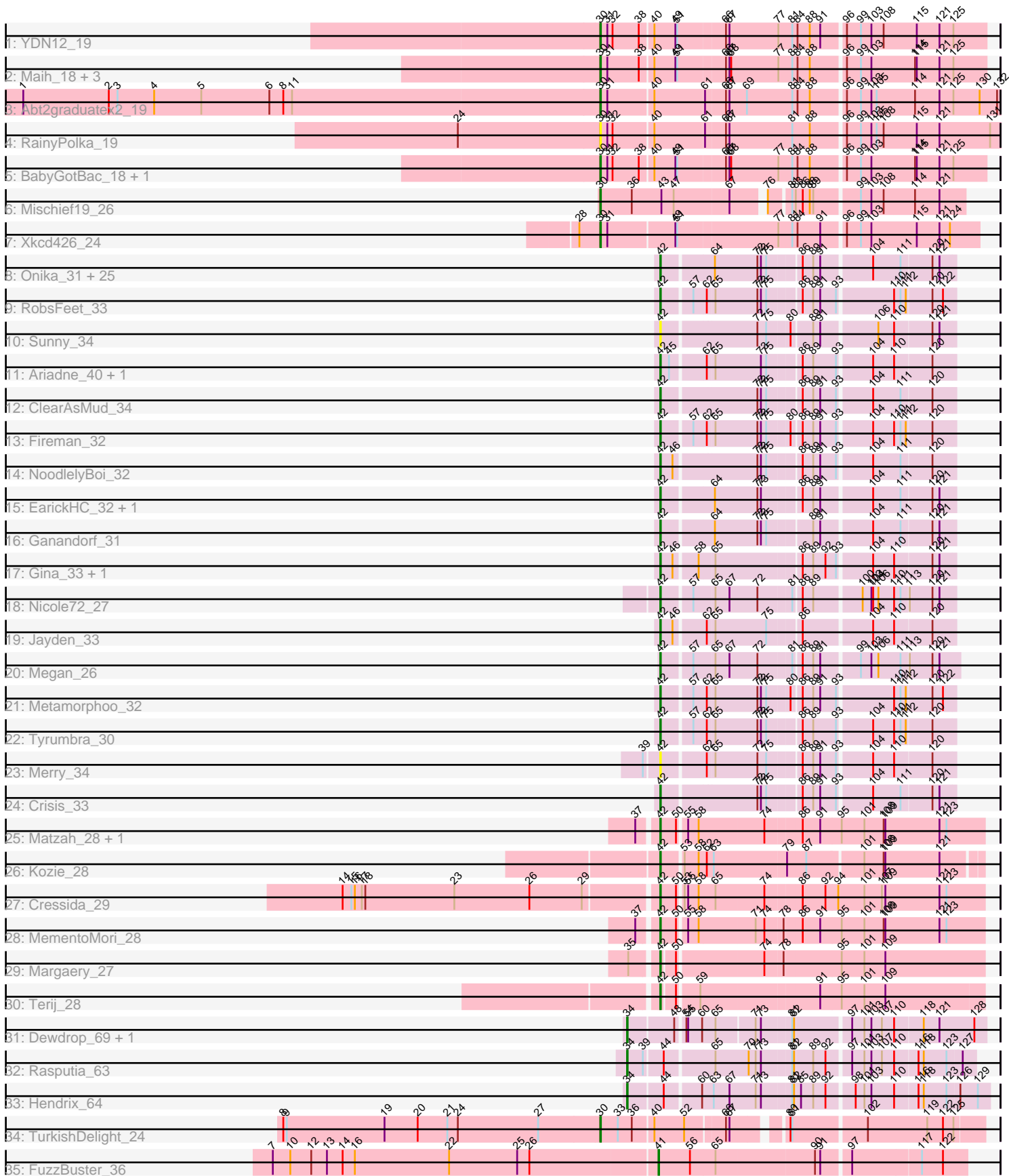


Pham 196519



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 196519 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196519 has 69 members, 4 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 : Sunny_34
- Track 11 : Ariadne_40, Smarties_40
- Track 12 : ClearAsMud_34
- Track 13 : Fireman_32
- Track 14 : NoodlelyBoi_32
- Track 15 : EarickHC_32, KaiHaiDragon_32
- Track 16 : Ganandorf_31
- Track 17 : Gina_33, Teamocil_33
- Track 18 : Nicole72_27
- Track 19 : Jayden_33
- Track 20 : Megan_26
- Track 21 : Metamorphoo_32
- Track 22 : Tyumbra_30
- Track 23 : Merry_34
- Track 24 : Crisis_33
- Track 25 : Matzah_28, Cinna_27
- Track 26 : Kozie_28
- Track 27 : Cressida_29
- Track 28 : MementoMori_28
- Track 29 : Margaery_27
- Track 30 : Terij_28
- Track 31 : Dewdrop_69, Leaf_69
- Track 32 : Rasputia_63
- Track 33 : Hendrix_64

- Track 34 : TurkishDelight_24
- Track 35 : 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 49 of the 65 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, Merry_34, 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, Sunny_34, 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 69 (17.4%) of genes in pham
- Manual Annotations of this start: 11 of 65
- 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 69 (5.8%) of genes in pham
- Manual Annotations of this start: 4 of 65
- 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 69 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present

- Phage (with cluster) where this start called: FuzzBuster_36 (singleton),

Start 42:

- Found in 52 of 69 (75.4%) of genes in pham
- Manual Annotations of this start: 49 of 65
- 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), Merry_34 (EC), 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), Sunny_34 (EC), Teamocil_33 (EC), Terij_28 (EI), Tyrumbra_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 42 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 49 MA's), (64, 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 49 MA's), (45, 20834), (62, 20888), (65, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 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 49 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 49 MA's), (64, 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 49 MA's), (64, 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 49 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 49 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 49 MA's), (64, 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 49 MA's), (57, 18742), (62, 18763), (65, 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 49 MA's), (64, 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 49 MA's), (46, 18738), (58, 18774), (65, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (46, 18885), (62, 18933), (65, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 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 49 MA's), (64, 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 49 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 49 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 49 MA's), (57, 20161), (65, 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 49 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: Merry_34 Start: 20977, Stop: 21441, Start Num: 42

Candidate Starts for Merry_34:

(39, 20953), (Start: 42 @20977 has 49 MA's), (62, 21046), (65, 21058), (72, 21130), (75, 21145), (86, 21196), (89, 21214), (91, 21226), (93, 21253), (104, 21307), (110, 21343), (120, 21403),

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

Candidate Starts for Metamorphoo_32:

(Start: 42 @18716 has 49 MA's), (57, 18764), (62, 18785), (65, 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 49 MA's), (57, 20538), (65, 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 49 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (57, 19045), (62, 19066), (65, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (64, 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 49 MA's), (45, 20834), (62, 20888), (65, 20900), (73, 20978), (75, 20987), (86, 21038), (89, 21056), (93, 21095), (104, 21149), (110, 21185), (120, 21245),

Gene: Sunny_34 Start: 20982, Stop: 21446, Start Num: 42

Candidate Starts for Sunny_34:

(Start: 42 @20982 has 49 MA's), (72, 21135), (75, 21150), (80, 21186), (89, 21219), (91, 21231), (106, 21321), (110, 21348), (120, 21408), (121, 21420),

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 49 MA's), (46, 18837), (58, 18873), (65, 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 49 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 49 MA's), (57, 18085), (62, 18106), (65, 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 49 MA's), (64, 18996), (72, 19068), (73, 19074), (75, 19083), (86, 19134), (89, 19152), (91, 19164), (104, 19245), (111, 19290), (120, 19341), (121, 19353),