, 37129), (37, 37153), (45, 37183), (51, 37216), (55, 37231), (56, 37234), (58, 37240), (74, 37342), (82, 37390), (83, 37399), (93, 37435), (95, 37441), (102, 37489),

Gene: Barb_45 Start: 36050, Stop: 36484, Start Num: 17

Candidate Starts for Barb_45:

(11, 35990), (12, 36014), (Start: 17 @36050 has 14 MA's), (37, 36125), (45, 36155), (51, 36188), (55, 36203), (56, 36206), (74, 36314), (82, 36362), (83, 36371), (93, 36407), (95, 36413), (97, 36422),

Gene: BaxterFox_24 Start: 21132, Stop: 21506, Start Num: 19

Candidate Starts for BaxterFox_24:

(7, 20949), (8, 20961), (9, 20967), (10, 21048), (Start: 19 @21132 has 40 MA's), (44, 21204), (45, 21210), (48, 21234), (51, 21243), (54, 21255), (58, 21267), (65, 21327), (74, 21369), (88, 21447), (90,

21453), (91, 21456),

Gene: BearBQ_26 Start: 21901, Stop: 22341, Start Num: 14

Candidate Starts for BearBQ_26:

(Start: 14 @21901 has 23 MA's), (Start: 24 @21958 has 1 MA's), (Start: 32 @21985 has 1 MA's), (54, 22075), (62, 22108), (68, 22162), (69, 22165), (70, 22168), (72, 22177), (73, 22180), (77, 22201), (79, 22213), (89, 22270), (91, 22276), (93, 22282), (94, 22285), (95, 22288), (97, 22297), (98, 22303), (100, 22330),

Gene: Birdsong_26 Start: 20794, Stop: 21234, Start Num: 14

Candidate Starts for Birdsong_26:

(Start: 14 @20794 has 23 MA's), (Start: 24 @20851 has 1 MA's), (Start: 32 @20878 has 1 MA's), (54, 20968), (62, 21001), (68, 21055), (69, 21058), (70, 21061), (72, 21070), (73, 21073), (77, 21094), (79, 21106), (89, 21163), (91, 21169), (93, 21175), (94, 21178), (95, 21181), (97, 21190), (98, 21196), (100, 21223),

Gene: BirthdayBoy_41 Start: 33095, Stop: 33490, Start Num: 19

Candidate Starts for BirthdayBoy_41:

(Start: 19 @33095 has 40 MA's), (42, 33161), (50, 33206), (53, 33215), (61, 33245), (66, 33296), (68, 33308), (86, 33407), (93, 33428), (94, 33431), (97, 33443),

Gene: BoyNamedSue_25 Start: 21811, Stop: 22185, Start Num: 19

Candidate Starts for BoyNamedSue_25:

(10, 21727), (Start: 19 @21811 has 40 MA's), (36, 21859), (44, 21883), (45, 21889), (48, 21913), (51, 21922), (54, 21934), (88, 22126), (90, 22132), (91, 22135),

Gene: Budski_27 Start: 21169, Stop: 21609, Start Num: 14

Candidate Starts for Budski_27:

(Start: 14 @21169 has 23 MA's), (Start: 24 @21226 has 1 MA's), (Start: 32 @21253 has 1 MA's), (54, 21343), (62, 21376), (68, 21430), (69, 21433), (70, 21436), (72, 21445), (73, 21448), (77, 21469), (79, 21481), (89, 21538), (91, 21544), (93, 21550), (94, 21553), (95, 21556), (97, 21565), (98, 21571), (100, 21598),

Gene: Che9d_40 Start: 28798, Stop: 29187, Start Num: 25

Candidate Starts for Che9d_40:

(Start: 20 @28783 has 1 MA's), (Start: 24 @28795 has 1 MA's), (Start: 25 @28798 has 9 MA's), (35, 28831), (36, 28834), (37, 28837), (38, 28840), (46, 28879), (50, 28897), (52, 28903), (59, 28930), (68, 28999), (70, 29005), (71, 29011), (72, 29014), (73, 29017), (76, 29032), (81, 29071), (83, 29083), (87, 29101), (88, 29104), (93, 29119), (96, 29131),

Gene: CheeseTouch_27 Start: 21055, Stop: 21495, Start Num: 14

Candidate Starts for CheeseTouch_27:

(Start: 14 @21055 has 23 MA's), (Start: 24 @21112 has 1 MA's), (Start: 32 @21139 has 1 MA's), (54, 21229), (62, 21262), (68, 21316), (69, 21319), (70, 21322), (72, 21331), (73, 21334), (77, 21355), (79, 21367), (89, 21424), (91, 21430), (93, 21436), (94, 21439), (95, 21442), (97, 21451), (98, 21457), (100, 21484),

Gene: ClamChowder_45 Start: 36050, Stop: 36484, Start Num: 17

Candidate Starts for ClamChowder_45:

(11, 35990), (12, 36014), (Start: 17 @36050 has 14 MA's), (37, 36125), (45, 36155), (51, 36188), (55, 36203), (56, 36206), (74, 36314), (82, 36362), (83, 36371), (93, 36407), (95, 36413), (97, 36422),

Gene: ClubL_54 Start: 33748, Stop: 34203, Start Num: 15

Candidate Starts for ClubL_54:

(12, 33733), (Start: 15 @33748 has 12 MA's), (18, 33775), (26, 33802), (36, 33832), (41, 33847), (53, 33895), (54, 33901), (56, 33907), (66, 33976), (72, 34003), (74, 34015), (83, 34093), (92, 34126), (93, 34129), (98, 34150),

Gene: Coriander_26 Start: 22086, Stop: 22541, Start Num: 12

Candidate Starts for Coriander_26:

(1, 21702), (3, 21777), (4, 21846), (5, 21888), (6, 21909), (12, 22086), (Start: 13 @22098 has 3 MA's), (21, 22146), (26, 22167), (27, 22170), (36, 22197), (37, 22200), (39, 22206), (45, 22230), (46, 22242), (64, 22344), (69, 22365), (70, 22368), (72, 22377), (73, 22380), (76, 22395), (87, 22464), (93, 22482), (95, 22488), (99, 22527),

Gene: Crater_25 Start: 20622, Stop: 21062, Start Num: 14

Candidate Starts for Crater_25:

(Start: 14 @20622 has 23 MA's), (Start: 24 @20679 has 1 MA's), (Start: 32 @20706 has 1 MA's), (54, 20796), (62, 20829), (68, 20883), (69, 20886), (70, 20889), (72, 20898), (73, 20901), (77, 20922), (79, 20934), (89, 20991), (91, 20997), (93, 21003), (94, 21006), (95, 21009), (97, 21018), (98, 21024), (100, 21051),

Gene: Cucurbita_56 Start: 35118, Stop: 35573, Start Num: 15

Candidate Starts for Cucurbita_56:

(12, 35103), (Start: 15 @35118 has 12 MA's), (18, 35145), (26, 35172), (36, 35202), (41, 35217), (53, 35265), (54, 35271), (56, 35277), (66, 35346), (72, 35373), (74, 35385), (83, 35463), (92, 35496), (93, 35499), (98, 35520),

Gene: Culver_54 Start: 33557, Stop: 34012, Start Num: 15

Candidate Starts for Culver_54:

(12, 33542), (Start: 15 @33557 has 12 MA's), (18, 33584), (26, 33611), (36, 33641), (41, 33656), (53, 33704), (54, 33710), (56, 33716), (66, 33785), (72, 33812), (74, 33824), (83, 33902), (92, 33935), (93, 33938), (98, 33959),

Gene: Demsculpinboyz_41 Start: 28731, Stop: 29120, Start Num: 25

Candidate Starts for Demsculpinboyz_41:

(Start: 20 @28716 has 1 MA's), (Start: 24 @28728 has 1 MA's), (Start: 25 @28731 has 9 MA's), (29, 28746), (33, 28758), (36, 28767), (38, 28773), (43, 28788), (46, 28812), (52, 28836), (53, 28839), (54, 28845), (55, 28848), (56, 28851), (58, 28857), (60, 28866), (61, 28869), (64, 28914), (68, 28932), (71, 28944), (72, 28947), (73, 28950), (76, 28965), (83, 29016), (87, 29034), (88, 29037), (93, 29052), (96, 29064),

Gene: Dmitri_26 Start: 22153, Stop: 22593, Start Num: 13

Candidate Starts for Dmitri_26:

(Start: 13 @22153 has 3 MA's), (21, 22201), (27, 22225), (36, 22252), (37, 22255), (39, 22261), (45, 22285), (46, 22297), (64, 22399), (69, 22420), (70, 22423), (72, 22432), (73, 22435), (76, 22450), (87, 22519), (93, 22537), (101, 22588),

Gene: Doggs_25 Start: 21797, Stop: 22240, Start Num: 13

Candidate Starts for Doggs_25:

(1, 21401), (3, 21476), (4, 21545), (5, 21587), (6, 21608), (12, 21785), (Start: 13 @21797 has 3 MA's), (21, 21845), (26, 21866), (27, 21869), (36, 21896), (37, 21899), (39, 21905), (45, 21929), (46, 21941), (64, 22043), (69, 22064), (70, 22067), (72, 22076), (73, 22079), (76, 22094), (87, 22163), (93, 22181), (95, 22187), (99, 22226),

Gene: Dusty_52 Start: 33557, Stop: 34012, Start Num: 15

Candidate Starts for Dusty_52:

(12, 33542), (Start: 15 @33557 has 12 MA's), (18, 33584), (26, 33611), (36, 33641), (41, 33656), (53, 33704), (54, 33710), (56, 33716), (66, 33785), (72, 33812), (74, 33824), (83, 33902), (92, 33935), (93, 33938), (98, 33959),

Gene: Engineer_56 Start: 34232, Stop: 34687, Start Num: 15

Candidate Starts for Engineer_56:

(12, 34217), (Start: 15 @34232 has 12 MA's), (18, 34259), (26, 34286), (36, 34316), (41, 34331), (53, 34379), (54, 34385), (56, 34391), (66, 34460), (72, 34487), (74, 34499), (83, 34577), (92, 34610), (93, 34613), (98, 34634),

Gene: Erutan_40 Start: 32554, Stop: 32949, Start Num: 19

Candidate Starts for Erutan_40:

(Start: 19 @32554 has 40 MA's), (42, 32620), (53, 32674), (61, 32704), (66, 32755), (68, 32767), (86, 32866), (93, 32887), (94, 32890), (97, 32902),

Gene: Eudoria_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Eudoria_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Eyre_22 Start: 19166, Stop: 19540, Start Num: 19

Candidate Starts for Eyre_22:

(10, 19082), (Start: 19 @19166 has 40 MA's), (44, 19238), (48, 19268), (51, 19277), (54, 19289), (58, 19301), (61, 19313), (66, 19364), (71, 19388), (74, 19403), (83, 19460),

Gene: FF47_31 Start: 24709, Stop: 25119, Start Num: 24

Candidate Starts for FF47_31:

(Start: 15 @24658 has 12 MA's), (Start: 24 @24709 has 1 MA's), (Start: 30 @24727 has 1 MA's), (44, 24772), (55, 24829), (82, 24988), (87, 25015), (88, 25018), (90, 25024), (93, 25033), (104, 25114),

Gene: Fireball_44 Start: 35995, Stop: 36429, Start Num: 17

Candidate Starts for Fireball_44:

(11, 35935), (12, 35959), (Start: 17 @35995 has 14 MA's), (37, 36070), (45, 36100), (51, 36133), (55, 36148), (56, 36151), (74, 36259), (82, 36307), (83, 36316), (93, 36352), (95, 36358), (97, 36367),

Gene: Frickyeah_26 Start: 20827, Stop: 21267, Start Num: 14

Candidate Starts for Frickyeah_26:

(Start: 14 @20827 has 23 MA's), (Start: 24 @20884 has 1 MA's), (Start: 32 @20911 has 1 MA's), (54, 21001), (62, 21034), (68, 21088), (69, 21091), (70, 21094), (72, 21103), (73, 21106), (77, 21127), (79, 21139), (89, 21196), (91, 21202), (93, 21208), (94, 21211), (95, 21214), (97, 21223), (98, 21229), (100, 21256),

Gene: Fugax_46 Start: 36042, Stop: 36476, Start Num: 17

Candidate Starts for Fugax_46:

(11, 35982), (12, 36006), (Start: 17 @36042 has 14 MA's), (37, 36117), (45, 36147), (51, 36180), (55, 36195), (56, 36198), (74, 36306), (82, 36354), (83, 36363), (93, 36399), (95, 36405), (97, 36414),

Gene: Fulcrum_41 Start: 33075, Stop: 33470, Start Num: 19

Candidate Starts for Fulcrum_41:

(Start: 19 @33075 has 40 MA's), (42, 33141), (53, 33195), (66, 33276), (68, 33288), (75, 33318), (86, 33387), (93, 33408), (94, 33411), (97, 33423),

Gene: GOATification_41 Start: 33075, Stop: 33470, Start Num: 19

Candidate Starts for GOATification_41:

(Start: 19 @33075 has 40 MA's), (42, 33141), (53, 33195), (66, 33276), (68, 33288), (75, 33318), (86, 33387), (93, 33408), (94, 33411), (97, 33423),

Gene: Genamy16_41 Start: 31366, Stop: 31752, Start Num: 19

Candidate Starts for Genamy16_41:

(Start: 19 @31366 has 40 MA's), (53, 31486), (61, 31516), (63, 31543), (66, 31567), (68, 31579), (75, 31609), (76, 31612), (86, 31678), (93, 31699), (94, 31702), (97, 31714),

Gene: Getalong_28 Start: 21864, Stop: 22304, Start Num: 14

Candidate Starts for Getalong_28:

(Start: 14 @21864 has 23 MA's), (Start: 24 @21921 has 1 MA's), (Start: 32 @21948 has 1 MA's), (54, 22038), (62, 22071), (68, 22125), (69, 22128), (70, 22131), (72, 22140), (73, 22143), (77, 22164), (79, 22176), (89, 22233), (91, 22239), (93, 22245), (94, 22248), (95, 22251), (97, 22260), (98, 22266), (100, 22293),

Gene: Gibbin_41 Start: 33173, Stop: 33559, Start Num: 19

Candidate Starts for Gibbin_41:

(Start: 19 @33173 has 40 MA's), (42, 33239), (53, 33293), (66, 33374), (68, 33386), (75, 33416), (86, 33485), (93, 33506), (94, 33509), (97, 33521),

Gene: Gretellyn_40 Start: 33439, Stop: 33834, Start Num: 19

Candidate Starts for Gretellyn_40:

(Start: 19 @33439 has 40 MA's), (42, 33505), (53, 33559), (61, 33589), (66, 33640), (68, 33652), (75, 33682), (86, 33751), (93, 33772), (94, 33775), (97, 33787),

Gene: Gudmit_23 Start: 19228, Stop: 19611, Start Num: 22

Candidate Starts for Gudmit_23:

(Start: 22 @19228 has 1 MA's), (39, 19285), (47, 19324), (49, 19336), (54, 19354), (56, 19360), (59, 19372), (73, 19459), (74, 19468), (77, 19480), (82, 19516), (85, 19537), (90, 19552), (94, 19564),

Gene: Holliday_27 Start: 21169, Stop: 21609, Start Num: 14

Candidate Starts for Holliday_27:

(Start: 14 @21169 has 23 MA's), (Start: 24 @21226 has 1 MA's), (Start: 32 @21253 has 1 MA's), (54, 21343), (62, 21376), (68, 21430), (69, 21433), (70, 21436), (72, 21445), (73, 21448), (77, 21469), (79, 21481), (89, 21538), (91, 21544), (93, 21550), (94, 21553), (95, 21556), (97, 21565), (98, 21571), (100, 21598),

Gene: Horus_27 Start: 21086, Stop: 21526, Start Num: 14

Candidate Starts for Horus_27:

(Start: 14 @21086 has 23 MA's), (Start: 24 @21143 has 1 MA's), (Start: 32 @21170 has 1 MA's), (54, 21260), (62, 21293), (68, 21347), (69, 21350), (70, 21353), (72, 21362), (73, 21365), (77, 21386), (79, 21398), (89, 21455), (91, 21461), (93, 21467), (94, 21470), (95, 21473), (97, 21482), (98, 21488), (100, 21515),

Gene: Hyzer_26 Start: 22472, Stop: 22846, Start Num: 19

Candidate Starts for Hyzer_26:

(Start: 19 @22472 has 40 MA's), (36, 22520), (44, 22544), (48, 22574), (51, 22583), (54, 22595), (58, 22607), (65, 22667), (88, 22787), (90, 22793),

Gene: Jabbawokkie_43 Start: 30179, Stop: 30568, Start Num: 25

Candidate Starts for Jabbawokkie_43:

(Start: 20 @30164 has 1 MA's), (Start: 24 @30176 has 1 MA's), (Start: 25 @30179 has 9 MA's), (29, 30194), (33, 30206), (36, 30215), (38, 30221), (43, 30236), (46, 30260), (52, 30284), (53, 30287), (54, 30293), (56, 30299), (58, 30305), (60, 30314), (61, 30317), (64, 30362), (68, 30380), (71, 30392), (72, 30395), (73, 30398), (76, 30413), (83, 30464), (87, 30482), (88, 30485), (93, 30500), (96, 30512),

Gene: Jalebi_39 Start: 33608, Stop: 34003, Start Num: 19

Candidate Starts for Jalebi_39:

(Start: 19 @33608 has 40 MA's), (42, 33674), (53, 33728), (61, 33758), (66, 33809), (68, 33821), (75, 33851), (86, 33920), (93, 33941), (94, 33944), (97, 33956),

Gene: Kamaru_27 Start: 21169, Stop: 21609, Start Num: 14

Candidate Starts for Kamaru_27:

(Start: 14 @21169 has 23 MA's), (Start: 24 @21226 has 1 MA's), (Start: 32 @21253 has 1 MA's), (54, 21343), (62, 21376), (68, 21430), (69, 21433), (70, 21436), (72, 21445), (73, 21448), (77, 21469), (79, 21481), (89, 21538), (91, 21544), (93, 21550), (94, 21553), (95, 21556), (97, 21565), (98, 21571), (100, 21598),

Gene: Kenna_26 Start: 21062, Stop: 21502, Start Num: 14

Candidate Starts for Kenna_26:

(Start: 14 @21062 has 23 MA's), (Start: 24 @21119 has 1 MA's), (Start: 32 @21146 has 1 MA's), (54, 21236), (62, 21269), (68, 21323), (69, 21326), (70, 21329), (72, 21338), (73, 21341), (77, 21362), (79, 21374), (89, 21431), (91, 21437), (93, 21443), (94, 21446), (95, 21449), (97, 21458), (98, 21464), (100, 21491),

Gene: Kita_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Kita_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Kuwabara_26 Start: 20488, Stop: 20928, Start Num: 14

Candidate Starts for Kuwabara_26:

(Start: 14 @20488 has 23 MA's), (Start: 24 @20545 has 1 MA's), (Start: 32 @20572 has 1 MA's), (54, 20662), (62, 20695), (68, 20749), (69, 20752), (70, 20755), (72, 20764), (73, 20767), (77, 20788), (79, 20800), (89, 20857), (91, 20863), (93, 20869), (94, 20872), (95, 20875), (97, 20884), (98, 20890), (100, 20917),

Gene: Lambo_40 Start: 33093, Stop: 33488, Start Num: 19

Candidate Starts for Lambo_40:

(Start: 19 @33093 has 40 MA's), (42, 33159), (53, 33213), (61, 33243), (66, 33294), (68, 33306), (75, 33336), (86, 33405), (93, 33426), (94, 33429), (97, 33441),

Gene: Leroy_27 Start: 21087, Stop: 21527, Start Num: 14

Candidate Starts for Leroy_27:

(Start: 14 @21087 has 23 MA's), (Start: 24 @21144 has 1 MA's), (Start: 32 @21171 has 1 MA's), (54, 21261), (62, 21294), (68, 21348), (69, 21351), (70, 21354), (72, 21363), (73, 21366), (77, 21387), (79, 21399), (89, 21456), (91, 21462), (93, 21468), (94, 21471), (95, 21474), (97, 21483), (98, 21489), (100, 21516),

Gene: LilSpotty_36 Start: 26778, Stop: 27152, Start Num: 25

Candidate Starts for LilSpotty_36:

(16, 26739), (Start: 24 @26775 has 1 MA's), (Start: 25 @26778 has 9 MA's), (53, 26886), (55, 26895), (57, 26901), (62, 26925), (64, 26961), (68, 26979), (72, 26994), (76, 27012), (81, 27051), (93, 27099),

Gene: LitninMcQueen_26 Start: 20818, Stop: 21258, Start Num: 14

Candidate Starts for LitninMcQueen_26:

(Start: 14 @20818 has 23 MA's), (Start: 24 @20875 has 1 MA's), (Start: 32 @20902 has 1 MA's), (54, 20992), (62, 21025), (68, 21079), (69, 21082), (70, 21085), (72, 21094), (73, 21097), (77, 21118), (79, 21130), (89, 21187), (91, 21193), (93, 21199), (94, 21202), (97, 21214), (98, 21220), (100, 21247),

Gene: Lozinak_55 Start: 34287, Stop: 34742, Start Num: 15

Candidate Starts for Lozinak_55:

(12, 34272), (Start: 15 @34287 has 12 MA's), (18, 34314), (26, 34341), (36, 34371), (41, 34386), (53, 34434), (54, 34440), (56, 34446), (66, 34515), (72, 34542), (74, 34554), (83, 34632), (92, 34665), (93, 34668), (98, 34689),

Gene: LuckyLeo_39 Start: 32448, Stop: 32855, Start Num: 19

Candidate Starts for LuckyLeo_39:

(Start: 19 @32448 has 40 MA's), (31, 32481), (48, 32553), (52, 32565), (53, 32568), (58, 32586), (63, 32625), (65, 32646), (73, 32679), (75, 32691), (85, 32757), (88, 32766), (90, 32772), (93, 32781), (97, 32796),

Gene: LunaStella_36 Start: 30071, Stop: 30460, Start Num: 25

Candidate Starts for LunaStella_36:

(Start: 20 @30056 has 1 MA's), (Start: 25 @30071 has 9 MA's), (Start: 30 @30089 has 1 MA's), (34, 30101), (35, 30104), (36, 30107), (38, 30113), (39, 30116), (40, 30119), (43, 30128), (45, 30140), (52, 30176), (53, 30179), (55, 30188), (56, 30191), (58, 30197), (62, 30218), (64, 30254), (68, 30272), (70, 30278), (71, 30284), (72, 30287), (73, 30290), (75, 30302), (77, 30311), (81, 30344), (82, 30347), (88, 30377), (93, 30392), (96, 30404),

Gene: Lutum_27 Start: 21062, Stop: 21502, Start Num: 14

Candidate Starts for Lutum_27:

(Start: 14 @21062 has 23 MA's), (Start: 24 @21119 has 1 MA's), (Start: 32 @21146 has 1 MA's), (54, 21236), (62, 21269), (68, 21323), (69, 21326), (70, 21329), (72, 21338), (73, 21341), (77, 21362), (79, 21374), (89, 21431), (91, 21437), (93, 21443), (94, 21446), (95, 21449), (97, 21458), (98, 21464), (100, 21491),

Gene: Maco6_29 Start: 24049, Stop: 24459, Start Num: 25

Candidate Starts for Maco6_29:

(23, 24040), (Start: 25 @24049 has 9 MA's), (44, 24112), (55, 24169), (82, 24328), (90, 24364), (93, 24373), (104, 24454),

Gene: Malisha_28 Start: 22947, Stop: 23384, Start Num: 14

Candidate Starts for Malisha_28:

(Start: 14 @22947 has 23 MA's), (Start: 24 @23004 has 1 MA's), (Start: 32 @23031 has 1 MA's), (33, 23034), (34, 23037), (39, 23052), (43, 23064), (55, 23124), (62, 23154), (69, 23211), (70, 23214), (73, 23226), (75, 23238), (76, 23241), (77, 23247), (79, 23259), (84, 23295), (85, 23304), (89, 23316), (91, 23322), (93, 23328), (94, 23331), (95, 23334), (97, 23343), (98, 23349),

Gene: Manasvini_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Manasvini_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Maridalia_25 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Maridalia_25:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Miskis_56 Start: 33592, Stop: 34047, Start Num: 15

Candidate Starts for Miskis_56:

(12, 33577), (Start: 15 @33592 has 12 MA's), (18, 33619), (26, 33646), (36, 33676), (41, 33691), (53, 33739), (54, 33745), (56, 33751), (66, 33820), (72, 33847), (74, 33859), (83, 33937), (92, 33970), (93, 33973), (98, 33994),

Gene: MooMoo_33 Start: 28618, Stop: 29007, Start Num: 25

Candidate Starts for MooMoo_33:

(Start: 20 @28603 has 1 MA's), (Start: 25 @28618 has 9 MA's), (Start: 30 @28636 has 1 MA's), (34, 28648), (35, 28651), (36, 28654), (38, 28660), (39, 28663), (40, 28666), (43, 28675), (45, 28687), (52, 28723), (53, 28726), (55, 28735), (56, 28738), (58, 28744), (62, 28765), (64, 28801), (68, 28819), (70, 28825), (71, 28831), (72, 28834), (73, 28837), (75, 28849), (77, 28858), (81, 28891), (82, 28894), (88, 28924), (93, 28939),

Gene: MortyNRick_26 Start: 20794, Stop: 21234, Start Num: 14

Candidate Starts for MortyNRick_26:

(Start: 14 @20794 has 23 MA's), (Start: 24 @20851 has 1 MA's), (Start: 32 @20878 has 1 MA's), (54, 20968), (62, 21001), (68, 21055), (69, 21058), (70, 21061), (72, 21070), (73, 21073), (77, 21094), (79, 21106), (89, 21163), (91, 21169), (93, 21175), (94, 21178), (95, 21181), (97, 21190), (98, 21196), (100, 21223),

Gene: Muddy_31 Start: 24990, Stop: 25400, Start Num: 24

Candidate Starts for Muddy_31:

(Start: 24 @24990 has 1 MA's), (44, 25053), (76, 25227), (77, 25233), (78, 25236), (82, 25269), (87, 25296), (90, 25305), (93, 25314), (103, 25377), (104, 25395),

Gene: Mutzi_42 Start: 36730, Stop: 37164, Start Num: 17

Candidate Starts for Mutzi_42:

(11, 36670), (12, 36694), (Start: 17 @36730 has 14 MA's), (37, 36805), (45, 36835), (51, 36868), (55, 36883), (56, 36886), (74, 36994), (82, 37042), (93, 37087), (95, 37093), (97, 37102),

Gene: Neobush_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Neobush_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: NorManre_41 Start: 32684, Stop: 33079, Start Num: 19

Candidate Starts for NorManre_41:

(Start: 19 @32684 has 40 MA's), (42, 32750), (53, 32804), (66, 32885), (68, 32897), (75, 32927), (86, 32996), (93, 33017), (94, 33020), (97, 33032),

Gene: Norvs_55 Start: 33831, Stop: 34286, Start Num: 15

Candidate Starts for Norvs_55:

(12, 33816), (Start: 15 @33831 has 12 MA's), (18, 33858), (26, 33885), (36, 33915), (41, 33930), (53, 33978), (54, 33984), (56, 33990), (66, 34059), (72, 34086), (74, 34098), (83, 34176), (92, 34209), (93, 34212), (98, 34233),

Gene: NovaSharks_40 Start: 30956, Stop: 31342, Start Num: 19

Candidate Starts for NovaSharks_40:

(Start: 19 @30956 has 40 MA's), (53, 31076), (61, 31106), (63, 31133), (66, 31157), (68, 31169), (75, 31199), (76, 31202), (86, 31268), (93, 31289), (94, 31292), (97, 31304),

Gene: Nubi_43 Start: 35875, Stop: 36309, Start Num: 17

Candidate Starts for Nubi_43:

(11, 35815), (12, 35839), (Start: 17 @35875 has 14 MA's), (37, 35950), (45, 35980), (51, 36013), (55, 36028), (56, 36031), (74, 36139), (82, 36187), (83, 36196), (93, 36232), (95, 36238), (97, 36247),

Gene: OtterstedtS21_40 Start: 32755, Stop: 33150, Start Num: 19

Candidate Starts for OtterstedtS21_40:

(Start: 19 @32755 has 40 MA's), (42, 32821), (53, 32875), (61, 32905), (66, 32956), (68, 32968), (75, 32998), (86, 33067), (93, 33088), (94, 33091), (97, 33103),

Gene: PantheRoc_24 Start: 21130, Stop: 21504, Start Num: 19

Candidate Starts for PantheRoc_24:

(10, 21046), (Start: 19 @21130 has 40 MA's), (36, 21178), (44, 21202), (45, 21208), (48, 21232), (51, 21241), (54, 21253), (88, 21445), (90, 21451), (91, 21454),

Gene: ParvusTarda_40 Start: 32223, Stop: 32618, Start Num: 19

Candidate Starts for ParvusTarda_40:

(Start: 19 @32223 has 40 MA's), (42, 32289), (50, 32334), (53, 32343), (61, 32373), (66, 32424), (68, 32436), (86, 32535), (93, 32556), (94, 32559), (97, 32571),

Gene: Patos_41 Start: 32684, Stop: 33079, Start Num: 19

Candidate Starts for Patos_41:

(Start: 19 @32684 has 40 MA's), (42, 32750), (53, 32804), (66, 32885), (68, 32897), (75, 32927), (86, 32996), (93, 33017), (94, 33020), (97, 33032),

Gene: Periwinkle_29 Start: 21531, Stop: 21971, Start Num: 14

Candidate Starts for Periwinkle_29:

(Start: 14 @21531 has 23 MA's), (Start: 24 @21588 has 1 MA's), (Start: 32 @21615 has 1 MA's), (54, 21705), (62, 21738), (68, 21792), (69, 21795), (70, 21798), (72, 21807), (73, 21810), (77, 21831), (79, 21843), (85, 21888), (89, 21900), (91, 21906), (93, 21912), (94, 21915), (95, 21918), (97, 21927), (98, 21933), (100, 21960),

Gene: Petra_26 Start: 20781, Stop: 21155, Start Num: 19

Candidate Starts for Petra_26:

(Start: 19 @20781 has 40 MA's), (31, 20814), (36, 20829), (48, 20883), (51, 20892), (54, 20904), (65, 20976), (88, 21096), (90, 21102), (93, 21111),

Gene: Phabuloso_26 Start: 20818, Stop: 21258, Start Num: 14

Candidate Starts for Phabuloso_26:

(Start: 14 @20818 has 23 MA's), (Start: 24 @20875 has 1 MA's), (Start: 32 @20902 has 1 MA's), (54, 20992), (62, 21025), (68, 21079), (69, 21082), (70, 21085), (72, 21094), (73, 21097), (77, 21118), (79, 21130), (89, 21187), (91, 21193), (93, 21199), (94, 21202), (95, 21205), (97, 21214), (98, 21220), (100, 21247),

Gene: PhinkBoden_54 Start: 34212, Stop: 34667, Start Num: 15

Candidate Starts for PhinkBoden_54:

(12, 34197), (Start: 15 @34212 has 12 MA's), (18, 34239), (26, 34266), (36, 34296), (41, 34311), (53, 34359), (54, 34365), (56, 34371), (66, 34440), (72, 34467), (74, 34479), (83, 34557), (92, 34590), (93, 34593), (98, 34614),

Gene: Phistory_28 Start: 21852, Stop: 22292, Start Num: 14

Candidate Starts for Phistory_28:

(Start: 14 @21852 has 23 MA's), (Start: 24 @21909 has 1 MA's), (Start: 32 @21936 has 1 MA's), (54, 22026), (62, 22059), (68, 22113), (69, 22116), (70, 22119), (72, 22128), (73, 22131), (77, 22152), (79, 22164), (89, 22221), (91, 22227), (93, 22233), (94, 22236), (95, 22239), (97, 22248), (98, 22254), (100, 22281),

Gene: Phlop_42 Start: 35956, Stop: 36390, Start Num: 17

Candidate Starts for Phlop_42:

(11, 35896), (12, 35920), (Start: 17 @35956 has 14 MA's), (37, 36031), (45, 36061), (51, 36094), (55, 36109), (56, 36112), (74, 36220), (82, 36268), (83, 36277), (93, 36313), (95, 36319), (97, 36328),

Gene: PinkCoffee_45 Start: 36059, Stop: 36493, Start Num: 17

Candidate Starts for PinkCoffee_45:

(11, 35999), (12, 36023), (Start: 17 @36059 has 14 MA's), (37, 36134), (45, 36164), (51, 36197), (55, 36212), (56, 36215), (74, 36323), (82, 36371), (83, 36380), (93, 36416), (95, 36422), (97, 36431),

Gene: PullumCavea_42 Start: 35956, Stop: 36390, Start Num: 17

Candidate Starts for PullumCavea_42:

(11, 35896), (12, 35920), (Start: 17 @35956 has 14 MA's), (37, 36031), (45, 36061), (51, 36094), (55, 36109), (56, 36112), (74, 36220), (82, 36268), (83, 36277), (93, 36313), (95, 36319), (97, 36328),

Gene: Ranch_40 Start: 31581, Stop: 31976, Start Num: 19

Candidate Starts for Ranch_40:

(Start: 19 @31581 has 40 MA's), (42, 31647), (53, 31701), (61, 31731), (66, 31782), (68, 31794), (75, 31824), (86, 31893), (93, 31914), (94, 31917), (97, 31929),

Gene: RayTheFireFly_26 Start: 22130, Stop: 22573, Start Num: 13

Candidate Starts for RayTheFireFly_26:

(1, 21734), (2, 21785), (5, 21920), (6, 21941), (12, 22118), (Start: 13 @22130 has 3 MA's), (21, 22178), (27, 22202), (36, 22229), (37, 22232), (39, 22238), (45, 22262), (46, 22274), (64, 22376), (69, 22397), (70, 22400), (72, 22409), (73, 22412), (76, 22427), (93, 22514),

Gene: Rem711_40 Start: 30711, Stop: 31142, Start Num: 32

Candidate Starts for Rem711_40:

(16, 30645), (Start: 20 @30669 has 1 MA's), (Start: 25 @30687 has 9 MA's), (Start: 32 @30711 has 1 MA's), (48, 30780), (54, 30801), (58, 30813), (67, 30879), (72, 30903), (91, 31002), (93, 31008), (102, 31059),

Gene: Rumi_40 Start: 30959, Stop: 31345, Start Num: 19

Candidate Starts for Rumi_40:

(Start: 19 @30959 has 40 MA's), (53, 31079), (61, 31109), (63, 31136), (66, 31160), (68, 31172), (75, 31202), (76, 31205), (86, 31271), (93, 31292), (94, 31295), (97, 31307),

Gene: Sadboi_41 Start: 33440, Stop: 33835, Start Num: 19

Candidate Starts for Sadboi_41:

(Start: 19 @33440 has 40 MA's), (42, 33506), (53, 33560), (61, 33590), (66, 33641), (68, 33653), (75, 33683), (86, 33752), (93, 33773), (94, 33776), (97, 33788),

Gene: Sampudon_40 Start: 33608, Stop: 34003, Start Num: 19

Candidate Starts for Sampudon_40:

(Start: 19 @33608 has 40 MA's), (42, 33674), (53, 33728), (61, 33758), (66, 33809), (68, 33821), (75, 33851), (86, 33920), (93, 33941), (94, 33944), (97, 33956),

Gene: Shinji_43 Start: 35312, Stop: 35746, Start Num: 17

Candidate Starts for Shinji_43:

(11, 35252), (12, 35276), (Start: 17 @35312 has 14 MA's), (21, 35333), (27, 35357), (28, 35360), (37, 35387), (45, 35417), (55, 35465), (56, 35468), (58, 35474), (70, 35555), (74, 35576), (78, 35591), (82, 35624), (93, 35669), (95, 35675), (97, 35684), (102, 35723),

Gene: SmokingBunny_43 Start: 35861, Stop: 36295, Start Num: 17

Candidate Starts for SmokingBunny_43:

(11, 35801), (12, 35825), (Start: 17 @35861 has 14 MA's), (37, 35936), (45, 35966), (51, 35999), (55, 36014), (56, 36017), (74, 36125), (82, 36173), (83, 36182), (93, 36218), (95, 36224), (97, 36233),

Gene: Smoothie_56 Start: 34287, Stop: 34742, Start Num: 15

Candidate Starts for Smoothie_56:

(12, 34272), (Start: 15 @34287 has 12 MA's), (18, 34314), (26, 34341), (36, 34371), (41, 34386), (53, 34434), (54, 34440), (56, 34446), (66, 34515), (72, 34542), (74, 34554), (83, 34632), (92, 34665), (93, 34668), (98, 34689),

Gene: Spooky_27 Start: 21156, Stop: 21593, Start Num: 14

Candidate Starts for Spooky_27:

(Start: 14 @21156 has 23 MA's), (Start: 24 @21213 has 1 MA's), (Start: 32 @21240 has 1 MA's), (33, 21243), (34, 21246), (39, 21261), (43, 21273), (55, 21333), (62, 21363), (69, 21420), (70, 21423), (73, 21435), (75, 21447), (76, 21450), (77, 21456), (79, 21468), (84, 21504), (85, 21513), (89, 21525), (91, 21531), (93, 21537), (94, 21540), (95, 21543), (97, 21552), (98, 21558),

Gene: Squiddly_29 Start: 22568, Stop: 23005, Start Num: 14

Candidate Starts for Squiddly_29:

(Start: 14 @22568 has 23 MA's), (Start: 24 @22625 has 1 MA's), (Start: 32 @22652 has 1 MA's), (33, 22655), (34, 22658), (39, 22673), (43, 22685), (55, 22745), (62, 22775), (69, 22832), (70, 22835), (73, 22847), (75, 22859), (76, 22862), (77, 22868), (79, 22880), (84, 22916), (85, 22925), (89, 22937), (91, 22943), (93, 22949), (94, 22952), (95, 22955), (97, 22964), (98, 22970),

Gene: Suscepit_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Suscepit_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: TChen_35 Start: 30090, Stop: 30461, Start Num: 30

Candidate Starts for TChen_35:

(Start: 20 @30057 has 1 MA's), (Start: 25 @30072 has 9 MA's), (Start: 30 @30090 has 1 MA's), (34, 30102), (35, 30105), (36, 30108), (38, 30114), (39, 30117), (40, 30120), (43, 30129), (45, 30141), (52, 30177), (53, 30180), (55, 30189), (56, 30192), (58, 30198), (62, 30219), (64, 30255), (68, 30273), (70, 30279), (71, 30285), (72, 30288), (73, 30291), (75, 30303), (77, 30312), (81, 30345), (82, 30348), (88, 30378), (93, 30393), (96, 30405),

Gene: Tayonia_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Tayonia_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: ThetaBob_35 Start: 29008, Stop: 29412, Start Num: 20

Candidate Starts for ThetaBob_35:

(Start: 20 @29008 has 1 MA's), (Start: 24 @29020 has 1 MA's), (Start: 25 @29023 has 9 MA's), (29, 29038), (33, 29050), (36, 29059), (38, 29065), (43, 29080), (46, 29104), (52, 29128), (53, 29131), (54, 29137), (56, 29143), (58, 29149), (60, 29158), (61, 29161), (64, 29206), (68, 29224), (71, 29236), (72, 29239), (73, 29242), (76, 29257), (83, 29308), (87, 29326), (88, 29329), (93, 29344), (96, 29356),

Gene: Tillicus_39 Start: 32042, Stop: 32440, Start Num: 19

Candidate Starts for Tillicus_39:

(Start: 19 @32042 has 40 MA's), (48, 32147), (52, 32159), (53, 32162), (58, 32180), (63, 32219), (65, 32240), (73, 32273), (75, 32285), (85, 32351), (88, 32360), (91, 32369), (93, 32375), (97, 32390),

Gene: TillyBobJoe_43 Start: 35665, Stop: 36099, Start Num: 17

Candidate Starts for TillyBobJoe_43:

(11, 35605), (12, 35629), (Start: 17 @35665 has 14 MA's), (37, 35740), (45, 35770), (51, 35803), (55, 35818), (56, 35821), (74, 35929), (82, 35977), (83, 35986), (93, 36022), (95, 36028), (97, 36037),

Gene: Togo_42 Start: 35861, Stop: 36295, Start Num: 17

Candidate Starts for Togo_42:

(11, 35801), (12, 35825), (Start: 17 @35861 has 14 MA's), (37, 35936), (45, 35966), (51, 35999), (55, 36014), (56, 36017), (74, 36125), (82, 36173), (83, 36182), (93, 36218), (95, 36224), (97, 36233),

Gene: Toniann_54 Start: 33774, Stop: 34229, Start Num: 15

Candidate Starts for Toniann_54:

(12, 33759), (Start: 15 @33774 has 12 MA's), (18, 33801), (26, 33828), (36, 33858), (41, 33873), (53, 33921), (54, 33927), (56, 33933), (66, 34002), (72, 34029), (74, 34041), (83, 34119), (92, 34152), (93, 34155), (98, 34176),

Gene: Trumpet_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Trumpet_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Whitney_28 Start: 21973, Stop: 22413, Start Num: 14

Candidate Starts for Whitney_28:

(Start: 14 @21973 has 23 MA's), (Start: 24 @22030 has 1 MA's), (Start: 32 @22057 has 1 MA's), (54, 22147), (62, 22180), (68, 22234), (69, 22237), (70, 22240), (72, 22249), (73, 22252), (77, 22273), (79, 22285), (89, 22342), (91, 22348), (93, 22354), (94, 22357), (95, 22360), (97, 22369), (98, 22375), (100, 22402),

Gene: WilliamBoone_54 Start: 33126, Stop: 33575, Start Num: 15

Candidate Starts for WilliamBoone_54:

(12, 33111), (Start: 15 @33126 has 12 MA's), (26, 33174), (36, 33204), (40, 33216), (48, 33252), (53, 33267), (66, 33348), (68, 33360), (80, 33432), (83, 33465), (93, 33501), (98, 33522),

Gene: Wojtek_39 Start: 32308, Stop: 32703, Start Num: 19

Candidate Starts for Wojtek_39:

(Start: 19 @32308 has 40 MA's), (42, 32374), (53, 32428), (61, 32458), (66, 32509), (68, 32521), (86, 32620), (93, 32641), (94, 32644), (97, 32656),

Gene: Yeezy_26 Start: 21154, Stop: 21528, Start Num: 19

Candidate Starts for Yeezy_26:

(10, 21070), (Start: 19 @21154 has 40 MA's), (36, 21202), (44, 21226), (45, 21232), (48, 21256), (51, 21265), (54, 21277), (88, 21469), (90, 21475), (91, 21478),

Gene: Yikes_41 Start: 33687, Stop: 34082, Start Num: 19

Candidate Starts for Yikes_41:

(Start: 19 @33687 has 40 MA's), (42, 33753), (53, 33807), (61, 33837), (66, 33888), (68, 33900), (75, 33930), (86, 33999), (93, 34020), (94, 34023), (97, 34035),

Gene: Yoshi_42 Start: 29099, Stop: 29485, Start Num: 25

Candidate Starts for Yoshi_42:

(Start: 20 @29084 has 1 MA's), (Start: 24 @29096 has 1 MA's), (Start: 25 @29099 has 9 MA's), (35, 29132), (36, 29135), (37, 29138), (38, 29141), (40, 29147), (41, 29150), (46, 29180), (50, 29198), (52, 29204), (58, 29225), (59, 29231), (62, 29246), (68, 29300), (70, 29306), (71, 29312), (72, 29315), (73, 29318), (76, 29333), (81, 29372), (83, 29384), (87, 29402), (93, 29420), (96, 29432),

Gene: YungMoney_46 Start: 38304, Stop: 38738, Start Num: 17

Candidate Starts for YungMoney_46:

(11, 38244), (12, 38268), (Start: 17 @38304 has 14 MA's), (21, 38325), (27, 38349), (28, 38352), (Start: 32 @38364 has 1 MA's), (37, 38379), (40, 38388), (45, 38409), (55, 38457), (56, 38460), (58, 38466), (70, 38547), (74, 38568), (78, 38583), (82, 38616), (93, 38661), (95, 38667), (97, 38676), (102, 38715),

Gene: Zameen_26 Start: 21932, Stop: 22306, Start Num: 19

Candidate Starts for Zameen_26:

(10, 21848), (Start: 19 @21932 has 40 MA's), (36, 21980), (44, 22004), (45, 22010), (48, 22034), (51, 22043), (54, 22055), (88, 22247), (90, 22253), (91, 22256),

Gene: Zany_39 Start: 33212, Stop: 33607, Start Num: 19

Candidate Starts for Zany_39:

(Start: 19 @33212 has 40 MA's), (42, 33278), (53, 33332), (66, 33413), (68, 33425), (75, 33455), (86, 33524), (93, 33545), (94, 33548), (97, 33560),

Gene: Zapner_42 Start: 30180, Stop: 30569, Start Num: 25

Candidate Starts for Zapner_42:

(Start: 20 @30165 has 1 MA's), (Start: 24 @30177 has 1 MA's), (Start: 25 @30180 has 9 MA's), (29, 30195), (33, 30207), (36, 30216), (38, 30222), (43, 30237), (46, 30261), (52, 30285), (53, 30288), (54, 30294), (56, 30300), (58, 30306), (60, 30315), (61, 30318), (64, 30363), (68, 30381), (71, 30393), (72, 30396), (73, 30399), (76, 30414), (83, 30465), (87, 30483), (88, 30486), (93, 30501), (96, 30513),