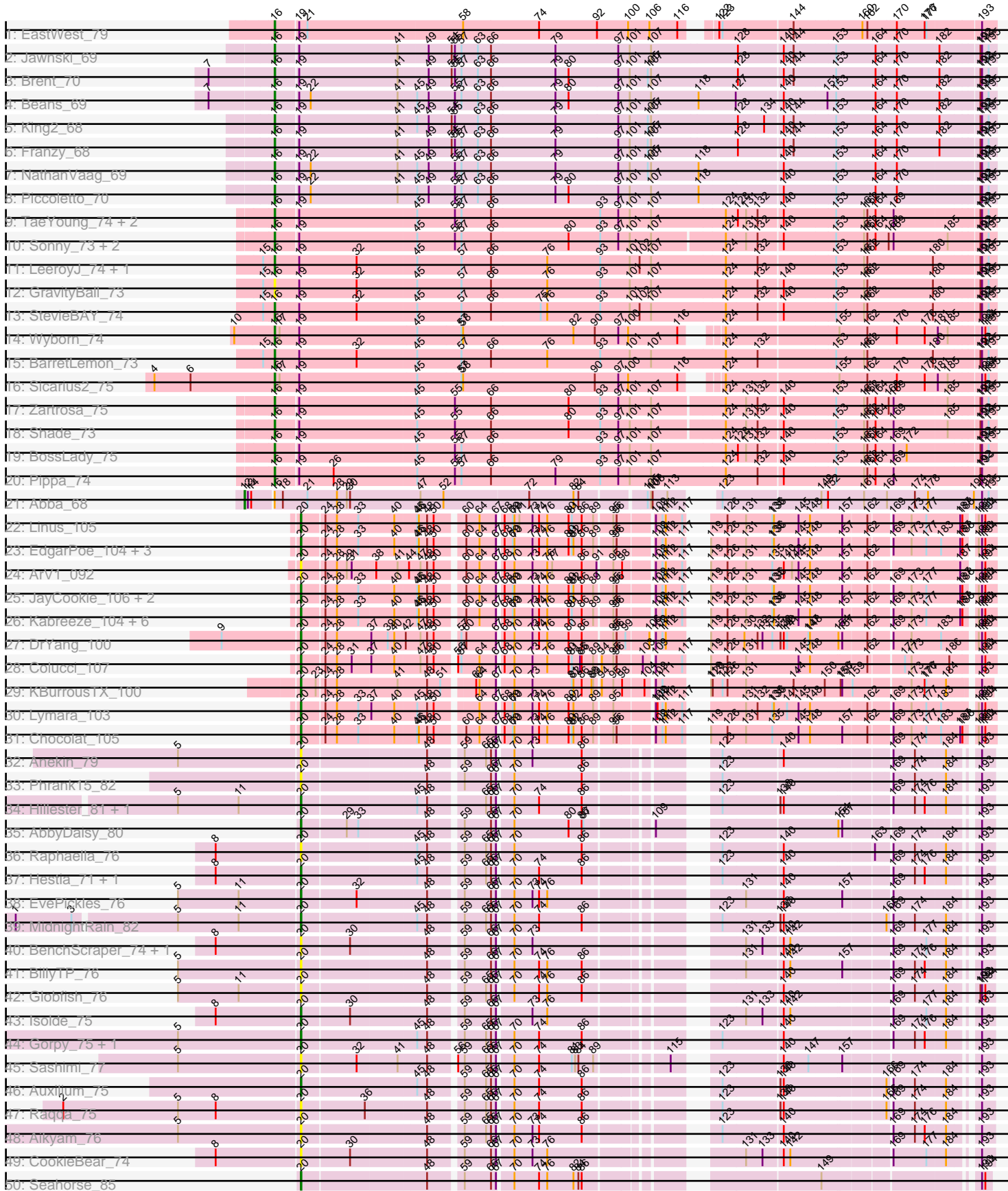
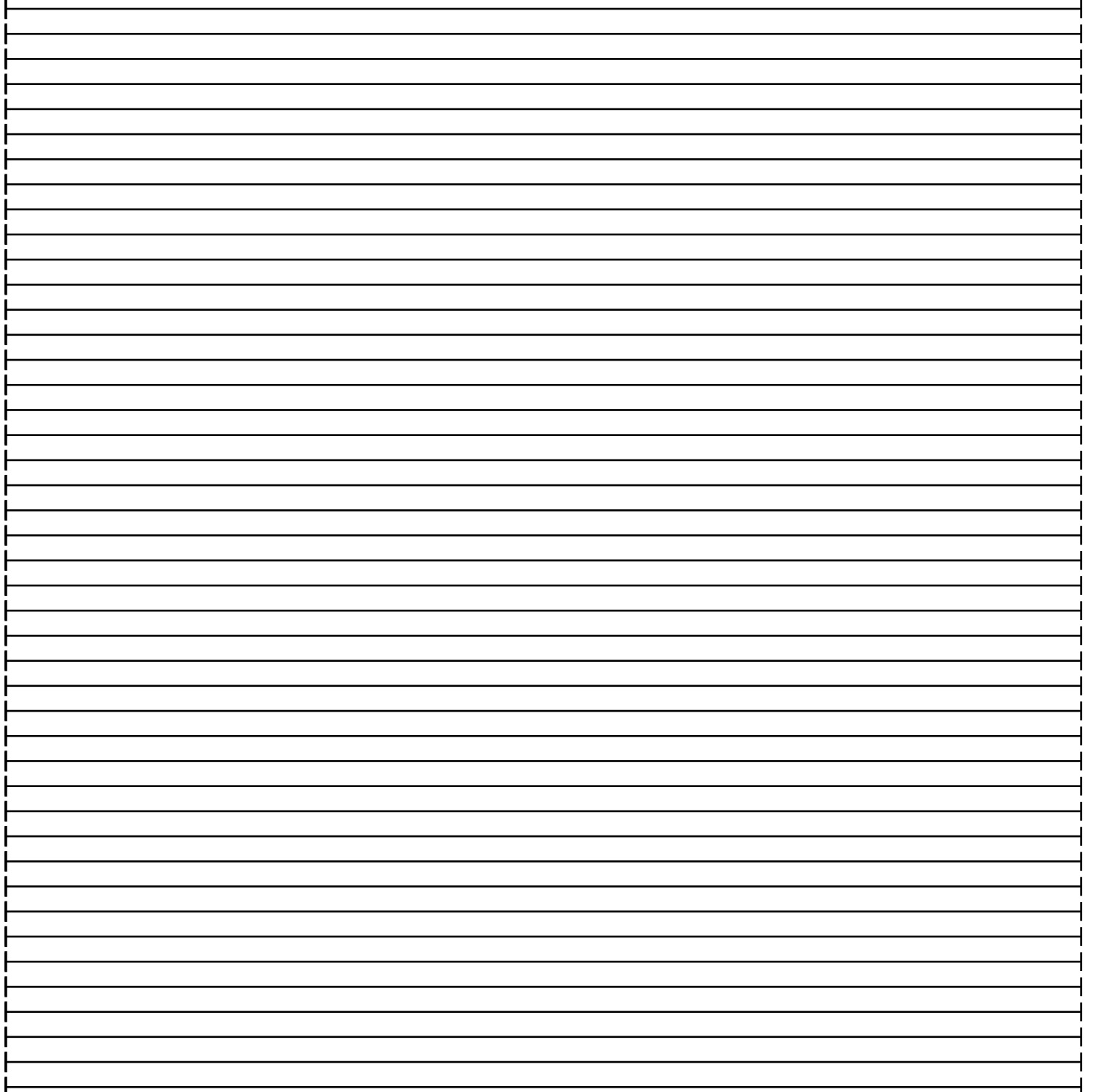
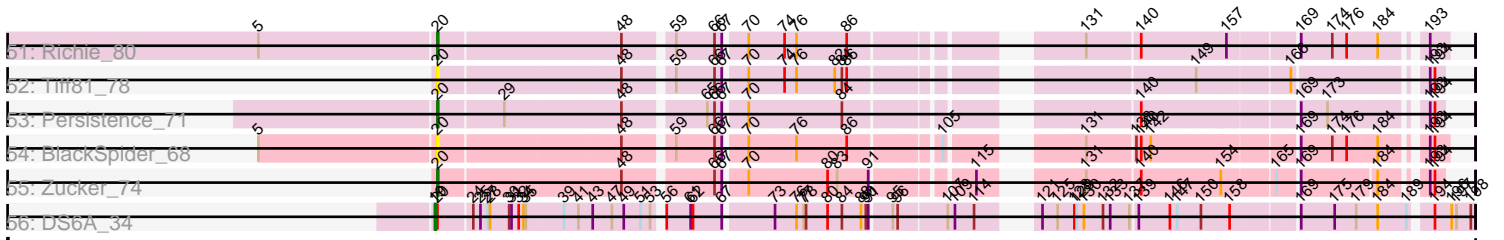


Pham 157821



# Pham 157821



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 157821 Report

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

Pham number 157821 has 76 members, 18 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_79
- Track 2 : Jawnski\_69
- Track 3 : Brent\_70
- Track 4 : Beans\_69
- Track 5 : King2\_68
- Track 6 : Franzy\_68
- Track 7 : NathanVaag\_69
- Track 8 : Piccoletto\_70
- Track 9 : TaeYoung\_74, Grekaycon\_74, Martha\_73
- Track 10 : Sonny\_73, Jordan\_74, JKerns\_73
- Track 11 : LeeroyJ\_74, Timinator\_74
- Track 12 : GravityBall\_73
- Track 13 : StevieBAY\_74
- Track 14 : Wyborn\_74
- Track 15 : BarretLemon\_73
- Track 16 : Sicarius2\_75
- Track 17 : Zartrosa\_75
- Track 18 : Shade\_73
- Track 19 : BossLady\_75
- Track 20 : Pippa\_74
- Track 21 : Abba\_68
- Track 22 : Linus\_105
- Track 23 : EdgarPoe\_104, Chipper1996\_1060, Tophat\_106, Conboy\_104
- Track 24 : ArV1\_092
- Track 25 : JayCookie\_106, MoyaNatalis\_105, RosiePosie\_105
- Track 26 : Kabreeze\_104, Scavito\_105, HumptyDumpty\_104, Chubster\_104, PrincessTrina\_105, JaNo\_103, Mordred\_104
- Track 27 : DrYang\_100
- Track 28 : Colucci\_107
- Track 29 : KBurrousTX\_100
- Track 30 : Lymara\_103
- Track 31 : Chocolat\_105
- Track 32 : Anekin\_79
- Track 33 : Phrank15\_82
- Track 34 : Hillester\_81, RadFad\_82
- Track 35 : AbbyDaisy\_80
- Track 36 : Raphaella\_76

- Track 37 : Hestia\_71, Faja\_80
- Track 38 : EvePickles\_76
- Track 39 : MidnightRain\_82
- Track 40 : BenchScraper\_74, YoungHarleezy\_75
- Track 41 : BillyTP\_76
- Track 42 : Globfish\_76
- Track 43 : Isolde\_75
- Track 44 : Gorpy\_75, Sakai\_74
- Track 45 : Sashimi\_77
- Track 46 : Auxilium\_75
- Track 47 : Raqqa\_75
- Track 48 : Aikyam\_76
- Track 49 : CookieBear\_74
- Track 50 : Seahorse\_85
- Track 51 : Richie\_80
- Track 52 : Tiff81\_78
- Track 53 : Persistence\_71
- Track 54 : BlackSpider\_68
- Track 55 : Zucker\_74
- Track 56 : DS6A\_34

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

The start number called the most often in the published annotations is 20, it was called in 32 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy\_80, Aikyam\_76, Aekin\_79, ArV1\_092, Auxilium\_75, BenchScraper\_74, BillyTP\_76, BlackSpider\_68, Chipper1996\_1060, Chocolat\_105, Chubster\_104, Colucci\_107, Conboy\_104, CookieBear\_74, DrYang\_100, EdgarPoe\_104, EvePickles\_76, Faja\_80, Globfish\_76, Gorpy\_75, Hestia\_71, Hillester\_81, HumptyDumpty\_104, Isolde\_75, JaNo\_103, JayCookie\_106, KBurrousTX\_100, Kabreeze\_104, Linus\_105, Lymara\_103, MidnightRain\_82, Mordred\_104, MoyaNatalis\_105, Persistence\_71, Phrank15\_82, PrincessTrina\_105, RadFad\_82, Raphaella\_76, Raqqa\_75, Richie\_80, RosiePosie\_105, Sakai\_74, Sashimi\_77, Scavito\_105, Seahorse\_85, Tiff81\_78, Tophat\_106, YoungHarleezy\_75, Zucker\_74,

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

- DS6A\_34,

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

- Abba\_68, BarretLemon\_73, Beans\_69, BossLady\_75, Brent\_70, EastWest\_79, Franzy\_68, GravityBall\_73, Grekaycon\_74, JKerns\_73, Jawnski\_69, Jordan\_74, King2\_68, LeeroyJ\_74, Martha\_73, NathanVaag\_69, Piccoletto\_70, Pippa\_74, Shade\_73, Sicarius2\_75, Sonny\_73, StevieBAY\_74, TaeYoung\_74, Timinator\_74, Wyborn\_74, Zartrosa\_75,

**Summary by start number:**

Start 12:

- Found in 1 of 76 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abba\_68 (AO3),

Start 16:

- Found in 26 of 76 ( 34.2% ) of genes in pham
- Manual Annotations of this start: 24 of 58
- Called 96.2% of time when present
- Phage (with cluster) where this start called: BarretLemon\_73 (AO2), Beans\_69 (AO1), BossLady\_75 (AO2), Brent\_70 (AO1), EastWest\_79 (AO), Franzy\_68 (AO1), GravityBall\_73 (AO2), Grekaycon\_74 (AO2), JKerns\_73 (AO2), Jawnski\_69 (AO1), Jordan\_74 (AO2), King2\_68 (AO1), LeeroyJ\_74 (AO2), Martha\_73 (AO2), NathanVaag\_69 (AO1), Piccoletto\_70 (AO1), Pippa\_74 (AO2), Shade\_73 (AO2), Sicarius2\_75 (AO2), Sonny\_73 (AO2), StevieBAY\_74 (AO2), TaeYoung\_74 (AO2), Timinator\_74 (AO2), Wyborn\_74 (AO2), Zartrosa\_75 (AO2),

Start 19:

- Found in 26 of 76 ( 34.2% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 3.8% of time when present
- Phage (with cluster) where this start called: DS6A\_34 (singleton),

Start 20:

- Found in 50 of 76 ( 65.8% ) of genes in pham
- Manual Annotations of this start: 32 of 58
- Called 98.0% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_80 (AY), Aikyam\_76 (AY), Anekin\_79 (AY), ArV1\_092 (AR), Auxilium\_75 (AY), BenchScraper\_74 (AY), BillyTP\_76 (AY), BlackSpider\_68 (FN), Chipper1996\_1060 (AR), Chocolat\_105 (AR), Chubster\_104 (AR), Colucci\_107 (AR), Conboy\_104 (AR), CookieBear\_74 (AY), DrYang\_100 (AR), EdgarPoe\_104 (AR), EvePickles\_76 (AY), Faja\_80 (AY), Globfish\_76 (AY), Gorpy\_75 (AY), Hestia\_71 (AY), Hillester\_81 (AY), HumptyDumpty\_104 (AR), Isolde\_75 (AY), JaNo\_103 (AR), JayCookie\_106 (AR), KBurrousTX\_100 (AR), Kabreeze\_104 (AR), Linus\_105 (AR), Lymara\_103 (AR), MidnightRain\_82 (AY), Mordred\_104 (AR), MoyaNatalis\_105 (AR), Persistence\_71 (AY), Phrank15\_82 (AY), PrincessTrina\_105 (AR), RadFad\_82 (AY), Raphaella\_76 (AY), Raqqa\_75 (AY), Richie\_80 (AY), RosiePosie\_105 (AR), Sakai\_74 (AY), Sashimi\_77 (AY), Scavito\_105 (AR), Seahorse\_85 (AY), Tiff81\_78 (AY), Tophat\_106 (AR), YoungHarleezy\_75 (AY), Zucker\_74 (FN),

### Summary by clusters:

There are 8 clusters represented in this pham: singleton, AO, AR, AO3, AO2, AO1, AY, FN,

Info for manual annotations of cluster AO:

- Start number 16 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 16 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 16 was manually annotated 16 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 12 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 20 was manually annotated 18 times for cluster AR.

Info for manual annotations of cluster AY:

- Start number 20 was manually annotated 13 times for cluster AY.

Info for manual annotations of cluster FN:

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

### ***Gene Information:***

Gene: Abba\_68 Start: 44124, Stop: 42859, Start Num: 12

Candidate Starts for Abba\_68:

(Start: 12 @44124 has 1 MA's), (13, 44118), (14, 44112), (Start: 16 @44076 has 24 MA's), (18, 44064), (21, 44019), (28, 43965), (29, 43950), (30, 43944), (47, 43815), (52, 43773), (72, 43620), (82, 43539), (84, 43530), (105, 43422), (107, 43416), (108, 43413), (113, 43386), (123, 43344), (149, 43170), (152, 43158), (161, 43092), (167, 43050), (174, 42999), (178, 42975), (190, 42897), (193, 42882), (195, 42870),

Gene: AbbyDaisy\_80 Start: 44496, Stop: 45578, Start Num: 20

Candidate Starts for AbbyDaisy\_80:

(Start: 20 @44496 has 32 MA's), (29, 44574), (33, 44595), (48, 44712), (59, 44763), (66, 44811), (67, 44820), (70, 44844), (80, 44940), (86, 44964), (87, 44967), (109, 45069), (154, 45342), (157, 45348), (193, 45555),

Gene: Aikyam\_76 Start: 40908, Stop: 41990, Start Num: 20

Candidate Starts for Aikyam\_76:

(5, 40689), (Start: 20 @40908 has 32 MA's), (48, 41124), (59, 41175), (65, 41214), (66, 41223), (67, 41232), (70, 41256), (73, 41286), (74, 41298), (86, 41376), (123, 41556), (140, 41661), (169, 41835), (174, 41874), (176, 41892), (184, 41928), (193, 41967),

Gene: Anekin\_79 Start: 43480, Stop: 44562, Start Num: 20

Candidate Starts for Anekin\_79:

(5, 43261), (Start: 20 @43480 has 32 MA's), (48, 43696), (59, 43747), (65, 43786), (66, 43795), (67, 43804), (70, 43828), (73, 43858), (86, 43948), (123, 44128), (140, 44233), (169, 44407), (174, 44446), (184, 44500), (193, 44539),

Gene: ArV1\_092 Start: 65759, Stop: 66874, Start Num: 20

Candidate Starts for ArV1\_092:

(Start: 20 @65759 has 32 MA's), (24, 65798), (28, 65819), (29, 65837), (31, 65846), (38, 65888), (41, 65927), (44, 65945), (47, 65963), (48, 65975), (50, 65987), (60, 66029), (64, 66053), (67, 66083), (68, 66089), (70, 66107), (73, 66137), (76, 66164), (77, 66173), (86, 66227), (91, 66254), (95, 66278), (98, 66293), (109, 66341), (111, 66353), (112, 66359), (117, 66389), (119, 66395), (126, 66425), (131, 66458), (135, 66506), (140, 66527), (143, 66542), (145, 66554), (148, 66575), (157, 66626), (162, 66668), (187, 66824), (193, 66848), (194, 66854),

Gene: Auxilium\_75 Start: 40439, Stop: 41521, Start Num: 20

Candidate Starts for Auxilium\_75:

(Start: 20 @40439 has 32 MA's), (45, 40637), (48, 40655), (59, 40706), (65, 40745), (66, 40754), (67, 40763), (70, 40787), (74, 40829), (86, 40907), (123, 41087), (138, 41186), (140, 41192), (166, 41360), (169, 41366), (174, 41405), (184, 41459), (193, 41498),

Gene: BarretLemon\_73 Start: 47845, Stop: 46577, Start Num: 16

Candidate Starts for BarretLemon\_73:

(15, 47863), (Start: 16 @47845 has 24 MA's), (Start: 19 @47806 has 1 MA's), (32, 47701), (45, 47599), (57, 47521), (66, 47467), (76, 47365), (93, 47269), (101, 47215), (107, 47176), (124, 47041), (132, 46984), (153, 46849), (161, 46798), (162, 46792), (180, 46675), (192, 46603), (193, 46600), (195, 46588),

Gene: Beans\_69 Start: 47176, Stop: 45905, Start Num: 16

Candidate Starts for Beans\_69:

(7, 47290), (Start: 16 @47176 has 24 MA's), (Start: 19 @47137 has 1 MA's), (22, 47116), (41, 46960), (45, 46930), (49, 46909), (55, 46864), (57, 46852), (63, 46822), (66, 46798), (79, 46681), (80, 46657), (97, 46567), (101, 46546), (107, 46507), (118, 46420), (127, 46354), (140, 46273), (151, 46195), (153, 46180), (164, 46108), (170, 46072), (182, 45997), (192, 45931), (193, 45928), (195, 45916),

Gene: BenchScraper\_74 Start: 41613, Stop: 42695, Start Num: 20

Candidate Starts for BenchScraper\_74:

(8, 41463), (Start: 20 @41613 has 32 MA's), (30, 41697), (48, 41829), (59, 41880), (66, 41928), (67, 41937), (70, 41961), (73, 41991), (131, 42303), (133, 42333), (140, 42366), (142, 42378), (169, 42540), (177, 42600), (184, 42633), (193, 42672),

Gene: BillyTP\_76 Start: 43432, Stop: 44514, Start Num: 20

Candidate Starts for BillyTP\_76:

(5, 43213), (Start: 20 @43432 has 32 MA's), (48, 43648), (59, 43699), (66, 43747), (67, 43756), (70, 43780), (74, 43822), (76, 43837), (86, 43900), (131, 44122), (140, 44185), (142, 44197), (157, 44284), (169, 44359), (174, 44398), (176, 44416), (184, 44452), (193, 44491),

Gene: BlackSpider\_68 Start: 39998, Stop: 41080, Start Num: 20

Candidate Starts for BlackSpider\_68:

(5, 39779), (Start: 20 @39998 has 32 MA's), (48, 40214), (59, 40265), (66, 40313), (67, 40322), (70, 40346), (76, 40403), (86, 40466), (105, 40565), (131, 40688), (138, 40745), (140, 40751), (142, 40763), (169, 40925), (174, 40964), (176, 40982), (184, 41018), (193, 41057), (194, 41063),

Gene: BossLady\_75 Start: 48370, Stop: 47105, Start Num: 16

Candidate Starts for BossLady\_75:

(Start: 16 @48370 has 24 MA's), (Start: 19 @48334 has 1 MA's), (45, 48127), (55, 48061), (57, 48049), (66, 47995), (93, 47797), (97, 47764), (101, 47743), (107, 47704), (124, 47569), (128, 47548), (131, 47533), (132, 47512), (140, 47470), (153, 47377), (161, 47326), (162, 47320), (164, 47305), (169, 47275), (172, 47251), (192, 47131), (193, 47128), (195, 47116),

Gene: Brent\_70 Start: 47353, Stop: 46082, Start Num: 16

Candidate Starts for Brent\_70:

(7, 47467), (Start: 16 @47353 has 24 MA's), (Start: 19 @47314 has 1 MA's), (41, 47137), (49, 47086), (54, 47044), (55, 47041), (57, 47029), (63, 46999), (66, 46975), (79, 46858), (80, 46834), (97, 46744), (101, 46723), (105, 46690), (107, 46684), (128, 46528), (140, 46450), (144, 46432), (153, 46357), (164, 46285), (170, 46249), (182, 46174), (192, 46108), (193, 46105), (195, 46093),

Gene: Chipper1996\_1060 Start: 66517, Stop: 67632, Start Num: 20

Candidate Starts for Chipper1996\_1060:

(Start: 20 @66517 has 32 MA's), (24, 66556), (28, 66577), (33, 66616), (40, 66679), (45, 66715), (46, 66718), (48, 66733), (50, 66745), (60, 66787), (64, 66811), (67, 66841), (68, 66847), (69, 66862), (70, 66865), (73, 66895), (74, 66907), (76, 66922), (80, 66961), (81, 66967), (82, 66970), (86, 66985), (89, 67006), (95, 67036), (96, 67042), (109, 67099), (111, 67111), (112, 67117), (117, 67147), (119, 67153), (126, 67183), (131, 67216), (135, 67264), (136, 67267), (145, 67312), (148, 67333), (157, 67384), (162, 67426), (169, 67462), (173, 67495), (177, 67522), (183, 67549), (187, 67582), (188, 67585), (191, 67600), (193, 67606), (194, 67612),

Gene: Chocolat\_105 Start: 66228, Stop: 67343, Start Num: 20

Candidate Starts for Chocolat\_105:

(Start: 20 @66228 has 32 MA's), (24, 66267), (28, 66288), (33, 66327), (40, 66390), (45, 66426), (46, 66429), (48, 66444), (50, 66456), (60, 66498), (64, 66522), (67, 66552), (68, 66558), (69, 66573), (70, 66576), (73, 66606), (74, 66618), (76, 66633), (80, 66672), (81, 66678), (82, 66681), (86, 66696), (89, 66717), (95, 66747), (96, 66753), (109, 66810), (111, 66822), (112, 66828), (117, 66858), (119, 66864), (126, 66894), (131, 66927), (135, 66975), (145, 67023), (148, 67044), (157, 67095), (162, 67137), (169, 67173), (173, 67206), (177, 67233), (183, 67260), (187, 67293), (188, 67296), (191, 67311), (193, 67317), (194, 67323),

Gene: Chubster\_104 Start: 66213, Stop: 67328, Start Num: 20

Candidate Starts for Chubster\_104:

(Start: 20 @66213 has 32 MA's), (24, 66252), (28, 66273), (33, 66312), (40, 66375), (45, 66411), (46, 66414), (48, 66429), (50, 66441), (60, 66483), (64, 66507), (67, 66537), (68, 66543), (69, 66558), (70, 66561), (73, 66591), (74, 66603), (76, 66618), (80, 66657), (81, 66663), (86, 66681), (89, 66702), (95, 66732), (96, 66738), (109, 66795), (111, 66807), (112, 66813), (117, 66843), (119, 66849), (126, 66879), (131, 66912), (135, 66960), (136, 66963), (145, 67008), (148, 67029), (157, 67080), (162, 67122), (169, 67158), (173, 67191), (177, 67218), (187, 67278), (188, 67281), (191, 67296), (193, 67302), (194, 67308),

Gene: Colucci\_107 Start: 66656, Stop: 67771, Start Num: 20

Candidate Starts for Colucci\_107:

(Start: 20 @66656 has 32 MA's), (24, 66695), (28, 66716), (31, 66743), (37, 66776), (40, 66818), (47, 66860), (48, 66872), (50, 66884), (56, 66914), (57, 66920), (64, 66950), (67, 66980), (68, 66986), (70, 67004), (73, 67034), (76, 67061), (80, 67100), (81, 67106), (85, 67121), (86, 67124), (89, 67145), (94, 67154), (95, 67175), (96, 67181), (103, 67223), (109, 67238), (117, 67286), (119, 67292), (126, 67322), (131, 67355), (145, 67451), (148, 67472), (162, 67565), (171, 67622), (173, 67634), (186, 67703), (193, 67745), (194, 67751),

Gene: Conboy\_104 Start: 66050, Stop: 67165, Start Num: 20

Candidate Starts for Conboy\_104:

(Start: 20 @66050 has 32 MA's), (24, 66089), (28, 66110), (33, 66149), (40, 66212), (45, 66248), (46, 66251), (48, 66266), (50, 66278), (60, 66320), (64, 66344), (67, 66374), (68, 66380), (69, 66395), (70, 66398), (73, 66428), (74, 66440), (76, 66455), (80, 66494), (81, 66500), (82, 66503), (86, 66518), (89, 66539), (95, 66569), (96, 66575), (109, 66632), (111, 66644), (112, 66650), (117, 66680), (119, 66686), (126, 66716), (131, 66749), (135, 66797), (136, 66800), (145, 66845), (148, 66866), (157, 66917), (162, 66959), (169, 66995), (173, 67028), (177, 67055), (183, 67082), (187, 67115), (188, 67118), (191, 67133), (193, 67139), (194, 67145),

Gene: CookieBear\_74 Start: 42087, Stop: 43169, Start Num: 20

Candidate Starts for CookieBear\_74:

(8, 41937), (Start: 20 @42087 has 32 MA's), (30, 42171), (48, 42303), (59, 42354), (66, 42402), (67, 42411), (70, 42435), (73, 42465), (76, 42492), (131, 42777), (133, 42807), (140, 42840), (142, 42852), (169, 43014), (177, 43074), (184, 43107), (193, 43146),



Gene: DS6A\_34 Start: 28680, Stop: 29831, Start Num: 19

Candidate Starts for DS6A\_34:

(Start: 19 @28680 has 1 MA's), (Start: 20 @28683 has 32 MA's), (24, 28722), (25, 28731), (27, 28740), (28, 28743), (30, 28767), (31, 28770), (32, 28779), (34, 28785), (35, 28788), (39, 28833), (41, 28851), (43, 28866), (47, 28890), (49, 28905), (51, 28926), (53, 28938), (56, 28944), (61, 28974), (62, 28977), (67, 29013), (73, 29067), (76, 29094), (77, 29103), (78, 29106), (80, 29133), (84, 29151), (88, 29175), (90, 29181), (91, 29184), (95, 29208), (96, 29214), (107, 29271), (109, 29277), (114, 29301), (121, 29337), (125, 29355), (128, 29376), (129, 29379), (130, 29388), (132, 29412), (133, 29421), (137, 29445), (139, 29451), (146, 29490), (147, 29499), (150, 29526), (158, 29559), (169, 29631), (175, 29673), (179, 29700), (184, 29727), (189, 29760), (194, 29781), (196, 29802), (197, 29808), (198, 29826),

Gene: DrYang\_100 Start: 65833, Stop: 66951, Start Num: 20

Candidate Starts for DrYang\_100:

(9, 65695), (Start: 20 @65833 has 32 MA's), (24, 65872), (28, 65893), (37, 65956), (39, 65986), (40, 65998), (42, 66016), (47, 66040), (48, 66052), (50, 66064), (57, 66100), (60, 66106), (67, 66160), (68, 66166), (70, 66184), (73, 66214), (74, 66226), (76, 66241), (80, 66280), (86, 66304), (95, 66355), (96, 66361), (99, 66376), (106, 66415), (109, 66418), (111, 66430), (112, 66436), (119, 66472), (126, 66502), (130, 66532), (132, 66556), (133, 66565), (135, 66583), (138, 66598), (140, 66604), (141, 66610), (147, 66649), (148, 66652), (154, 66697), (157, 66703), (162, 66745), (169, 66781), (173, 66814), (183, 66868), (191, 66919), (193, 66925), (194, 66931),

Gene: EastWest\_79 Start: 47327, Stop: 46092, Start Num: 16

Candidate Starts for EastWest\_79:

(Start: 16 @47327 has 24 MA's), (Start: 19 @47291 has 1 MA's), (21, 47276), (58, 46997), (74, 46859), (92, 46754), (100, 46697), (106, 46658), (116, 46607), (122, 46571), (123, 46565), (144, 46442), (160, 46319), (162, 46310), (170, 46259), (176, 46208), (177, 46205), (193, 46115),

Gene: EdgarPoe\_104 Start: 66130, Stop: 67245, Start Num: 20

Candidate Starts for EdgarPoe\_104:

(Start: 20 @66130 has 32 MA's), (24, 66169), (28, 66190), (33, 66229), (40, 66292), (45, 66328), (46, 66331), (48, 66346), (50, 66358), (60, 66400), (64, 66424), (67, 66454), (68, 66460), (69, 66475), (70, 66478), (73, 66508), (74, 66520), (76, 66535), (80, 66574), (81, 66580), (82, 66583), (86, 66598), (89, 66619), (95, 66649), (96, 66655), (109, 66712), (111, 66724), (112, 66730), (117, 66760), (119, 66766), (126, 66796), (131, 66829), (135, 66877), (136, 66880), (145, 66925), (148, 66946), (157, 66997), (162, 67039), (169, 67075), (173, 67108), (177, 67135), (183, 67162), (187, 67195), (188, 67198), (191, 67213), (193, 67219), (194, 67225),

Gene: EvePickles\_76 Start: 43345, Stop: 44427, Start Num: 20

Candidate Starts for EvePickles\_76:

(5, 43126), (11, 43237), (Start: 20 @43345 has 32 MA's), (32, 43441), (48, 43561), (59, 43612), (66, 43660), (67, 43669), (70, 43693), (73, 43723), (74, 43735), (76, 43750), (131, 44035), (140, 44098), (157, 44197), (169, 44272), (193, 44404),

Gene: Faja\_80 Start: 44129, Stop: 45211, Start Num: 20

Candidate Starts for Faja\_80:

(8, 43979), (Start: 20 @44129 has 32 MA's), (45, 44327), (48, 44345), (59, 44396), (65, 44435), (66, 44444), (67, 44453), (70, 44477), (74, 44519), (86, 44597), (123, 44777), (140, 44882), (169, 45056), (174, 45095), (176, 45113), (184, 45149), (193, 45188),

Gene: Franzy\_68 Start: 47435, Stop: 46164, Start Num: 16

Candidate Starts for Franzy\_68:

(Start: 16 @47435 has 24 MA's), (Start: 19 @47396 has 1 MA's), (41, 47219), (49, 47168), (54, 47126), (55, 47123), (57, 47111), (63, 47081), (66, 47057), (79, 46940), (97, 46826), (101, 46805), (105, 46772), (107, 46766), (128, 46610), (140, 46532), (144, 46514), (153, 46439), (164, 46367), (170, 46331), (182, 46256), (192, 46190), (193, 46187), (195, 46175),

Gene: Globfish\_76 Start: 41812, Stop: 42894, Start Num: 20

Candidate Starts for Globfish\_76:

(5, 41593), (11, 41704), (Start: 20 @41812 has 32 MA's), (48, 42028), (59, 42079), (65, 42118), (66, 42127), (67, 42136), (70, 42160), (74, 42202), (76, 42217), (86, 42280), (140, 42565), (169, 42739), (174, 42778), (184, 42832), (192, 42868), (193, 42871), (194, 42877),

Gene: Gorpy\_75 Start: 43328, Stop: 44410, Start Num: 20

Candidate Starts for Gorpy\_75:

(5, 43109), (Start: 20 @43328 has 32 MA's), (45, 43526), (48, 43544), (59, 43595), (65, 43634), (66, 43643), (67, 43652), (70, 43676), (74, 43718), (86, 43796), (123, 43976), (140, 44081), (169, 44255), (174, 44294), (176, 44312), (184, 44348), (193, 44387),

Gene: GravityBall\_73 Start: 48036, Stop: 46768, Start Num: 16

Candidate Starts for GravityBall\_73:

(15, 48054), (Start: 16 @48036 has 24 MA's), (Start: 19 @47997 has 1 MA's), (32, 47892), (45, 47790), (57, 47712), (66, 47658), (76, 47556), (93, 47460), (101, 47406), (107, 47367), (124, 47232), (132, 47175), (140, 47133), (153, 47040), (161, 46989), (162, 46983), (180, 46866), (192, 46794), (193, 46791), (195, 46779),

Gene: Grekaycon\_74 Start: 48283, Stop: 47018, Start Num: 16

Candidate Starts for Grekaycon\_74:

(Start: 16 @48283 has 24 MA's), (Start: 19 @48247 has 1 MA's), (45, 48040), (55, 47974), (57, 47962), (66, 47908), (93, 47710), (97, 47677), (101, 47656), (107, 47617), (124, 47482), (128, 47461), (131, 47446), (132, 47425), (140, 47383), (153, 47290), (161, 47239), (162, 47233), (164, 47218), (169, 47188), (192, 47044), (193, 47041), (195, 47029),

Gene: Hestia\_71 Start: 40352, Stop: 41434, Start Num: 20

Candidate Starts for Hestia\_71:

(8, 40202), (Start: 20 @40352 has 32 MA's), (45, 40550), (48, 40568), (59, 40619), (65, 40658), (66, 40667), (67, 40676), (70, 40700), (74, 40742), (86, 40820), (123, 41000), (140, 41105), (169, 41279), (174, 41318), (176, 41336), (184, 41372), (193, 41411),

Gene: Hillester\_81 Start: 43361, Stop: 44443, Start Num: 20

Candidate Starts for Hillester\_81:

(5, 43142), (11, 43253), (Start: 20 @43361 has 32 MA's), (45, 43559), (48, 43577), (65, 43667), (66, 43676), (67, 43685), (70, 43709), (74, 43751), (86, 43829), (123, 44009), (138, 44108), (140, 44114), (169, 44288), (174, 44327), (176, 44345), (184, 44381), (193, 44420),

Gene: HumptyDumpty\_104 Start: 65933, Stop: 67048, Start Num: 20

Candidate Starts for HumptyDumpty\_104:

(Start: 20 @65933 has 32 MA's), (24, 65972), (28, 65993), (33, 66032), (40, 66095), (45, 66131), (46, 66134), (48, 66149), (50, 66161), (60, 66203), (64, 66227), (67, 66257), (68, 66263), (69, 66278), (70, 66281), (73, 66311), (74, 66323), (76, 66338), (80, 66377), (81, 66383), (86, 66401), (89, 66422), (95, 66452), (96, 66458), (109, 66515), (111, 66527), (112, 66533), (117, 66563), (119, 66569), (126, 66599), (131, 66632), (135, 66680), (136, 66683), (145, 66728), (148, 66749), (157, 66800), (162, 66842), (169, 66878), (173, 66911), (177, 66938), (187, 66998), (188, 67001), (191, 67016), (193, 67022), (194, 67028),

Gene: Isolde\_75 Start: 42198, Stop: 43280, Start Num: 20

Candidate Starts for Isolde\_75:

(8, 42048), (Start: 20 @42198 has 32 MA's), (30, 42282), (48, 42414), (59, 42465), (66, 42513), (67, 42522), (73, 42576), (76, 42603), (131, 42888), (133, 42918), (140, 42951), (142, 42963), (169, 43125), (177, 43185), (184, 43218), (193, 43257),

Gene: JKerns\_73 Start: 48266, Stop: 47010, Start Num: 16

Candidate Starts for JKerns\_73:

(Start: 16 @48266 has 24 MA's), (Start: 19 @48230 has 1 MA's), (45, 48023), (55, 47957), (57, 47945), (66, 47891), (80, 47750), (93, 47693), (97, 47660), (101, 47639), (107, 47600), (124, 47474), (131, 47438), (132, 47417), (140, 47375), (153, 47282), (161, 47231), (162, 47225), (164, 47210), (168, 47186), (169, 47180), (185, 47084), (192, 47036), (193, 47033), (195, 47021),

Gene: JaNo\_103 Start: 65904, Stop: 67019, Start Num: 20

Candidate Starts for JaNo\_103:

(Start: 20 @65904 has 32 MA's), (24, 65943), (28, 65964), (33, 66003), (40, 66066), (45, 66102), (46, 66105), (48, 66120), (50, 66132), (60, 66174), (64, 66198), (67, 66228), (68, 66234), (69, 66249), (70, 66252), (73, 66282), (74, 66294), (76, 66309), (80, 66348), (81, 66354), (86, 66372), (89, 66393), (95, 66423), (96, 66429), (109, 66486), (111, 66498), (112, 66504), (117, 66534), (119, 66540), (126, 66570), (131, 66603), (135, 66651), (136, 66654), (145, 66699), (148, 66720), (157, 66771), (162, 66813), (169, 66849), (173, 66882), (177, 66909), (187, 66969), (188, 66972), (191, 66987), (193, 66993), (194, 66999),

Gene: Jawnski\_69 Start: 46878, Stop: 45607, Start Num: 16

Candidate Starts for Jawnski\_69:

(Start: 16 @46878 has 24 MA's), (Start: 19 @46839 has 1 MA's), (41, 46662), (49, 46611), (54, 46569), (55, 46566), (57, 46554), (63, 46524), (66, 46500), (79, 46383), (97, 46269), (101, 46248), (107, 46209), (128, 46053), (140, 45975), (144, 45957), (153, 45882), (164, 45810), (170, 45774), (182, 45699), (192, 45633), (193, 45630), (195, 45618),

Gene: JayCookie\_106 Start: 66789, Stop: 67904, Start Num: 20

Candidate Starts for JayCookie\_106:

(Start: 20 @66789 has 32 MA's), (24, 66828), (28, 66849), (33, 66888), (40, 66951), (45, 66987), (46, 66990), (48, 67005), (50, 67017), (60, 67059), (64, 67083), (67, 67113), (68, 67119), (69, 67134), (70, 67137), (73, 67167), (74, 67179), (76, 67194), (80, 67233), (81, 67239), (82, 67242), (86, 67257), (89, 67278), (95, 67308), (96, 67314), (109, 67371), (111, 67383), (112, 67389), (117, 67419), (119, 67425), (126, 67455), (131, 67488), (135, 67536), (136, 67539), (145, 67584), (148, 67605), (157, 67656), (162, 67698), (169, 67734), (173, 67767), (177, 67794), (187, 67854), (188, 67857), (191, 67872), (193, 67878), (194, 67884),

Gene: Jordan\_74 Start: 48424, Stop: 47168, Start Num: 16

Candidate Starts for Jordan\_74:

(Start: 16 @48424 has 24 MA's), (Start: 19 @48388 has 1 MA's), (45, 48181), (55, 48115), (57, 48103), (66, 48049), (80, 47908), (93, 47851), (97, 47818), (101, 47797), (107, 47758), (124, 47632), (131, 47596), (132, 47575), (140, 47533), (153, 47440), (161, 47389), (162, 47383), (164, 47368), (168, 47344), (169, 47338), (185, 47242), (192, 47194), (193, 47191), (195, 47179),

Gene: KBurrousTX\_100 Start: 67009, Stop: 68115, Start Num: 20

Candidate Starts for KBurrousTX\_100:

(Start: 20 @67009 has 32 MA's), (23, 67036), (24, 67048), (28, 67069), (41, 67177), (48, 67225), (51, 67249), (62, 67297), (64, 67303), (67, 67333), (70, 67357), (73, 67387), (81, 67459), (82, 67462), (86, 67477), (88, 67495), (89, 67498), (94, 67507), (95, 67528), (98, 67543), (104, 67579), (109, 67591), (111, 67603), (119, 67645), (120, 67648), (123, 67666), (126, 67675), (131, 67708), (144, 67795),

(150, 67849), (156, 67873), (157, 67876), (159, 67891), (173, 67987), (176, 68011), (177, 68014), (184, 68050), (193, 68095),

Gene: Kabreeze\_104 Start: 65990, Stop: 67105, Start Num: 20

Candidate Starts for Kabreeze\_104:

(Start: 20 @65990 has 32 MA's), (24, 66029), (28, 66050), (33, 66089), (40, 66152), (45, 66188), (46, 66191), (48, 66206), (50, 66218), (60, 66260), (64, 66284), (67, 66314), (68, 66320), (69, 66335), (70, 66338), (73, 66368), (74, 66380), (76, 66395), (80, 66434), (81, 66440), (86, 66458), (89, 66479), (95, 66509), (96, 66515), (109, 66572), (111, 66584), (112, 66590), (117, 66620), (119, 66626), (126, 66656), (131, 66689), (135, 66737), (136, 66740), (145, 66785), (148, 66806), (157, 66857), (162, 66899), (169, 66935), (173, 66968), (177, 66995), (187, 67055), (188, 67058), (191, 67073), (193, 67079), (194, 67085),

Gene: King2\_68 Start: 47406, Stop: 46135, Start Num: 16

Candidate Starts for King2\_68:

(Start: 16 @47406 has 24 MA's), (Start: 19 @47367 has 1 MA's), (41, 47190), (45, 47160), (49, 47139), (54, 47097), (55, 47094), (63, 47052), (66, 47028), (79, 46911), (97, 46797), (101, 46776), (105, 46743), (107, 46737), (128, 46581), (134, 46533), (140, 46503), (144, 46485), (153, 46410), (164, 46338), (170, 46302), (182, 46227), (192, 46161), (193, 46158), (195, 46146),

Gene: LeeroyJ\_74 Start: 47962, Stop: 46694, Start Num: 16

Candidate Starts for LeeroyJ\_74:

(15, 47980), (Start: 16 @47962 has 24 MA's), (Start: 19 @47923 has 1 MA's), (32, 47818), (45, 47716), (57, 47638), (66, 47584), (76, 47482), (93, 47386), (101, 47332), (102, 47314), (107, 47293), (124, 47158), (132, 47101), (153, 46966), (161, 46915), (162, 46909), (180, 46792), (192, 46720), (193, 46717), (195, 46705),

Gene: Linus\_105 Start: 66438, Stop: 67553, Start Num: 20

Candidate Starts for Linus\_105:

(Start: 20 @66438 has 32 MA's), (24, 66477), (28, 66498), (33, 66537), (40, 66600), (45, 66636), (46, 66639), (48, 66654), (50, 66666), (60, 66708), (64, 66732), (67, 66762), (68, 66768), (69, 66783), (70, 66786), (71, 66795), (73, 66816), (74, 66828), (76, 66843), (80, 66882), (81, 66888), (86, 66906), (89, 66927), (95, 66957), (96, 66963), (109, 67020), (111, 67032), (112, 67038), (117, 67068), (126, 67104), (131, 67137), (135, 67185), (136, 67188), (145, 67233), (148, 67254), (157, 67305), (162, 67347), (169, 67383), (173, 67416), (177, 67443), (187, 67503), (188, 67506), (191, 67521), (193, 67527), (194, 67533),

Gene: Lymara\_103 Start: 65180, Stop: 66295, Start Num: 20

Candidate Starts for Lymara\_103:

(Start: 20 @65180 has 32 MA's), (24, 65219), (28, 65240), (33, 65279), (37, 65300), (40, 65342), (45, 65378), (48, 65396), (50, 65408), (64, 65474), (67, 65504), (68, 65510), (69, 65525), (70, 65528), (73, 65558), (74, 65570), (76, 65585), (80, 65624), (82, 65633), (89, 65669), (95, 65699), (109, 65762), (110, 65765), (111, 65774), (112, 65780), (117, 65810), (131, 65879), (132, 65900), (135, 65927), (136, 65930), (141, 65954), (145, 65975), (148, 65996), (162, 66089), (169, 66125), (173, 66158), (177, 66185), (183, 66212), (191, 66263), (193, 66269), (194, 66275),

Gene: Martha\_73 Start: 48219, Stop: 46954, Start Num: 16

Candidate Starts for Martha\_73:

(Start: 16 @48219 has 24 MA's), (Start: 19 @48183 has 1 MA's), (45, 47976), (55, 47910), (57, 47898), (66, 47844), (93, 47646), (97, 47613), (101, 47592), (107, 47553), (124, 47418), (128, 47397), (131, 47382), (132, 47361), (140, 47319), (153, 47226), (161, 47175), (162, 47169), (164, 47154), (169, 47124), (192, 46980), (193, 46977), (195, 46965),

Gene: MidnightRain\_82 Start: 43656, Stop: 44738, Start Num: 20

Candidate Starts for MidnightRain\_82:

(1, 43155), (3, 43257), (5, 43437), (11, 43548), (Start: 20 @43656 has 32 MA's), (45, 43854), (48, 43872), (59, 43923), (65, 43962), (66, 43971), (67, 43980), (70, 44004), (74, 44046), (86, 44124), (123, 44304), (138, 44403), (140, 44409), (166, 44577), (169, 44583), (174, 44622), (184, 44676), (193, 44715),

Gene: Mordred\_104 Start: 66029, Stop: 67144, Start Num: 20

Candidate Starts for Mordred\_104:

(Start: 20 @66029 has 32 MA's), (24, 66068), (28, 66089), (33, 66128), (40, 66191), (45, 66227), (46, 66230), (48, 66245), (50, 66257), (60, 66299), (64, 66323), (67, 66353), (68, 66359), (69, 66374), (70, 66377), (73, 66407), (74, 66419), (76, 66434), (80, 66473), (81, 66479), (86, 66497), (89, 66518), (95, 66548), (96, 66554), (109, 66611), (111, 66623), (112, 66629), (117, 66659), (119, 66665), (126, 66695), (131, 66728), (135, 66776), (136, 66779), (145, 66824), (148, 66845), (157, 66896), (162, 66938), (169, 66974), (173, 67007), (177, 67034), (187, 67094), (188, 67097), (191, 67112), (193, 67118), (194, 67124),

Gene: MoyaNatalis\_105 Start: 66235, Stop: 67350, Start Num: 20

Candidate Starts for MoyaNatalis\_105:

(Start: 20 @66235 has 32 MA's), (24, 66274), (28, 66295), (33, 66334), (40, 66397), (45, 66433), (46, 66436), (48, 66451), (50, 66463), (60, 66505), (64, 66529), (67, 66559), (68, 66565), (69, 66580), (70, 66583), (73, 66613), (74, 66625), (76, 66640), (80, 66679), (81, 66685), (82, 66688), (86, 66703), (89, 66724), (95, 66754), (96, 66760), (109, 66817), (111, 66829), (112, 66835), (117, 66865), (119, 66871), (126, 66901), (131, 66934), (135, 66982), (136, 66985), (145, 67030), (148, 67051), (157, 67102), (162, 67144), (169, 67180), (173, 67213), (177, 67240), (187, 67300), (188, 67303), (191, 67318), (193, 67324), (194, 67330),

Gene: NathanVaag\_69 Start: 47108, Stop: 45837, Start Num: 16

Candidate Starts for NathanVaag\_69:

(Start: 16 @47108 has 24 MA's), (Start: 19 @47069 has 1 MA's), (22, 47048), (41, 46892), (45, 46862), (49, 46841), (55, 46796), (57, 46784), (63, 46754), (66, 46730), (79, 46613), (97, 46499), (101, 46478), (105, 46445), (107, 46439), (118, 46352), (140, 46205), (153, 46112), (164, 46040), (170, 46004), (192, 45863), (193, 45860), (195, 45848),

Gene: Persistence\_71 Start: 40729, Stop: 41805, Start Num: 20

Candidate Starts for Persistence\_71:

(Start: 20 @40729 has 32 MA's), (29, 40807), (48, 40945), (65, 41035), (66, 41044), (67, 41053), (70, 41077), (84, 41191), (140, 41482), (169, 41656), (173, 41689), (193, 41788), (194, 41794),

Gene: Phrank15\_82 Start: 43167, Stop: 44249, Start Num: 20

Candidate Starts for Phrank15\_82:

(Start: 20 @43167 has 32 MA's), (48, 43383), (59, 43434), (66, 43482), (67, 43491), (70, 43515), (86, 43635), (123, 43815), (169, 44094), (174, 44133), (184, 44187), (193, 44226),

Gene: Piccoletto\_70 Start: 47270, Stop: 45999, Start Num: 16

Candidate Starts for Piccoletto\_70:

(Start: 16 @47270 has 24 MA's), (Start: 19 @47231 has 1 MA's), (22, 47210), (41, 47054), (45, 47024), (49, 47003), (55, 46958), (57, 46946), (63, 46916), (66, 46892), (79, 46775), (80, 46751), (97, 46661), (101, 46640), (107, 46601), (118, 46514), (140, 46367), (153, 46274), (164, 46202), (170, 46166), (192, 46025), (193, 46022), (195, 46010),

Gene: Pippa\_74 Start: 48274, Stop: 47006, Start Num: 16

Candidate Starts for Pippa\_74:

(Start: 16 @48274 has 24 MA's), (Start: 19 @48238 has 1 MA's), (26, 48175), (45, 48031), (55, 47965), (57, 47953), (66, 47899), (79, 47782), (93, 47701), (97, 47668), (101, 47647), (107, 47608), (124, 47473), (132, 47416), (140, 47374), (153, 47281), (161, 47230), (162, 47224), (164, 47209), (169, 47179), (192, 47035), (193, 47032),

Gene: PrincessTrina\_105 Start: 66220, Stop: 67335, Start Num: 20

Candidate Starts for PrincessTrina\_105:

(Start: 20 @66220 has 32 MA's), (24, 66259), (28, 66280), (33, 66319), (40, 66382), (45, 66418), (46, 66421), (48, 66436), (50, 66448), (60, 66490), (64, 66514), (67, 66544), (68, 66550), (69, 66565), (70, 66568), (73, 66598), (74, 66610), (76, 66625), (80, 66664), (81, 66670), (86, 66688), (89, 66709), (95, 66739), (96, 66745), (109, 66802), (111, 66814), (112, 66820), (117, 66850), (119, 66856), (126, 66886), (131, 66919), (135, 66967), (136, 66970), (145, 67015), (148, 67036), (157, 67087), (162, 67129), (169, 67165), (173, 67198), (177, 67225), (187, 67285), (188, 67288), (191, 67303), (193, 67309), (194, 67315),

Gene: RadFad\_82 Start: 43361, Stop: 44443, Start Num: 20

Candidate Starts for RadFad\_82:

(5, 43142), (11, 43253), (Start: 20 @43361 has 32 MA's), (45, 43559), (48, 43577), (65, 43667), (66, 43676), (67, 43685), (70, 43709), (74, 43751), (86, 43829), (123, 44009), (138, 44108), (140, 44114), (169, 44288), (174, 44327), (176, 44345), (184, 44381), (193, 44420),

Gene: Raphaella\_76 Start: 42144, Stop: 43226, Start Num: 20

Candidate Starts for Raphaella\_76:

(8, 41994), (Start: 20 @42144 has 32 MA's), (45, 42342), (48, 42360), (59, 42411), (65, 42450), (66, 42459), (67, 42468), (70, 42492), (86, 42612), (123, 42792), (140, 42897), (163, 43047), (169, 43071), (174, 43110), (184, 43164), (193, 43203),

Gene: Raqqa\_75 Start: 42837, Stop: 43919, Start Num: 20

Candidate Starts for Raqqa\_75:

(2, 42408), (5, 42618), (8, 42687), (Start: 20 @42837 has 32 MA's), (36, 42948), (48, 43053), (59, 43104), (65, 43143), (66, 43152), (67, 43161), (70, 43185), (74, 43227), (86, 43305), (123, 43485), (138, 43584), (140, 43590), (166, 43758), (169, 43764), (174, 43803), (184, 43857), (193, 43896),

Gene: Richie\_80 Start: 44012, Stop: 45094, Start Num: 20

Candidate Starts for Richie\_80:

(5, 43793), (Start: 20 @44012 has 32 MA's), (48, 44228), (59, 44279), (66, 44327), (67, 44336), (70, 44360), (74, 44402), (76, 44417), (86, 44480), (131, 44702), (140, 44765), (157, 44864), (169, 44939), (174, 44978), (176, 44996), (184, 45032), (193, 45071),

Gene: RosiePosie\_105 Start: 66351, Stop: 67466, Start Num: 20

Candidate Starts for RosiePosie\_105:

(Start: 20 @66351 has 32 MA's), (24, 66390), (28, 66411), (33, 66450), (40, 66513), (45, 66549), (46, 66552), (48, 66567), (50, 66579), (60, 66621), (64, 66645), (67, 66675), (68, 66681), (69, 66696), (70, 66699), (73, 66729), (74, 66741), (76, 66756), (80, 66795), (81, 66801), (82, 66804), (86, 66819), (89, 66840), (95, 66870), (96, 66876), (109, 66933), (111, 66945), (112, 66951), (117, 66981), (119, 66987), (126, 67017), (131, 67050), (135, 67098), (136, 67101), (145, 67146), (148, 67167), (157, 67218), (162, 67260), (169, 67296), (173, 67329), (177, 67356), (187, 67416), (188, 67419), (191, 67434), (193, 67440), (194, 67446),

Gene: Sakai\_74 Start: 42039, Stop: 43121, Start Num: 20

Candidate Starts for Sakai\_74:

(5, 41820), (Start: 20 @42039 has 32 MA's), (45, 42237), (48, 42255), (59, 42306), (65, 42345), (66, 42354), (67, 42363), (70, 42387), (74, 42429), (86, 42507), (123, 42687), (140, 42792), (169, 42966),

(174, 43005), (176, 43023), (184, 43059), (193, 43098),

Gene: Sashimi\_77 Start: 42712, Stop: 43794, Start Num: 20

Candidate Starts for Sashimi\_77:

(5, 42493), (Start: 20 @42712 has 32 MA's), (32, 42808), (41, 42880), (48, 42928), (56, 42967), (59, 42979), (65, 43018), (66, 43027), (67, 43036), (70, 43060), (74, 43102), (81, 43162), (83, 43168), (84, 43174), (89, 43201), (115, 43312), (140, 43465), (147, 43510), (157, 43564), (193, 43771),

Gene: Scavito\_105 Start: 66078, Stop: 67193, Start Num: 20

Candidate Starts for Scavito\_105:

(Start: 20 @66078 has 32 MA's), (24, 66117), (28, 66138), (33, 66177), (40, 66240), (45, 66276), (46, 66279), (48, 66294), (50, 66306), (60, 66348), (64, 66372), (67, 66402), (68, 66408), (69, 66423), (70, 66426), (73, 66456), (74, 66468), (76, 66483), (80, 66522), (81, 66528), (86, 66546), (89, 66567), (95, 66597), (96, 66603), (109, 66660), (111, 66672), (112, 66678), (117, 66708), (119, 66714), (126, 66744), (131, 66777), (135, 66825), (136, 66828), (145, 66873), (148, 66894), (157, 66945), (162, 66987), (169, 67023), (173, 67056), (177, 67083), (187, 67143), (188, 67146), (191, 67161), (193, 67167), (194, 67173),

Gene: Seahorse\_85 Start: 47706, Stop: 48782, Start Num: 20

Candidate Starts for Seahorse\_85:

(Start: 20 @47706 has 32 MA's), (48, 47922), (59, 47973), (66, 48021), (67, 48030), (70, 48054), (74, 48096), (76, 48111), (82, 48159), (84, 48168), (86, 48174), (149, 48525), (193, 48765), (194, 48771),

Gene: Shade\_73 Start: 48030, Stop: 46774, Start Num: 16

Candidate Starts for Shade\_73:

(Start: 16 @48030 has 24 MA's), (Start: 19 @47994 has 1 MA's), (45, 47787), (55, 47721), (66, 47655), (80, 47514), (93, 47457), (97, 47424), (101, 47403), (107, 47364), (124, 47238), (131, 47202), (132, 47181), (140, 47139), (153, 47046), (161, 46995), (162, 46989), (164, 46974), (169, 46944), (185, 46848), (192, 46800), (193, 46797), (195, 46785),

Gene: Sicarius2\_75 Start: 46185, Stop: 44965, Start Num: 16

Candidate Starts for Sicarius2\_75:

(4, 46404), (6, 46338), (Start: 16 @46185 has 24 MA's), (17, 46179), (Start: 19 @46143 has 1 MA's), (45, 45936), (57, 45858), (58, 45855), (90, 45615), (97, 45573), (100, 45555), (116, 45465), (124, 45429), (155, 45231), (162, 45180), (170, 45129), (176, 45078), (181, 45057), (185, 45042), (193, 44988), (194, 44982), (195, 44976),

Gene: Sonny\_73 Start: 47985, Stop: 46729, Start Num: 16

Candidate Starts for Sonny\_73:

(Start: 16 @47985 has 24 MA's), (Start: 19 @47949 has 1 MA's), (45, 47742), (55, 47676), (57, 47664), (66, 47610), (80, 47469), (93, 47412), (97, 47379), (101, 47358), (107, 47319), (124, 47193), (131, 47157), (132, 47136), (140, 47094), (153, 47001), (161, 46950), (162, 46944), (164, 46929), (168, 46905), (169, 46899), (185, 46803), (192, 46755), (193, 46752), (195, 46740),

Gene: StevieBAY\_74 Start: 48255, Stop: 46987, Start Num: 16

Candidate Starts for StevieBAY\_74:

(15, 48273), (Start: 16 @48255 has 24 MA's), (Start: 19 @48216 has 1 MA's), (32, 48111), (45, 48009), (57, 47931), (66, 47877), (75, 47787), (76, 47775), (93, 47679), (101, 47625), (102, 47607), (107, 47586), (124, 47451), (132, 47394), (140, 47352), (153, 47259), (161, 47208), (162, 47202), (180, 47085), (192, 47013), (193, 47010), (195, 46998),

Gene: TaeYoung\_74 Start: 48191, Stop: 46926, Start Num: 16

Candidate Starts for TaeYoung\_74:

(Start: 16 @48191 has 24 MA's), (Start: 19 @48155 has 1 MA's), (45, 47948), (55, 47882), (57, 47870), (66, 47816), (93, 47618), (97, 47585), (101, 47564), (107, 47525), (124, 47390), (128, 47369), (131, 47354), (132, 47333), (140, 47291), (153, 47198), (161, 47147), (162, 47141), (164, 47126), (169, 47096), (192, 46952), (193, 46949), (195, 46937),

Gene: Tiff81\_78 Start: 41323, Stop: 42399, Start Num: 20

Candidate Starts for Tiff81\_78:

(Start: 20 @41323 has 32 MA's), (48, 41539), (59, 41590), (66, 41638), (67, 41647), (70, 41671), (74, 41713), (76, 41728), (82, 41776), (84, 41785), (86, 41791), (149, 42142), (166, 42244), (193, 42382), (194, 42388),

Gene: Timinator\_74 Start: 48075, Stop: 46807, Start Num: 16

Candidate Starts for Timinator\_74:

(15, 48093), (Start: 16 @48075 has 24 MA's), (Start: 19 @48036 has 1 MA's), (32, 47931), (45, 47829), (57, 47751), (66, 47697), (76, 47595), (93, 47499), (101, 47445), (102, 47427), (107, 47406), (124, 47271), (132, 47214), (153, 47079), (161, 47028), (162, 47022), (180, 46905), (192, 46833), (193, 46830), (195, 46818),

Gene: Tophat\_106 Start: 66518, Stop: 67633, Start Num: 20

Candidate Starts for Tophat\_106:

(Start: 20 @66518 has 32 MA's), (24, 66557), (28, 66578), (33, 66617), (40, 66680), (45, 66716), (46, 66719), (48, 66734), (50, 66746), (60, 66788), (64, 66812), (67, 66842), (68, 66848), (69, 66863), (70, 66866), (73, 66896), (74, 66908), (76, 66923), (80, 66962), (81, 66968), (82, 66971), (86, 66986), (89, 67007), (95, 67037), (96, 67043), (109, 67100), (111, 67112), (112, 67118), (117, 67148), (119, 67154), (126, 67184), (131, 67217), (135, 67265), (136, 67268), (145, 67313), (148, 67334), (157, 67385), (162, 67427), (169, 67463), (173, 67496), (177, 67523), (183, 67550), (187, 67583), (188, 67586), (191, 67601), (193, 67607), (194, 67613),

Gene: Wyborn\_74 Start: 46920, Stop: 45700, Start Num: 16

Candidate Starts for Wyborn\_74:

(10, 46992), (Start: 16 @46920 has 24 MA's), (17, 46914), (Start: 19 @46878 has 1 MA's), (45, 46671), (57, 46593), (58, 46590), (82, 46389), (90, 46350), (97, 46308), (100, 46290), (116, 46200), (124, 46164), (155, 45966), (162, 45915), (170, 45864), (176, 45813), (181, 45792), (185, 45777), (193, 45723), (194, 45717), (195, 45711),

Gene: YoungHarleezy\_75 Start: 42414, Stop: 43496, Start Num: 20

Candidate Starts for YoungHarleezy\_75:

(8, 42264), (Start: 20 @42414 has 32 MA's), (30, 42498), (48, 42630), (59, 42681), (66, 42729), (67, 42738), (70, 42762), (73, 42792), (131, 43104), (133, 43134), (140, 43167), (142, 43179), (169, 43341), (177, 43401), (184, 43434), (193, 43473),

Gene: Zartrosa\_75 Start: 48282, Stop: 47026, Start Num: 16

Candidate Starts for Zartrosa\_75:

(Start: 16 @48282 has 24 MA's), (Start: 19 @48246 has 1 MA's), (45, 48039), (55, 47973), (66, 47907), (80, 47766), (93, 47709), (97, 47676), (101, 47655), (107, 47616), (124, 47490), (131, 47454), (132, 47433), (140, 47391), (153, 47298), (161, 47247), (162, 47241), (164, 47226), (168, 47202), (169, 47196), (185, 47100), (192, 47052), (193, 47049), (195, 47037),

Gene: Zucker\_74 Start: 43490, Stop: 44560, Start Num: 20

Candidate Starts for Zucker\_74:

(Start: 20 @43490 has 32 MA's), (48, 43706), (66, 43805), (67, 43814), (70, 43838), (80, 43934), (83, 43946), (91, 43985), (115, 44090), (131, 44180), (140, 44243), (154, 44336), (165, 44396), (169, 44417), (184, 44504), (193, 44543), (194, 44549),



