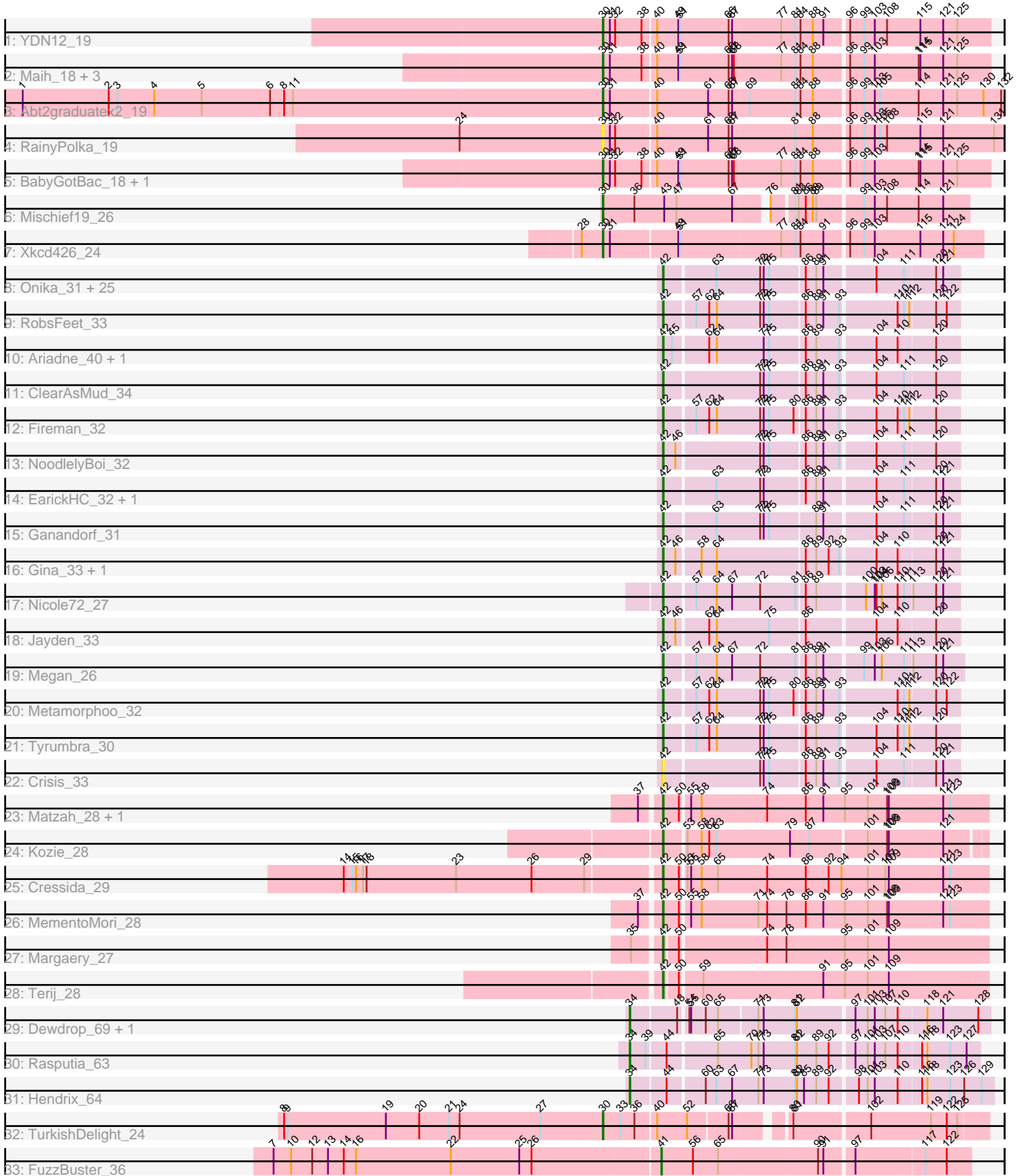


Pham 157845



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 157845 Report

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

Pham number 157845 has 67 members, 6 are drafts.

Phages represented in each track:

- Track 1 : YDN12_19
- Track 2 : Maih_18, BayC_18, Asis_18, Salete_18
- Track 3 : Abt2graduatex2_19
- Track 4 : RainyPolka_19
- Track 5 : BabyGotBac_18, TP1604_18
- Track 6 : Mischief19_26
- Track 7 : Xkcd426_24
- Track 8 : Onika_31, Piperis_32, Selwyn23_33, Yeti_32, Pulchra_33, Cranjis_33, Ramiel05_31, Honeyfin_33, Antares_32, Kowalski_31, Jollipop_32, PiperSansNom_32, Phrancesco_32, Phorgeous_31, Paschalis_31, Shotgun_31, Scumberland_33, Hermeonysus_31, CrazyRich_31, LittleFortune_33, Savannah_31, Jefe_32, Busephilis_31, BrazzalePHS_31, Quhwah_35, PierreOrion_32
- Track 9 : RobsFeet_33
- Track 10 : Ariadne_40, Smarties_40
- Track 11 : ClearAsMud_34
- Track 12 : Fireman_32
- Track 13 : NoodlelyBoi_32
- Track 14 : EarickHC_32, KaiHaiDragon_32
- Track 15 : Ganandorf_31
- Track 16 : Gina_33, Teamocil_33
- Track 17 : Nicole72_27
- Track 18 : Jayden_33
- Track 19 : Megan_26
- Track 20 : Metamorphoo_32
- Track 21 : Tyumbra_30
- Track 22 : Crisis_33
- Track 23 : Matzah_28, Cinna_27
- Track 24 : Kozie_28
- Track 25 : Cressida_29
- Track 26 : MementoMori_28
- Track 27 : Margaery_27
- Track 28 : Terij_28
- Track 29 : Dewdrop_69, Leaf_69
- Track 30 : Rasputia_63
- Track 31 : Hendrix_64
- Track 32 : TurkishDelight_24
- Track 33 : FuzzBuster_36

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

The start number called the most often in the published annotations is 42, it was called in 45 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares_32, Ariadne_40, BrazzalePHS_31, Busephilis_31, Cinna_27, ClearAsMud_34, Cranjis_33, CrazyRich_31, Cressida_29, Crisis_33, EarickHC_32, Fireman_32, Ganandorf_31, Gina_33, Hermeonysus_31, Honeyfin_33, Jayden_33, Jefe_32, Jollipop_32, KaiHaiDragon_32, Kowalski_31, Kozie_28, LittleFortune_33, Margaery_27, Matzah_28, Megan_26, MementoMori_28, Metamorphoo_32, Nicole72_27, NoodlelyBoi_32, Onika_31, Paschalis_31, Phorgeous_31, Phrancesco_32, PierreOrion_32, PiperSansNom_32, Piperis_32, Pulchra_33, Quhwah_35, Ramiel05_31, RobsFeet_33, Savannah_31, Scumberland_33, Selwyn23_33, Shotgun_31, Smarties_40, Teamocil_33, Terij_28, Tyrumbra_30, Yeti_32,

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

-

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

- Abt2graduatex2_19, Asis_18, BabyGotBac_18, BayC_18, Dewdrop_69, FuzzBuster_36, Hendrix_64, Leaf_69, Maih_18, Mischief19_26, RainyPolka_19, Rasputia_63, Salete_18, TP1604_18, TurkishDelight_24, Xkcd426_24, YDN12_19,

Summary by start number:

Start 30:

- Found in 12 of 67 (17.9%) of genes in pham
- Manual Annotations of this start: 11 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abt2graduatex2_19 (BG), Asis_18 (BG), BabyGotBac_18 (BG), BayC_18 (BG), Maih_18 (BG), Mischief19_26 (BG), RainyPolka_19 (BG), Salete_18 (BG), TP1604_18 (BG), TurkishDelight_24 (singleton), Xkcd426_24 (BG), YDN12_19 (BG),

Start 34:

- Found in 4 of 67 (6.0%) of genes in pham
- Manual Annotations of this start: 4 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dewdrop_69 (GC), Hendrix_64 (GC), Leaf_69 (GC), Rasputia_63 (GC),

Start 41:

- Found in 1 of 67 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FuzzBuster_36 (singleton),

Start 42:

- Found in 50 of 67 (74.6%) of genes in pham
- Manual Annotations of this start: 45 of 61
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antares_32 (EC), Ariadne_40 (EC), BrazzalePHS_31 (EC), Busephilis_31 (EC), Cinna_27 (EI), ClearAsMud_34 (EC), Cranjis_33 (EC), CrazyRich_31 (EC), Cressida_29 (EI), Crisis_33 (EC), EarickHC_32 (EC), Fireman_32 (EC), Ganandorf_31 (EC), Gina_33 (EC), Hermeonysus_31 (EC), Honeyfin_33 (EC), Jayden_33 (EC), Jefe_32 (EC), Jollipop_32 (EC), KaiHaiDragon_32 (EC), Kowalski_31 (EC), Kozi_28 (EI), LittleFortune_33 (EC), Margaery_27 (EI), Matzah_28 (EI), Megan_26 (EC), MementoMori_28 (EI), Metamorphoo_32 (EC), Nicole72_27 (EC), NoodlelyBoi_32 (EC), Onika_31 (EC), Paschalis_31 (EC), Phorgeous_31 (EC), Phrancesco_32 (EC), PierreOrion_32 (EC), PiperSansNom_32 (EC), Piperis_32 (EC), Pulchra_33 (EC), Quhwah_35 (EC), Ramiel05_31 (EC), RobsFeet_33 (EC), Savannah_31 (EC), Scumberland_33 (EC), Selwyn23_33 (EC), Shotgun_31 (EC), Smarties_40 (EC), Teamocil_33 (EC), Terij_28 (EI), Tyumbra_30 (EC), Yeti_32 (EC),

Summary by clusters:

There are 5 clusters represented in this pham: GC, singleton, BG, EI, EC,

Info for manual annotations of cluster BG:

- Start number 30 was manually annotated 10 times for cluster BG.

Info for manual annotations of cluster EC:

- Start number 42 was manually annotated 38 times for cluster EC.

Info for manual annotations of cluster EI:

- Start number 42 was manually annotated 7 times for cluster EI.

Info for manual annotations of cluster GC:

- Start number 34 was manually annotated 4 times for cluster GC.

Gene Information:

Gene: Abt2graduatex2_19 Start: 19085, Stop: 19747, Start Num: 30

Candidate Starts for Abt2graduatex2_19:

(1, 18098), (2, 18245), (3, 18260), (4, 18323), (5, 18404), (6, 18521), (8, 18545), (11, 18560), (Start: 30 @19085 has 11 MA's), (31, 19097), (40, 19172), (61, 19256), (66, 19289), (67, 19295), (69, 19322), (81, 19400), (84, 19409), (88, 19430), (96, 19484), (99, 19508), (103, 19526), (105, 19535), (114, 19601), (121, 19643), (125, 19667), (130, 19712), (132, 19742),

Gene: Antares_32 Start: 19129, Stop: 19593, Start Num: 42

Candidate Starts for Antares_32:

(Start: 42 @19129 has 45 MA's), (63, 19210), (72, 19282), (73, 19288), (75, 19297), (86, 19348), (89, 19366), (91, 19378), (104, 19459), (111, 19504), (120, 19555), (121, 19567),

Gene: Ariadne_40 Start: 20819, Stop: 21283, Start Num: 42

Candidate Starts for Ariadne_40:

(Start: 42 @20819 has 45 MA's), (45, 20834), (62, 20888), (64, 20900), (73, 20978), (75, 20987), (86, 21038), (89, 21056), (93, 21095), (104, 21149), (110, 21185), (120, 21245),

Gene: Asis_18 Start: 18600, Stop: 19238, Start Num: 30

Candidate Starts for Asis_18:

(Start: 30 @18600 has 11 MA's), (31, 18612), (38, 18666), (40, 18687), (49, 18723), (51, 18726), (66, 18804), (67, 18810), (68, 18813), (77, 18891), (81, 18915), (84, 18924), (88, 18945), (96, 18999), (99, 19023), (103, 19041), (114, 19116), (115, 19119), (121, 19158), (125, 19182),

Gene: BabyGotBac_18 Start: 18600, Stop: 19238, Start Num: 30

Candidate Starts for BabyGotBac_18:

(Start: 30 @18600 has 11 MA's), (31, 18612), (32, 18621), (38, 18666), (40, 18687), (49, 18723), (51, 18726), (66, 18804), (67, 18810), (68, 18813), (77, 18891), (81, 18915), (84, 18924), (88, 18945), (96, 18999), (99, 19023), (103, 19041), (114, 19116), (115, 19119), (121, 19158), (125, 19182),

Gene: BayC_18 Start: 18600, Stop: 19238, Start Num: 30

Candidate Starts for BayC_18:

(Start: 30 @18600 has 11 MA's), (31, 18612), (38, 18666), (40, 18687), (49, 18723), (51, 18726), (66, 18804), (67, 18810), (68, 18813), (77, 18891), (81, 18915), (84, 18924), (88, 18945), (96, 18999), (99, 19023), (103, 19041), (114, 19116), (115, 19119), (121, 19158), (125, 19182),

Gene: BrazzalePHS_31 Start: 18924, Stop: 19388, Start Num: 42

Candidate Starts for BrazzalePHS_31:

(Start: 42 @18924 has 45 MA's), (63, 19005), (72, 19077), (73, 19083), (75, 19092), (86, 19143), (89, 19161), (91, 19173), (104, 19254), (111, 19299), (120, 19350), (121, 19362),

Gene: Busephilis_31 Start: 18859, Stop: 19323, Start Num: 42

Candidate Starts for Busephilis_31:

(Start: 42 @18859 has 45 MA's), (63, 18940), (72, 19012), (73, 19018), (75, 19027), (86, 19078), (89, 19096), (91, 19108), (104, 19189), (111, 19234), (120, 19285), (121, 19297),

Gene: Cinna_27 Start: 18274, Stop: 18807, Start Num: 42

Candidate Starts for Cinna_27:

(37, 18247), (Start: 42 @18274 has 45 MA's), (50, 18301), (55, 18313), (58, 18331), (74, 18439), (86, 18496), (91, 18526), (95, 18562), (101, 18601), (108, 18634), (109, 18637), (121, 18730), (123, 18742),

Gene: ClearAsMud_34 Start: 19638, Stop: 20102, Start Num: 42

Candidate Starts for ClearAsMud_34:

(Start: 42 @19638 has 45 MA's), (72, 19791), (73, 19797), (75, 19806), (86, 19857), (89, 19875), (91, 19887), (93, 19914), (104, 19968), (111, 20013), (120, 20064),

Gene: Cranjis_33 Start: 19084, Stop: 19548, Start Num: 42

Candidate Starts for Cranjis_33:

(Start: 42 @19084 has 45 MA's), (63, 19165), (72, 19237), (73, 19243), (75, 19252), (86, 19303), (89, 19321), (91, 19333), (104, 19414), (111, 19459), (120, 19510), (121, 19522),

Gene: CrazyRich_31 Start: 18893, Stop: 19357, Start Num: 42

Candidate Starts for CrazyRich_31:

(Start: 42 @18893 has 45 MA's), (63, 18974), (72, 19046), (73, 19052), (75, 19061), (86, 19112), (89, 19130), (91, 19142), (104, 19223), (111, 19268), (120, 19319), (121, 19331),

Gene: Cressida_29 Start: 18333, Stop: 18866, Start Num: 42

Candidate Starts for Cressida_29:

(14, 17808), (15, 17823), (16, 17829), (17, 17841), (18, 17847), (23, 18000), (26, 18129), (29, 18219), (Start: 42 @18333 has 45 MA's), (50, 18360), (53, 18366), (55, 18372), (58, 18390), (65, 18417), (74, 18498), (86, 18555), (92, 18594), (94, 18615), (101, 18660), (107, 18690), (109, 18696), (121, 18789), (123, 18801),

Gene: Crisis_33 Start: 18878, Stop: 19342, Start Num: 42

Candidate Starts for Crisis_33:

(Start: 42 @18878 has 45 MA's), (72, 19031), (73, 19037), (75, 19046), (86, 19097), (89, 19115), (91, 19127), (93, 19154), (104, 19208), (111, 19253), (120, 19304), (121, 19316),

Gene: Dewdrop_69 Start: 38303, Stop: 38872, Start Num: 34

Candidate Starts for Dewdrop_69:

(Start: 34 @38303 has 4 MA's), (48, 38378), (54, 38390), (55, 38393), (60, 38417), (65, 38438), (71, 38501), (73, 38510), (81, 38558), (82, 38561), (97, 38648), (101, 38669), (103, 38681), (107, 38699), (110, 38720), (118, 38765), (121, 38792), (128, 38852),

Gene: EarickHC_32 Start: 18804, Stop: 19268, Start Num: 42

Candidate Starts for EarickHC_32:

(Start: 42 @18804 has 45 MA's), (63, 18885), (72, 18957), (73, 18963), (86, 19023), (89, 19041), (91, 19053), (104, 19134), (111, 19179), (120, 19230), (121, 19242),

Gene: Fireman_32 Start: 18694, Stop: 19158, Start Num: 42

Candidate Starts for Fireman_32:

(Start: 42 @18694 has 45 MA's), (57, 18742), (62, 18763), (64, 18775), (72, 18847), (73, 18853), (75, 18862), (80, 18898), (86, 18913), (89, 18931), (91, 18943), (93, 18970), (104, 19024), (110, 19060), (111, 19069), (112, 19078), (120, 19120),

Gene: FuzzBuster_36 Start: 18981, Stop: 19487, Start Num: 41

Candidate Starts for FuzzBuster_36:

(7, 18327), (10, 18357), (12, 18393), (13, 18420), (14, 18447), (16, 18468), (22, 18630), (25, 18747), (26, 18768), (Start: 41 @18981 has 1 MA's), (56, 19035), (65, 19077), (90, 19242), (91, 19251), (97, 19296), (117, 19410), (122, 19446),

Gene: Ganandorf_31 Start: 18940, Stop: 19404, Start Num: 42

Candidate Starts for Ganandorf_31:

(Start: 42 @18940 has 45 MA's), (63, 19021), (72, 19093), (73, 19099), (75, 19108), (89, 19177), (91, 19189), (104, 19270), (111, 19315), (120, 19366), (121, 19378),

Gene: Gina_33 Start: 18717, Stop: 19181, Start Num: 42

Candidate Starts for Gina_33:

(Start: 42 @18717 has 45 MA's), (46, 18738), (58, 18774), (64, 18798), (86, 18936), (89, 18954), (92, 18975), (93, 18993), (104, 19047), (110, 19083), (120, 19143), (121, 19155),

Gene: Hendrix_64 Start: 37513, Stop: 38091, Start Num: 34

Candidate Starts for Hendrix_64:

(Start: 34 @37513 has 4 MA's), (44, 37570), (60, 37627), (63, 37645), (67, 37672), (71, 37717), (73, 37726), (81, 37774), (82, 37777), (85, 37786), (89, 37807), (92, 37828), (98, 37870), (101, 37885), (103, 37897), (110, 37936), (116, 37972), (118, 37981), (123, 38020), (126, 38041), (129, 38071),

Gene: Hermeonysus_31 Start: 18813, Stop: 19277, Start Num: 42

Candidate Starts for Hermeonysus_31:

(Start: 42 @18813 has 45 MA's), (63, 18894), (72, 18966), (73, 18972), (75, 18981), (86, 19032), (89, 19050), (91, 19062), (104, 19143), (111, 19188), (120, 19239), (121, 19251),

Gene: Honeyfin_33 Start: 19128, Stop: 19592, Start Num: 42

Candidate Starts for Honeyfin_33:

(Start: 42 @19128 has 45 MA's), (63, 19209), (72, 19281), (73, 19287), (75, 19296), (86, 19347), (89, 19365), (91, 19377), (104, 19458), (111, 19503), (120, 19554), (121, 19566),

Gene: Jayden_33 Start: 18864, Stop: 19328, Start Num: 42

Candidate Starts for Jayden_33:

(Start: 42 @18864 has 45 MA's), (46, 18885), (62, 18933), (64, 18945), (75, 19032), (86, 19083), (104, 19194), (110, 19230), (120, 19290),

Gene: Jefe_32 Start: 18865, Stop: 19329, Start Num: 42

Candidate Starts for Jefe_32:

(Start: 42 @18865 has 45 MA's), (63, 18946), (72, 19018), (73, 19024), (75, 19033), (86, 19084), (89, 19102), (91, 19114), (104, 19195), (111, 19240), (120, 19291), (121, 19303),

Gene: Jollipop_32 Start: 19210, Stop: 19674, Start Num: 42

Candidate Starts for Jollipop_32:

(Start: 42 @19210 has 45 MA's), (63, 19291), (72, 19363), (73, 19369), (75, 19378), (86, 19429), (89, 19447), (91, 19459), (104, 19540), (111, 19585), (120, 19636), (121, 19648),

Gene: KaiHaiDragon_32 Start: 18804, Stop: 19268, Start Num: 42

Candidate Starts for KaiHaiDragon_32:

(Start: 42 @18804 has 45 MA's), (63, 18885), (72, 18957), (73, 18963), (86, 19023), (89, 19041), (91, 19053), (104, 19134), (111, 19179), (120, 19230), (121, 19242),

Gene: Kowalski_31 Start: 18920, Stop: 19384, Start Num: 42

Candidate Starts for Kowalski_31:

(Start: 42 @18920 has 45 MA's), (63, 19001), (72, 19073), (73, 19079), (75, 19088), (86, 19139), (89, 19157), (91, 19169), (104, 19250), (111, 19295), (120, 19346), (121, 19358),

Gene: Kozie_28 Start: 18580, Stop: 19092, Start Num: 42

Candidate Starts for Kozie_28:

(Start: 42 @18580 has 45 MA's), (53, 18613), (58, 18637), (62, 18649), (63, 18661), (79, 18778), (87, 18808), (101, 18898), (108, 18931), (109, 18934), (121, 19027),

Gene: Leaf_69 Start: 38303, Stop: 38872, Start Num: 34

Candidate Starts for Leaf_69:

(Start: 34 @38303 has 4 MA's), (48, 38378), (54, 38390), (55, 38393), (60, 38417), (65, 38438), (71, 38501), (73, 38510), (81, 38558), (82, 38561), (97, 38648), (101, 38669), (103, 38681), (107, 38699), (110, 38720), (118, 38765), (121, 38792), (128, 38852),

Gene: LittleFortune_33 Start: 19170, Stop: 19634, Start Num: 42

Candidate Starts for LittleFortune_33:

(Start: 42 @19170 has 45 MA's), (63, 19251), (72, 19323), (73, 19329), (75, 19338), (86, 19389), (89, 19407), (91, 19419), (104, 19500), (111, 19545), (120, 19596), (121, 19608),

Gene: Maih_18 Start: 18599, Stop: 19237, Start Num: 30

Candidate Starts for Maih_18:

(Start: 30 @18599 has 11 MA's), (31, 18611), (38, 18665), (40, 18686), (49, 18722), (51, 18725), (66, 18803), (67, 18809), (68, 18812), (77, 18890), (81, 18914), (84, 18923), (88, 18944), (96, 18998), (99,

19022), (103, 19040), (114, 19115), (115, 19118), (121, 19157), (125, 19181),

Gene: Margaery_27 Start: 18221, Stop: 18748, Start Num: 42

Candidate Starts for Margaery_27:

(35, 18182), (Start: 42 @18221 has 45 MA's), (50, 18242), (74, 18380), (78, 18410), (95, 18503), (101, 18542), (109, 18578),

Gene: Matzah_28 Start: 18251, Stop: 18784, Start Num: 42

Candidate Starts for Matzah_28:

(37, 18224), (Start: 42 @18251 has 45 MA's), (50, 18278), (55, 18290), (58, 18308), (74, 18416), (86, 18473), (91, 18503), (95, 18539), (101, 18578), (108, 18611), (109, 18614), (121, 18707), (123, 18719),

Gene: Megan_26 Start: 20113, Stop: 20586, Start Num: 42

Candidate Starts for Megan_26:

(Start: 42 @20113 has 45 MA's), (57, 20161), (64, 20194), (67, 20218), (72, 20266), (81, 20320), (86, 20332), (89, 20350), (91, 20362), (99, 20422), (103, 20440), (106, 20452), (111, 20488), (113, 20500), (120, 20539), (121, 20551),

Gene: MementoMori_28 Start: 17980, Stop: 18513, Start Num: 42

Candidate Starts for MementoMori_28:

(37, 17953), (Start: 42 @17980 has 45 MA's), (50, 18007), (55, 18019), (58, 18037), (71, 18130), (74, 18145), (78, 18175), (86, 18202), (91, 18232), (95, 18268), (101, 18307), (108, 18340), (109, 18343), (121, 18436), (123, 18448),

Gene: Metamorphoo_32 Start: 18716, Stop: 19180, Start Num: 42

Candidate Starts for Metamorphoo_32:

(Start: 42 @18716 has 45 MA's), (57, 18764), (62, 18785), (64, 18797), (72, 18869), (73, 18875), (75, 18884), (80, 18920), (86, 18935), (89, 18953), (91, 18965), (93, 18992), (110, 19082), (111, 19091), (112, 19100), (120, 19142), (122, 19160),

Gene: Mischief19_26 Start: 28535, Stop: 29116, Start Num: 30

Candidate Starts for Mischief19_26:

(Start: 30 @28535 has 11 MA's), (36, 28589), (43, 28640), (47, 28661), (67, 28754), (76, 28799), (81, 28832), (83, 28838), (86, 28850), (88, 28862), (89, 28868), (99, 28940), (103, 28958), (108, 28979), (114, 29030), (121, 29072),

Gene: Nicole72_27 Start: 20490, Stop: 20954, Start Num: 42

Candidate Starts for Nicole72_27:

(Start: 42 @20490 has 45 MA's), (57, 20538), (64, 20571), (67, 20595), (72, 20643), (81, 20697), (86, 20709), (89, 20727), (100, 20802), (103, 20817), (104, 20820), (106, 20829), (110, 20856), (111, 20865), (113, 20877), (120, 20916), (121, 20928),

Gene: NoodlelyBoi_32 Start: 19248, Stop: 19712, Start Num: 42

Candidate Starts for NoodlelyBoi_32:

(Start: 42 @19248 has 45 MA's), (46, 19269), (72, 19401), (73, 19407), (75, 19416), (86, 19467), (89, 19485), (91, 19497), (93, 19524), (104, 19578), (111, 19623), (120, 19674),

Gene: Onika_31 Start: 18895, Stop: 19359, Start Num: 42

Candidate Starts for Onika_31:

(Start: 42 @18895 has 45 MA's), (63, 18976), (72, 19048), (73, 19054), (75, 19063), (86, 19114), (89, 19132), (91, 19144), (104, 19225), (111, 19270), (120, 19321), (121, 19333),

Gene: Paschalis_31 Start: 18908, Stop: 19372, Start Num: 42

Candidate Starts for Paschalis_31:

(Start: 42 @18908 has 45 MA's), (63, 18989), (72, 19061), (73, 19067), (75, 19076), (86, 19127), (89, 19145), (91, 19157), (104, 19238), (111, 19283), (120, 19334), (121, 19346),

Gene: Phorgeous_31 Start: 18762, Stop: 19226, Start Num: 42

Candidate Starts for Phorgeous_31:

(Start: 42 @18762 has 45 MA's), (63, 18843), (72, 18915), (73, 18921), (75, 18930), (86, 18981), (89, 18999), (91, 19011), (104, 19092), (111, 19137), (120, 19188), (121, 19200),

Gene: Phrancesco_32 Start: 19040, Stop: 19504, Start Num: 42

Candidate Starts for Phrancesco_32:

(Start: 42 @19040 has 45 MA's), (63, 19121), (72, 19193), (73, 19199), (75, 19208), (86, 19259), (89, 19277), (91, 19289), (104, 19370), (111, 19415), (120, 19466), (121, 19478),

Gene: PierreOrion_32 Start: 19063, Stop: 19527, Start Num: 42

Candidate Starts for PierreOrion_32:

(Start: 42 @19063 has 45 MA's), (63, 19144), (72, 19216), (73, 19222), (75, 19231), (86, 19282), (89, 19300), (91, 19312), (104, 19393), (111, 19438), (120, 19489), (121, 19501),

Gene: PiperSansNom_32 Start: 19215, Stop: 19679, Start Num: 42

Candidate Starts for PiperSansNom_32:

(Start: 42 @19215 has 45 MA's), (63, 19296), (72, 19368), (73, 19374), (75, 19383), (86, 19434), (89, 19452), (91, 19464), (104, 19545), (111, 19590), (120, 19641), (121, 19653),

Gene: Piperis_32 Start: 18885, Stop: 19349, Start Num: 42

Candidate Starts for Piperis_32:

(Start: 42 @18885 has 45 MA's), (63, 18966), (72, 19038), (73, 19044), (75, 19053), (86, 19104), (89, 19122), (91, 19134), (104, 19215), (111, 19260), (120, 19311), (121, 19323),

Gene: Pulchra_33 Start: 19285, Stop: 19749, Start Num: 42

Candidate Starts for Pulchra_33:

(Start: 42 @19285 has 45 MA's), (63, 19366), (72, 19438), (73, 19444), (75, 19453), (86, 19504), (89, 19522), (91, 19534), (104, 19615), (111, 19660), (120, 19711), (121, 19723),

Gene: Quhwah_35 Start: 19511, Stop: 19975, Start Num: 42

Candidate Starts for Quhwah_35:

(Start: 42 @19511 has 45 MA's), (63, 19592), (72, 19664), (73, 19670), (75, 19679), (86, 19730), (89, 19748), (91, 19760), (104, 19841), (111, 19886), (120, 19937), (121, 19949),

Gene: RainyPolka_19 Start: 18941, Stop: 19603, Start Num: 30

Candidate Starts for RainyPolka_19:

(24, 18701), (Start: 30 @18941 has 11 MA's), (31, 18953), (32, 18962), (40, 19028), (61, 19112), (66, 19145), (67, 19151), (81, 19256), (88, 19286), (96, 19340), (99, 19364), (103, 19382), (105, 19391), (108, 19403), (115, 19460), (121, 19499), (131, 19586),

Gene: Ramiel05_31 Start: 18920, Stop: 19384, Start Num: 42

Candidate Starts for Ramiel05_31:

(Start: 42 @18920 has 45 MA's), (63, 19001), (72, 19073), (73, 19079), (75, 19088), (86, 19139), (89, 19157), (91, 19169), (104, 19250), (111, 19295), (120, 19346), (121, 19358),

Gene: Rasputia_63 Start: 37173, Stop: 37721, Start Num: 34

Candidate Starts for Rasputia_63:

(Start: 34 @37173 has 4 MA's), (39, 37200), (44, 37230), (65, 37308), (70, 37365), (71, 37377), (73, 37386), (81, 37434), (82, 37437), (89, 37467), (92, 37488), (97, 37524), (101, 37545), (103, 37557), (107, 37575), (110, 37596), (116, 37632), (118, 37641), (123, 37680), (127, 37701),

Gene: RobsFeet_33 Start: 18997, Stop: 19461, Start Num: 42

Candidate Starts for RobsFeet_33:

(Start: 42 @18997 has 45 MA's), (57, 19045), (62, 19066), (64, 19078), (72, 19150), (73, 19156), (75, 19165), (86, 19216), (89, 19234), (91, 19246), (93, 19273), (110, 19363), (111, 19372), (112, 19381), (120, 19423), (122, 19441),

Gene: Salete_18 Start: 18600, Stop: 19238, Start Num: 30

Candidate Starts for Salete_18:

(Start: 30 @18600 has 11 MA's), (31, 18612), (38, 18666), (40, 18687), (49, 18723), (51, 18726), (66, 18804), (67, 18810), (68, 18813), (77, 18891), (81, 18915), (84, 18924), (88, 18945), (96, 18999), (99, 19023), (103, 19041), (114, 19116), (115, 19119), (121, 19158), (125, 19182),

Gene: Savannah_31 Start: 18947, Stop: 19411, Start Num: 42

Candidate Starts for Savannah_31:

(Start: 42 @18947 has 45 MA's), (63, 19028), (72, 19100), (73, 19106), (75, 19115), (86, 19166), (89, 19184), (91, 19196), (104, 19277), (111, 19322), (120, 19373), (121, 19385),

Gene: Scumberland_33 Start: 19136, Stop: 19600, Start Num: 42

Candidate Starts for Scumberland_33:

(Start: 42 @19136 has 45 MA's), (63, 19217), (72, 19289), (73, 19295), (75, 19304), (86, 19355), (89, 19373), (91, 19385), (104, 19466), (111, 19511), (120, 19562), (121, 19574),

Gene: Selwyn23_33 Start: 19113, Stop: 19577, Start Num: 42

Candidate Starts for Selwyn23_33:

(Start: 42 @19113 has 45 MA's), (63, 19194), (72, 19266), (73, 19272), (75, 19281), (86, 19332), (89, 19350), (91, 19362), (104, 19443), (111, 19488), (120, 19539), (121, 19551),

Gene: Shotgun_31 Start: 18746, Stop: 19210, Start Num: 42

Candidate Starts for Shotgun_31:

(Start: 42 @18746 has 45 MA's), (63, 18827), (72, 18899), (73, 18905), (75, 18914), (86, 18965), (89, 18983), (91, 18995), (104, 19076), (111, 19121), (120, 19172), (121, 19184),

Gene: Smarties_40 Start: 20819, Stop: 21283, Start Num: 42

Candidate Starts for Smarties_40:

(Start: 42 @20819 has 45 MA's), (45, 20834), (62, 20888), (64, 20900), (73, 20978), (75, 20987), (86, 21038), (89, 21056), (93, 21095), (104, 21149), (110, 21185), (120, 21245),

Gene: TP1604_18 Start: 18600, Stop: 19238, Start Num: 30

Candidate Starts for TP1604_18:

(Start: 30 @18600 has 11 MA's), (31, 18612), (32, 18621), (38, 18666), (40, 18687), (49, 18723), (51, 18726), (66, 18804), (67, 18810), (68, 18813), (77, 18891), (81, 18915), (84, 18924), (88, 18945), (96, 18999), (99, 19023), (103, 19041), (114, 19116), (115, 19119), (121, 19158), (125, 19182),

Gene: Teamocil_33 Start: 18816, Stop: 19280, Start Num: 42

Candidate Starts for Teamocil_33:

(Start: 42 @18816 has 45 MA's), (46, 18837), (58, 18873), (64, 18897), (86, 19035), (89, 19053), (92, 19074), (93, 19092), (104, 19146), (110, 19182), (120, 19242), (121, 19254),

Gene: Terij_28 Start: 18304, Stop: 18828, Start Num: 42

Candidate Starts for Terij_28:

(Start: 42 @18304 has 45 MA's), (50, 18325), (59, 18358), (91, 18550), (95, 18586), (101, 18625), (109, 18661),

Gene: TurkishDelight_24 Start: 20839, Stop: 21438, Start Num: 30

Candidate Starts for TurkishDelight_24:

(8, 20296), (9, 20302), (19, 20470), (20, 20527), (21, 20578), (24, 20596), (27, 20734), (Start: 30 @20839 has 11 MA's), (33, 20869), (36, 20893), (40, 20926), (52, 20977), (66, 21040), (67, 21046), (80, 21118), (81, 21121), (102, 21241), (119, 21343), (122, 21370), (125, 21388),

Gene: Tyrumbra_30 Start: 18037, Stop: 18501, Start Num: 42

Candidate Starts for Tyrumbra_30:

(Start: 42 @18037 has 45 MA's), (57, 18085), (62, 18106), (64, 18118), (72, 18190), (73, 18196), (75, 18205), (86, 18256), (89, 18274), (93, 18313), (104, 18367), (110, 18403), (111, 18412), (112, 18421), (120, 18463),

Gene: Xkcd426_24 Start: 26011, Stop: 26637, Start Num: 30

Candidate Starts for Xkcd426_24:

(28, 25975), (Start: 30 @26011 has 11 MA's), (31, 26023), (49, 26134), (51, 26137), (77, 26302), (81, 26326), (84, 26335), (91, 26374), (96, 26410), (99, 26434), (103, 26452), (115, 26530), (121, 26569), (124, 26587),

Gene: YDN12_19 Start: 18536, Stop: 19174, Start Num: 30

Candidate Starts for YDN12_19:

(Start: 30 @18536 has 11 MA's), (31, 18548), (32, 18557), (38, 18602), (40, 18623), (49, 18659), (51, 18662), (66, 18740), (67, 18746), (77, 18827), (81, 18851), (84, 18860), (88, 18881), (91, 18899), (96, 18935), (99, 18959), (103, 18977), (108, 18998), (115, 19055), (121, 19094), (125, 19118),

Gene: Yeti_32 Start: 18915, Stop: 19379, Start Num: 42

Candidate Starts for Yeti_32:

(Start: 42 @18915 has 45 MA's), (63, 18996), (72, 19068), (73, 19074), (75, 19083), (86, 19134), (89, 19152), (91, 19164), (104, 19245), (111, 19290), (120, 19341), (121, 19353),