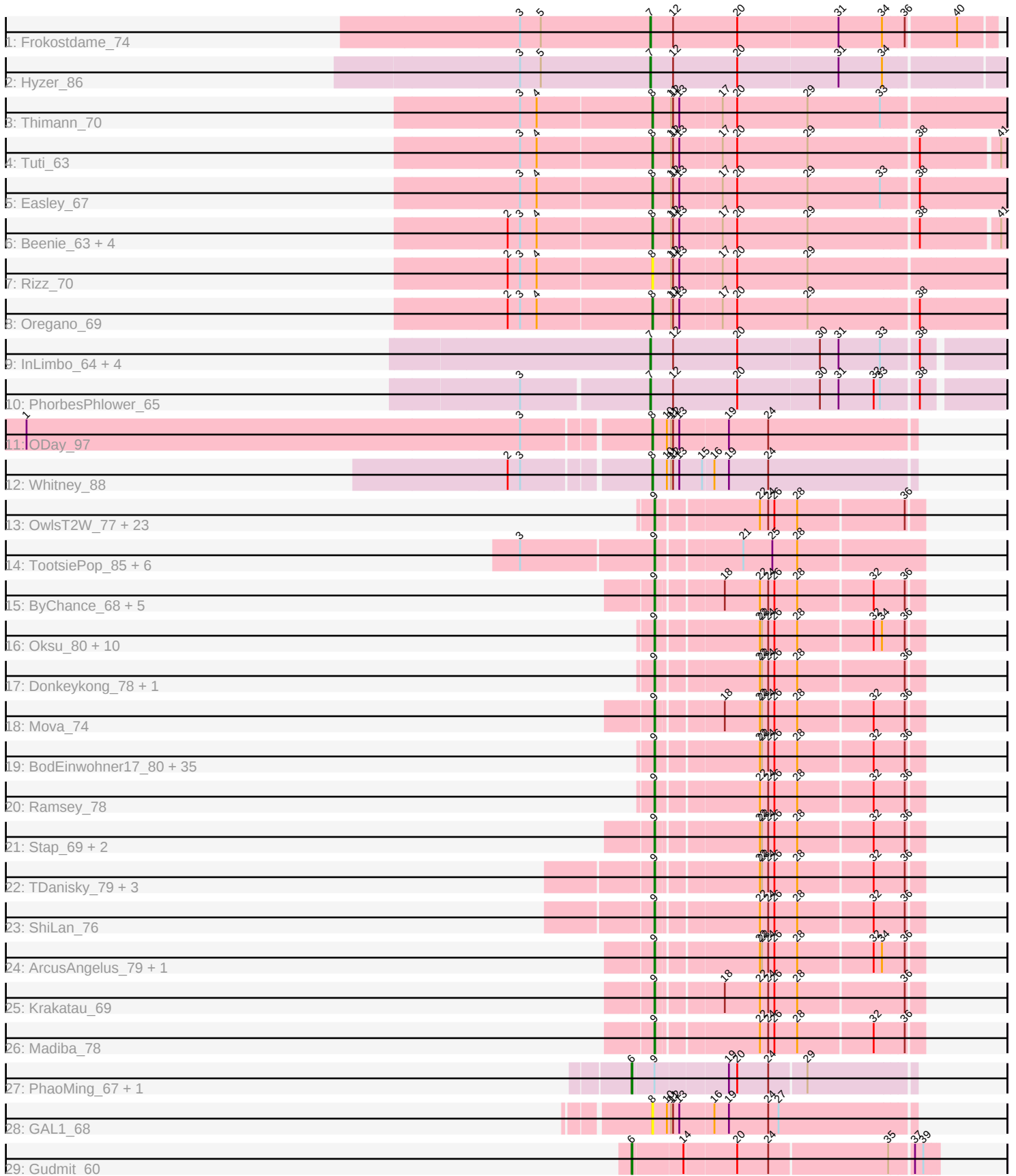


Pham 330619



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 330619 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330619 has 124 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Frokostdame_74
- Track 2 : Hyzer_86
- Track 3 : Thimann_70
- Track 4 : Tuti_63
- Track 5 : Easley_67
- Track 6 : Beenie_63, Clark_68, Samman98_70, Invecra_72, MichaelScott_70
- Track 7 : Rizz_70
- Track 8 : Oregano_69
- Track 9 : InLimbo_64, OneDirection_61, Kuwabara_85, Morkie_67, Lton_64
- Track 10 : PhorbesPhlower_65
- Track 11 : ODay_97
- Track 12 : Whitney_88
- Track 13 : OwlsT2W_77, Spikelee_81, Hades_75, Ovechkin_78, Boomer_76, PatoPoderoso_72, KingJulian_78, Plumbus_76, Violac_76, CheesePuff_83, DosHalletts_77, Hegedechwinu_76, Corium_72, Spartacus_79, TChen_76, Sarma624_73, MilleniumForce_75, LunaStella_74, PMC_69, Rockne_73, BuzzLyseyear_81, MulchSalad_84, DaWorst_75, Velveteen_69
- Track 14 : TootsiePop_85, Misha28_85, Aloeri_87, DocMcStuffins_83, Awesomesauce_86, LilSpotty_81, ChickenDinner_86
- Track 15 : ByChance_68, ShowerHandel_78, MisterCuddles_71, Girr_71, Ruby_69, Topiatin_79
- Track 16 : Oksu_80, Starcevich_75, VRedHorse_74, SeaLumen_79, Cornucopia_76, Enzomatic_82, Polo2Bam_81, Pacc40_68, LunaBlu_77, NewHope4_75, Galactic_74
- Track 17 : Donkeykong_78, CaptainTrips_73
- Track 18 : Mova_74
- Track 19 : BodEinwohner17_80, PhilipPhlop_76, Juniper1_73, FreddyB_83, Crumble_71, Phasih_71, Pollywog_75, Sabb5_76, Nivrat_71, RockyHorror_75, Mantra_72, Radiance_73, LilMoolah_73, Karhdo_73, BlueCrab_77, Peridot_79, Che8_79, Kersh_76, Slim_79, Emmaloid_79, Eish_78, Doug_75, Job42_75, Emma_77, Che9d_86, SimranZ1_75, EmiMonkey_75, Rialto_82, Beanstalk_74, Fancypants_79, Estave1_81, Mutaforma13_80, Grimmer_81, Moonbeam_75, Mahavrat_71, Royals2015_81
- Track 20 : Ramsey_78
- Track 21 : Stap_69, Alexphander_76, Renaud18_84
- Track 22 : TDanisky_79, Sparkdehlily_79, Frankie_84, Eradicator_65
- Track 23 : ShiLan_76

- Track 24 : ArcusAngelus_79, Chevrolet_81
- Track 25 : Krakatau_69
- Track 26 : Madiba_78
- Track 27 : PhaoMing_67, MortyNRick_81
- Track 28 : GAL1_68
- Track 29 : Gudmit_60

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

The start number called the most often in the published annotations is 9, it was called in 91 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander_76, Aloeri_87, ArcusAngelus_79, Awesomesauce_86, Beanstalk_74, BlueCrab_77, BodEinwohner17_80, Boomer_76, BuzzLyseyear_81, ByChance_68, CaptainTrips_73, Che8_79, Che9d_86, CheesePuff_83, Chevrolet_81, ChickenDinner_86, Corium_72, Cornucopia_76, Crumble_71, DaWorst_75, DocMcStuffins_83, Donkeykong_78, DosHalletts_77, Doug_75, Eish_78, EmiMonkey_75, Emma_77, Emmaloid_79, Enzomatic_82, Eradicator_65, Estave1_81, Fancypants_79, Frankie_84, FreddyB_83, Galactic_74, Grrr_71, Grimmer_81, Hades_75, Hegedechwinu_76, Job42_75, Juniper1_73, Karhdo_73, Kersh_76, KingJulian_78, Krakatau_69, LilMoolah_73, LilSpotty_81, LunaBlu_77, LunaStella_74, Madiba_78, Mahavrat_71, Mantra_72, MilleniumForce_75, Misha28_85, MisterCuddles_71, Moonbeam_75, Mova_74, MulchSalad_84, Mutaforma13_80, NewHope4_75, Nivrat_71, Oksu_80, Ovechkin_78, OwlsT2W_77, PMC_69, Pacc40_68, PatoPoderoso_72, Peridot_79, Phasih_71, PhilipPhlop_76, Plumbus_76, Pollywog_75, Polo2Bam_81, Radiance_73, Ramsey_78, Renaud18_84, Rialto_82, Rockne_73, RockyHorror_75, Royals2015_81, Ruby_69, Sabbb_76, Sarma624_73, SeaLumen_79, ShiLan_76, ShowerHandel_78, SimranZ1_75, Slim_79, Sparkdehlily_79, Spartacus_79, Spikelee_81, Stap_69, Starcevich_75, TChen_76, TDanisky_79, TootsiePop_85, Topiatin_79, VRedHorse_74, Velveteen_69, Violac_76,

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

- MortyNRick_81, PhaoMing_67,

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

- Beenie_63, Clark_68, Easley_67, Frokostdame_74, GAL1_68, Gudmit_60, Hyzer_86, InLimbo_64, Invecra_72, Kuwabara_85, Lton_64, MichaelScott_70, Morkie_67, ODay_97, OneDirection_61, Oregano_69, PhorbesPhlower_65, Rizz_70, Samman98_70, Thimann_70, Tuti_63, Whitney_88,

Summary by start number:

Start 6:

- Found in 3 of 124 (2.4%) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gudmit_60 (singleton), MortyNRick_81 (DN), PhaoMing_67 (UNK),

Start 7:

- Found in 8 of 124 (6.5%) of genes in pham
- Manual Annotations of this start: 7 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Frokostdame_74 (CV), Hyzer_86 (CZ1), InLimbo_64 (DH), Kuwabara_85 (DN4), Lton_64 (CZ), Morkie_67 (DH), OneDirection_61 (CZ6), PhorbesPhlower_65 (DH),

Start 8:

- Found in 13 of 124 (10.5%) of genes in pham
- Manual Annotations of this start: 11 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beenie_63 (CZ4), Clark_68 (CZ4), Easley_67 (CZ4), GAL1_68 (singleton), Invectra_72 (CZ4), MichaelScott_70 (CZ4), ODay_97 (DN), Oregon_69 (CZ4), Rizz_70 (CZ4), Samman98_70 (CZ4), Thimann_70 (CZ4), Tuti_63 (CZ4), Whitney_88 (DN1),

Start 9:

- Found in 102 of 124 (82.3%) of genes in pham
- Manual Annotations of this start: 91 of 111
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Alexphander_76 (F1), Aloeri_87 (F1), ArcusAngelus_79 (F1), Awesomesauce_86 (F1), Beanstalk_74 (F1), BlueCrab_77 (F1), BodEinwohner17_80 (F1), Boomer_76 (F1), BuzzLyseyear_81 (F1), ByChance_68 (F1), CaptainTrips_73 (F1), Che8_79 (F1), Che9d_86 (F2), Cheesepuff_83 (F1), Chevrolet_81 (F1), ChickenDinner_86 (F1), Corium_72 (F1), Cornucopia_76 (F1), Crumble_71 (F1), DaWorst_75 (F1), DocMcStuffins_83 (F1), Donkeykong_78 (F1), DosHalletts_77 (F1), Doug_75 (F1), Eish_78 (F1), EmiMonkey_75 (F1), Emma_77 (F1), Emmaloid_79 (F1), Enzomatic_82 (F1), Eradicator_65 (F1), Estave1_81 (F1), Fancypants_79 (F1), Frankie_84 (F1), FreddyB_83 (F1), Galactic_74 (F1), Girr_71 (F1), Grimmer_81 (F1), Hades_75 (F1), Hegedechwinu_76 (F1), Job42_75 (F1), Juniper1_73 (F1), Karhdo_73 (F1), Kersh_76 (F1), KingJulian_78 (F1), Krakatau_69 (F1), LilMoolah_73 (F1), LilSpotty_81 (singleton), LunaBlu_77 (F1), LunaStella_74 (F4), Madiba_78 (F1), Mahavrat_71 (F1), Mantra_72 (F1), MilleniumForce_75 (F1), Misha28_85 (F1), MisterCuddles_71 (F1), Moonbeam_75 (F1), Mova_74 (F1), MulchSalad_84 (F7), Mutaforma13_80 (F1), NewHope4_75 (F1), Nivrat_71 (F1), Oksu_80 (F1), Ovechkin_78 (F1), OwlsT2W_77 (F1), PMC_69 (F1), Pacc40_68 (F1), PatoPoderoso_72 (F1), Peridot_79 (F1), Phasih_71 (F1), PhlipPhlop_76 (F1), Plumbus_76 (F1), Pollywog_75 (F1), Polo2Bam_81 (F1), Radiance_73 (F1), Ramsey_78 (F1), Renaud18_84 (F4), Rialto_82 (F1), Rockne_73 (F1), RockyHorror_75 (F1), Royals2015_81 (F1), Ruby_69 (F1), Sabbb_76 (F1), Sarma624_73 (F1), SeaLumen_79 (F1), ShiLan_76 (F1), ShowerHandel_78 (F1), SimranZ1_75 (F1), Slim_79 (F1), Sparkdehlily_79 (F1), Spartacus_79 (F1), Spikelee_81 (F1), Stap_69 (F1), Starcevich_75 (F1), TChen_76 (F4), TDanisky_79 (F1), TootsiePop_85 (F1), Topiatin_79 (F1), VRedHorse_74 (F1), Velveteen_69 (F1), Violac_76 (F1),

Summary by clusters:

There are 15 clusters represented in this pham: DN, F1, singleton, F7, F4, DH, CZ, CZ1, CZ6, F2, CZ4, DN4, DN1, UNK, CV,

Info for manual annotations of cluster CV:

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

Info for manual annotations of cluster CZ:

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

Info for manual annotations of cluster CZ1:

- Start number 7 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ4:

- Start number 8 was manually annotated 9 times for cluster CZ4.

Info for manual annotations of cluster CZ6:

- Start number 7 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DH:

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

Info for manual annotations of cluster DN:

- Start number 6 was manually annotated 1 time for cluster DN.
- Start number 8 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 8 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN4:

- Start number 7 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster F1:

- Start number 9 was manually annotated 86 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 9 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster F4:

- Start number 9 was manually annotated 3 times for cluster F4.

Gene Information:

Gene: Alexphander_76 Start: 47602, Stop: 47961, Start Num: 9

Candidate Starts for Alexphander_76:

(Start: 9 @47602 has 91 MA's), (22, 47737), (23, 47740), (24, 47749), (26, 47758), (28, 47791), (32, 47896), (36, 47938),

Gene: Aloeri_87 Start: 51469, Stop: 51840, Start Num: 9

Candidate Starts for Aloeri_87:

(3, 51280), (Start: 9 @51469 has 91 MA's), (21, 51583), (25, 51625), (28, 51661),

Gene: ArcusAngelus_79 Start: 48509, Stop: 48868, Start Num: 9

Candidate Starts for ArcusAngelus_79:

(Start: 9 @48509 has 91 MA's), (22, 48644), (23, 48647), (24, 48656), (26, 48665), (28, 48698), (32, 48803), (34, 48815), (36, 48845),

Gene: Awesomesauce_86 Start: 51705, Stop: 52076, Start Num: 9

Candidate Starts for Awesomesauce_86:

(3, 51516), (Start: 9 @51705 has 91 MA's), (21, 51819), (25, 51861), (28, 51897),

Gene: Beanstalk_74 Start: 46665, Stop: 47027, Start Num: 9

Candidate Starts for Beanstalk_74:

(Start: 9 @46665 has 91 MA's), (22, 46803), (23, 46806), (24, 46815), (26, 46824), (28, 46857), (32, 46962), (36, 47004),

Gene: Beenie_63 Start: 44040, Stop: 44528, Start Num: 8

Candidate Starts for Beenie_63:

(2, 43836), (3, 43854), (4, 43878), (Start: 8 @44040 has 11 MA's), (11, 44067), (12, 44070), (13, 44079), (17, 44139), (20, 44160), (29, 44262), (38, 44415), (41, 44520),

Gene: BlueCrab_77 Start: 48388, Stop: 48750, Start Num: 9

Candidate Starts for BlueCrab_77:

(Start: 9 @48388 has 91 MA's), (22, 48526), (23, 48529), (24, 48538), (26, 48547), (28, 48580), (32, 48685), (36, 48727),

Gene: BodEinwohner17_80 Start: 49477, Stop: 49839, Start Num: 9

Candidate Starts for BodEinwohner17_80:

(Start: 9 @49477 has 91 MA's), (22, 49615), (23, 49618), (24, 49627), (26, 49636), (28, 49669), (32, 49774), (36, 49816),

Gene: Boomer_76 Start: 47572, Stop: 47934, Start Num: 9

Candidate Starts for Boomer_76:

(Start: 9 @47572 has 91 MA's), (22, 47710), (24, 47722), (26, 47731), (28, 47764), (36, 47911),

Gene: BuzzLyseyear_81 Start: 49522, Stop: 49884, Start Num: 9

Candidate Starts for BuzzLyseyear_81:

(Start: 9 @49522 has 91 MA's), (22, 49660), (24, 49672), (26, 49681), (28, 49714), (36, 49861),

Gene: ByChance_68 Start: 43741, Stop: 44100, Start Num: 9

Candidate Starts for ByChance_68:

(Start: 9 @43741 has 91 MA's), (18, 43825), (22, 43876), (24, 43888), (26, 43897), (28, 43930), (32, 44035), (36, 44077),

Gene: CaptainTrips_73 Start: 46778, Stop: 47140, Start Num: 9

Candidate Starts for CaptainTrips_73:

(Start: 9 @46778 has 91 MA's), (22, 46916), (23, 46919), (24, 46928), (26, 46937), (28, 46970), (36, 47117),

Gene: Che8_79 Start: 47587, Stop: 47949, Start Num: 9

Candidate Starts for Che8_79:

(Start: 9 @47587 has 91 MA's), (22, 47725), (23, 47728), (24, 47737), (26, 47746), (28, 47779), (32, 47884), (36, 47926),

Gene: Che9d_86 Start: 47311, Stop: 47673, Start Num: 9

Candidate Starts for Che9d_86:

(Start: 9 @47311 has 91 MA's), (22, 47449), (23, 47452), (24, 47461), (26, 47470), (28, 47503), (32, 47608), (36, 47650),

Gene: Cheesepuff_83 Start: 46972, Stop: 47334, Start Num: 9

Candidate Starts for Cheesepuff_83:

(Start: 9 @46972 has 91 MA's), (22, 47110), (24, 47122), (26, 47131), (28, 47164), (36, 47311),

Gene: Chevrolet_81 Start: 48510, Stop: 48869, Start Num: 9

Candidate Starts for Chevrolet_81:

(Start: 9 @48510 has 91 MA's), (22, 48645), (23, 48648), (24, 48657), (26, 48666), (28, 48699), (32, 48804), (34, 48816), (36, 48846),

Gene: ChickenDinner_86 Start: 51469, Stop: 51840, Start Num: 9

Candidate Starts for ChickenDinner_86:

(3, 51280), (Start: 9 @51469 has 91 MA's), (21, 51583), (25, 51625), (28, 51661),

Gene: Clark_68 Start: 43803, Stop: 44291, Start Num: 8

Candidate Starts for Clark_68:

(2, 43599), (3, 43617), (4, 43641), (Start: 8 @43803 has 11 MA's), (11, 43830), (12, 43833), (13, 43842), (17, 43902), (20, 43923), (29, 44025), (38, 44178), (41, 44283),

Gene: Corium_72 Start: 48239, Stop: 48601, Start Num: 9

Candidate Starts for Corium_72:

(Start: 9 @48239 has 91 MA's), (22, 48377), (24, 48389), (26, 48398), (28, 48431), (36, 48578),

Gene: Cornucopia_76 Start: 46202, Stop: 46564, Start Num: 9

Candidate Starts for Cornucopia_76:

(Start: 9 @46202 has 91 MA's), (22, 46340), (23, 46343), (24, 46352), (26, 46361), (28, 46394), (32, 46499), (34, 46511), (36, 46541),

Gene: Crumble_71 Start: 43811, Stop: 44173, Start Num: 9

Candidate Starts for Crumble_71:

(Start: 9 @43811 has 91 MA's), (22, 43949), (23, 43952), (24, 43961), (26, 43970), (28, 44003), (32, 44108), (36, 44150),

Gene: DaWorst_75 Start: 46551, Stop: 46913, Start Num: 9

Candidate Starts for DaWorst_75:

(Start: 9 @46551 has 91 MA's), (22, 46689), (24, 46701), (26, 46710), (28, 46743), (36, 46890),

Gene: DocMcStuffins_83 Start: 53099, Stop: 53470, Start Num: 9

Candidate Starts for DocMcStuffins_83:

(3, 52910), (Start: 9 @53099 has 91 MA's), (21, 53213), (25, 53255), (28, 53291),

Gene: Donkeykong_78 Start: 48504, Stop: 48866, Start Num: 9

Candidate Starts for Donkeykong_78:

(Start: 9 @48504 has 91 MA's), (22, 48642), (23, 48645), (24, 48654), (26, 48663), (28, 48696), (36, 48843),

Gene: DosHalletts_77 Start: 48806, Stop: 49168, Start Num: 9

Candidate Starts for DosHalletts_77:

(Start: 9 @48806 has 91 MA's), (22, 48944), (24, 48956), (26, 48965), (28, 48998), (36, 49145),

Gene: Doug_75 Start: 48431, Stop: 48793, Start Num: 9

Candidate Starts for Doug_75:

(Start: 9 @48431 has 91 MA's), (22, 48569), (23, 48572), (24, 48581), (26, 48590), (28, 48623), (32, 48728), (36, 48770),

Gene: Easley_67 Start: 42795, Stop: 43292, Start Num: 8

Candidate Starts for Easley_67:

(3, 42609), (4, 42633), (Start: 8 @42795 has 11 MA's), (11, 42822), (12, 42825), (13, 42834), (17, 42894), (20, 42915), (29, 43017), (33, 43122), (38, 43170),

Gene: Eish_78 Start: 48184, Stop: 48546, Start Num: 9

Candidate Starts for Eish_78:

(Start: 9 @48184 has 91 MA's), (22, 48322), (23, 48325), (24, 48334), (26, 48343), (28, 48376), (32, 48481), (36, 48523),

Gene: EmiMonkey_75 Start: 51133, Stop: 51495, Start Num: 9

Candidate Starts for EmiMonkey_75:

(Start: 9 @51133 has 91 MA's), (22, 51271), (23, 51274), (24, 51283), (26, 51292), (28, 51325), (32, 51430), (36, 51472),

Gene: Emma_77 Start: 46564, Stop: 46926, Start Num: 9

Candidate Starts for Emma_77:

(Start: 9 @46564 has 91 MA's), (22, 46702), (23, 46705), (24, 46714), (26, 46723), (28, 46756), (32, 46861), (36, 46903),

Gene: Emmaloid_79 Start: 47302, Stop: 47664, Start Num: 9

Candidate Starts for Emmaloid_79:

(Start: 9 @47302 has 91 MA's), (22, 47440), (23, 47443), (24, 47452), (26, 47461), (28, 47494), (32, 47599), (36, 47641),

Gene: Enzomatic_82 Start: 45245, Stop: 45607, Start Num: 9

Candidate Starts for Enzomatic_82:

(Start: 9 @45245 has 91 MA's), (22, 45383), (23, 45386), (24, 45395), (26, 45404), (28, 45437), (32, 45542), (34, 45554), (36, 45584),

Gene: Eradicator_65 Start: 44994, Stop: 45353, Start Num: 9

Candidate Starts for Eradicator_65:

(Start: 9 @44994 has 91 MA's), (22, 45129), (23, 45132), (24, 45141), (26, 45150), (28, 45183), (32, 45288), (36, 45330),

Gene: Estave1_81 Start: 50501, Stop: 50863, Start Num: 9

Candidate Starts for Estave1_81:

(Start: 9 @50501 has 91 MA's), (22, 50639), (23, 50642), (24, 50651), (26, 50660), (28, 50693), (32, 50798), (36, 50840),

Gene: Fancypants_79 Start: 48799, Stop: 49161, Start Num: 9

Candidate Starts for Fancypants_79:

(Start: 9 @48799 has 91 MA's), (22, 48937), (23, 48940), (24, 48949), (26, 48958), (28, 48991), (32, 49096), (36, 49138),

Gene: Frankie_84 Start: 48920, Stop: 49279, Start Num: 9

Candidate Starts for Frankie_84:

(Start: 9 @48920 has 91 MA's), (22, 49055), (23, 49058), (24, 49067), (26, 49076), (28, 49109), (32, 49214), (36, 49256),

Gene: FreddyB_83 Start: 48547, Stop: 48909, Start Num: 9

Candidate Starts for FreddyB_83:

(Start: 9 @48547 has 91 MA's), (22, 48685), (23, 48688), (24, 48697), (26, 48706), (28, 48739), (32, 48844), (36, 48886),

Gene: Frokostdame_74 Start: 47068, Stop: 47550, Start Num: 7

Candidate Starts for Frokostdame_74:

(3, 46882), (5, 46912), (Start: 7 @47068 has 7 MA's), (12, 47101), (20, 47194), (31, 47338), (34, 47401), (36, 47431), (40, 47500),

Gene: GAL1_68 Start: 43472, Stop: 43843, Start Num: 8

Candidate Starts for GAL1_68:

(Start: 8 @43472 has 11 MA's), (10, 43493), (11, 43499), (12, 43502), (13, 43511), (16, 43559), (19, 43580), (24, 43637), (27, 43652),

Gene: Galactic_74 Start: 46823, Stop: 47185, Start Num: 9

Candidate Starts for Galactic_74:

(Start: 9 @46823 has 91 MA's), (22, 46961), (23, 46964), (24, 46973), (26, 46982), (28, 47015), (32, 47120), (34, 47132), (36, 47162),

Gene: Girr_71 Start: 47080, Stop: 47439, Start Num: 9

Candidate Starts for Girr_71:

(Start: 9 @47080 has 91 MA's), (18, 47164), (22, 47215), (24, 47227), (26, 47236), (28, 47269), (32, 47374), (36, 47416),

Gene: Grimmer_81 Start: 47377, Stop: 47739, Start Num: 9

Candidate Starts for Grimmer_81:

(Start: 9 @47377 has 91 MA's), (22, 47515), (23, 47518), (24, 47527), (26, 47536), (28, 47569), (32, 47674), (36, 47716),

Gene: Gudmit_60 Start: 36750, Stop: 37166, Start Num: 6

Candidate Starts for Gudmit_60:

(Start: 6 @36750 has 2 MA's), (14, 36819), (20, 36891), (24, 36936), (35, 37104), (37, 37134), (39, 37146),

Gene: Hades_75 Start: 45562, Stop: 45924, Start Num: 9

Candidate Starts for Hades_75:

(Start: 9 @45562 has 91 MA's), (22, 45700), (24, 45712), (26, 45721), (28, 45754), (36, 45901),

Gene: Hegedechwinu_76 Start: 45952, Stop: 46314, Start Num: 9

Candidate Starts for Hegedechwinu_76:

(Start: 9 @45952 has 91 MA's), (22, 46090), (24, 46102), (26, 46111), (28, 46144), (36, 46291),

Gene: Hyzer_86 Start: 55452, Stop: 55943, Start Num: 7

Candidate Starts for Hyzer_86:

(3, 55266), (5, 55296), (Start: 7 @55452 has 7 MA's), (12, 55485), (20, 55578), (31, 55722), (34, 55785),

Gene: InLimbo_64 Start: 38586, Stop: 39071, Start Num: 7

Candidate Starts for InLimbo_64:

(Start: 7 @38586 has 7 MA's), (12, 38619), (20, 38712), (30, 38829), (31, 38856), (33, 38916), (38, 38964),

Gene: Invecetra_72 Start: 45376, Stop: 45864, Start Num: 8

Candidate Starts for Invecetra_72:

(2, 45172), (3, 45190), (4, 45214), (Start: 8 @45376 has 11 MA's), (11, 45403), (12, 45406), (13, 45415), (17, 45475), (20, 45496), (29, 45598), (38, 45751), (41, 45856),

Gene: Job42_75 Start: 50144, Stop: 50506, Start Num: 9

Candidate Starts for Job42_75:

(Start: 9 @50144 has 91 MA's), (22, 50282), (23, 50285), (24, 50294), (26, 50303), (28, 50336), (32, 50441), (36, 50483),

Gene: Juniper1_73 Start: 46738, Stop: 47100, Start Num: 9

Candidate Starts for Juniper1_73:

(Start: 9 @46738 has 91 MA's), (22, 46876), (23, 46879), (24, 46888), (26, 46897), (28, 46930), (32, 47035), (36, 47077),

Gene: Karhdo_73 Start: 45801, Stop: 46163, Start Num: 9

Candidate Starts for Karhdo_73:

(Start: 9 @45801 has 91 MA's), (22, 45939), (23, 45942), (24, 45951), (26, 45960), (28, 45993), (32, 46098), (36, 46140),

Gene: Kersh_76 Start: 48987, Stop: 49349, Start Num: 9

Candidate Starts for Kersh_76:

(Start: 9 @48987 has 91 MA's), (22, 49125), (23, 49128), (24, 49137), (26, 49146), (28, 49179), (32, 49284), (36, 49326),

Gene: KingJulian_78 Start: 48239, Stop: 48601, Start Num: 9

Candidate Starts for KingJulian_78:

(Start: 9 @48239 has 91 MA's), (22, 48377), (24, 48389), (26, 48398), (28, 48431), (36, 48578),

Gene: Krakatau_69 Start: 43460, Stop: 43819, Start Num: 9

Candidate Starts for Krakatau_69:

(Start: 9 @43460 has 91 MA's), (18, 43544), (22, 43595), (24, 43607), (26, 43616), (28, 43649), (36, 43796),

Gene: Kuwabara_85 Start: 50759, Stop: 51244, Start Num: 7

Candidate Starts for Kuwabara_85:

(Start: 7 @50759 has 7 MA's), (12, 50792), (20, 50885), (30, 51002), (31, 51029), (33, 51089), (38, 51137),

Gene: LilMoolah_73 Start: 47141, Stop: 47503, Start Num: 9

Candidate Starts for LilMoolah_73:

(Start: 9 @47141 has 91 MA's), (22, 47279), (23, 47282), (24, 47291), (26, 47300), (28, 47333), (32, 47438), (36, 47480),

Gene: LilSpotty_81 Start: 47145, Stop: 47516, Start Num: 9

Candidate Starts for LilSpotty_81:

(3, 46956), (Start: 9 @47145 has 91 MA's), (21, 47259), (25, 47301), (28, 47337),

Gene: Lton_64 Start: 37912, Stop: 38397, Start Num: 7

Candidate Starts for Lton_64:

(Start: 7 @37912 has 7 MA's), (12, 37945), (20, 38038), (30, 38155), (31, 38182), (33, 38242), (38, 38290),

Gene: LunaBlu_77 Start: 47481, Stop: 47843, Start Num: 9

Candidate Starts for LunaBlu_77:

(Start: 9 @47481 has 91 MA's), (22, 47619), (23, 47622), (24, 47631), (26, 47640), (28, 47673), (32, 47778), (34, 47790), (36, 47820),

Gene: LunaStella_74 Start: 46916, Stop: 47278, Start Num: 9

Candidate Starts for LunaStella_74:

(Start: 9 @46916 has 91 MA's), (22, 47054), (24, 47066), (26, 47075), (28, 47108), (36, 47255),

Gene: Madiba_78 Start: 48657, Stop: 49016, Start Num: 9

Candidate Starts for Madiba_78:

(Start: 9 @48657 has 91 MA's), (22, 48792), (24, 48804), (26, 48813), (28, 48846), (32, 48951), (36, 48993),

Gene: Mahavrat_71 Start: 44946, Stop: 45308, Start Num: 9

Candidate Starts for Mahavrat_71:

(Start: 9 @44946 has 91 MA's), (22, 45084), (23, 45087), (24, 45096), (26, 45105), (28, 45138), (32, 45243), (36, 45285),

Gene: Mantra_72 Start: 46775, Stop: 47137, Start Num: 9

Candidate Starts for Mantra_72:

(Start: 9 @46775 has 91 MA's), (22, 46913), (23, 46916), (24, 46925), (26, 46934), (28, 46967), (32, 47072), (36, 47114),

Gene: MichaelScott_70 Start: 44484, Stop: 44972, Start Num: 8

Candidate Starts for MichaelScott_70:

(2, 44280), (3, 44298), (4, 44322), (Start: 8 @44484 has 11 MA's), (11, 44511), (12, 44514), (13, 44523), (17, 44583), (20, 44604), (29, 44706), (38, 44859), (41, 44964),

Gene: MilleniumForce_75 Start: 47446, Stop: 47808, Start Num: 9

Candidate Starts for MilleniumForce_75:

(Start: 9 @47446 has 91 MA's), (22, 47584), (24, 47596), (26, 47605), (28, 47638), (36, 47785),

Gene: Misha28_85 Start: 52404, Stop: 52775, Start Num: 9

Candidate Starts for Misha28_85:

(3, 52215), (Start: 9 @52404 has 91 MA's), (21, 52518), (25, 52560), (28, 52596),

Gene: MisterCuddles_71 Start: 47080, Stop: 47439, Start Num: 9

Candidate Starts for MisterCuddles_71:

(Start: 9 @47080 has 91 MA's), (18, 47164), (22, 47215), (24, 47227), (26, 47236), (28, 47269), (32, 47374), (36, 47416),

Gene: Moonbeam_75 Start: 47593, Stop: 47955, Start Num: 9

Candidate Starts for Moonbeam_75:

(Start: 9 @47593 has 91 MA's), (22, 47731), (23, 47734), (24, 47743), (26, 47752), (28, 47785), (32, 47890), (36, 47932),

Gene: Morkie_67 Start: 39060, Stop: 39545, Start Num: 7

Candidate Starts for Morkie_67:

(Start: 7 @39060 has 7 MA's), (12, 39093), (20, 39186), (30, 39303), (31, 39330), (33, 39390), (38, 39438),

Gene: MortyNRick_81 Start: 48398, Stop: 48784, Start Num: 6

Candidate Starts for MortyNRick_81:

(Start: 6 @48398 has 2 MA's), (Start: 9 @48428 has 91 MA's), (19, 48527), (20, 48539), (24, 48584), (29, 48635),

Gene: Mova_74 Start: 46081, Stop: 46440, Start Num: 9

Candidate Starts for Mova_74:

(Start: 9 @46081 has 91 MA's), (18, 46165), (22, 46216), (23, 46219), (24, 46228), (26, 46237), (28, 46270), (32, 46375), (36, 46417),

Gene: MulchSalad_84 Start: 49578, Stop: 49940, Start Num: 9

Candidate Starts for MulchSalad_84:

(Start: 9 @49578 has 91 MA's), (22, 49716), (24, 49728), (26, 49737), (28, 49770), (36, 49917),

Gene: Mutaforma13_80 Start: 48195, Stop: 48557, Start Num: 9

Candidate Starts for Mutaforma13_80:

(Start: 9 @48195 has 91 MA's), (22, 48333), (23, 48336), (24, 48345), (26, 48354), (28, 48387), (32, 48492), (36, 48534),

Gene: NewHope4_75 Start: 45391, Stop: 45753, Start Num: 9

Candidate Starts for NewHope4_75:

(Start: 9 @45391 has 91 MA's), (22, 45529), (23, 45532), (24, 45541), (26, 45550), (28, 45583), (32, 45688), (34, 45700), (36, 45730),

Gene: Nivrat_71 Start: 47014, Stop: 47376, Start Num: 9

Candidate Starts for Nivrat_71:

(Start: 9 @47014 has 91 MA's), (22, 47152), (23, 47155), (24, 47164), (26, 47173), (28, 47206), (32, 47311), (36, 47353),

Gene: ODay_97 Start: 51969, Stop: 52340, Start Num: 8

Candidate Starts for ODay_97:

(1, 51084), (3, 51798), (Start: 8 @51969 has 11 MA's), (10, 51990), (11, 51996), (12, 51999), (13, 52008), (19, 52077), (24, 52134),

Gene: Oksu_80 Start: 48941, Stop: 49303, Start Num: 9

Candidate Starts for Oksu_80:

(Start: 9 @48941 has 91 MA's), (22, 49079), (23, 49082), (24, 49091), (26, 49100), (28, 49133), (32, 49238), (34, 49250), (36, 49280),

Gene: OneDirection_61 Start: 36474, Stop: 36959, Start Num: 7

Candidate Starts for OneDirection_61:

(Start: 7 @36474 has 7 MA's), (12, 36507), (20, 36600), (30, 36717), (31, 36744), (33, 36804), (38, 36852),

Gene: Oregano_69 Start: 43358, Stop: 43855, Start Num: 8

Candidate Starts for Oregano_69:

(2, 43154), (3, 43172), (4, 43196), (Start: 8 @43358 has 11 MA's), (11, 43385), (12, 43388), (13, 43397), (17, 43457), (20, 43478), (29, 43580), (38, 43733),

Gene: Ovechkin_78 Start: 47776, Stop: 48156, Start Num: 9

Candidate Starts for Ovechkin_78:

(Start: 9 @47776 has 91 MA's), (22, 47914), (24, 47926), (26, 47935), (28, 47968), (36, 48115),

Gene: OwlsT2W_77 Start: 47307, Stop: 47669, Start Num: 9

Candidate Starts for OwlsT2W_77:

(Start: 9 @47307 has 91 MA's), (22, 47445), (24, 47457), (26, 47466), (28, 47499), (36, 47646),

Gene: PMC_69 Start: 45796, Stop: 46158, Start Num: 9

Candidate Starts for PMC_69:

(Start: 9 @45796 has 91 MA's), (22, 45934), (24, 45946), (26, 45955), (28, 45988), (36, 46135),

Gene: Pacc40_68 Start: 47041, Stop: 47403, Start Num: 9

Candidate Starts for Pacc40_68:

(Start: 9 @47041 has 91 MA's), (22, 47179), (23, 47182), (24, 47191), (26, 47200), (28, 47233), (32, 47338), (34, 47350), (36, 47380),

Gene: PatoPoderoso_72 Start: 48239, Stop: 48601, Start Num: 9

Candidate Starts for PatoPoderoso_72:

(Start: 9 @48239 has 91 MA's), (22, 48377), (24, 48389), (26, 48398), (28, 48431), (36, 48578),

Gene: Peridot_79 Start: 47792, Stop: 48154, Start Num: 9

Candidate Starts for Peridot_79:

(Start: 9 @47792 has 91 MA's), (22, 47930), (23, 47933), (24, 47942), (26, 47951), (28, 47984), (32, 48089), (36, 48131),

Gene: PhaoMing_67 Start: 42941, Stop: 43327, Start Num: 6

Candidate Starts for PhaoMing_67:

(Start: 6 @42941 has 2 MA's), (Start: 9 @42971 has 91 MA's), (19, 43070), (20, 43082), (24, 43127), (29, 43178),

Gene: Phasih_71 Start: 45984, Stop: 46346, Start Num: 9

Candidate Starts for Phasih_71:

(Start: 9 @45984 has 91 MA's), (22, 46122), (23, 46125), (24, 46134), (26, 46143), (28, 46176), (32, 46281), (36, 46323),

Gene: PhlipPhlop_76 Start: 51133, Stop: 51495, Start Num: 9

Candidate Starts for PhlipPhlop_76:

(Start: 9 @51133 has 91 MA's), (22, 51271), (23, 51274), (24, 51283), (26, 51292), (28, 51325), (32, 51430), (36, 51472),

Gene: PhorbesPhlower_65 Start: 38455, Stop: 38940, Start Num: 7

Candidate Starts for PhorbesPhlower_65:

(3, 38278), (Start: 7 @38455 has 7 MA's), (12, 38488), (20, 38581), (30, 38698), (31, 38725), (32, 38776), (33, 38785), (38, 38833),

Gene: Plumbus_76 Start: 44733, Stop: 45095, Start Num: 9

Candidate Starts for Plumbus_76:

(Start: 9 @44733 has 91 MA's), (22, 44871), (24, 44883), (26, 44892), (28, 44925), (36, 45072),

Gene: Pollywog_75 Start: 48056, Stop: 48418, Start Num: 9

Candidate Starts for Pollywog_75:

(Start: 9 @48056 has 91 MA's), (22, 48194), (23, 48197), (24, 48206), (26, 48215), (28, 48248), (32, 48353), (36, 48395),

Gene: Polo2Bam_81 Start: 45245, Stop: 45607, Start Num: 9

Candidate Starts for Polo2Bam_81:

(Start: 9 @45245 has 91 MA's), (22, 45383), (23, 45386), (24, 45395), (26, 45404), (28, 45437), (32, 45542), (34, 45554), (36, 45584),

Gene: Radiance_73 Start: 47801, Stop: 48163, Start Num: 9

Candidate Starts for Radiance_73:

(Start: 9 @47801 has 91 MA's), (22, 47939), (23, 47942), (24, 47951), (26, 47960), (28, 47993), (32, 48098), (36, 48140),

Gene: Ramsey_78 Start: 49283, Stop: 49645, Start Num: 9

Candidate Starts for Ramsey_78:

(Start: 9 @49283 has 91 MA's), (22, 49421), (24, 49433), (26, 49442), (28, 49475), (32, 49580), (36, 49622),

Gene: Renaud18_84 Start: 48081, Stop: 48440, Start Num: 9

Candidate Starts for Renaud18_84:

(Start: 9 @48081 has 91 MA's), (22, 48216), (23, 48219), (24, 48228), (26, 48237), (28, 48270), (32, 48375), (36, 48417),

Gene: Rialto_82 Start: 48675, Stop: 49037, Start Num: 9

Candidate Starts for Rialto_82:

(Start: 9 @48675 has 91 MA's), (22, 48813), (23, 48816), (24, 48825), (26, 48834), (28, 48867), (32, 48972), (36, 49014),

Gene: Rizz_70 Start: 44592, Stop: 45089, Start Num: 8

Candidate Starts for Rizz_70:

(2, 44388), (3, 44406), (4, 44430), (Start: 8 @44592 has 11 MA's), (11, 44619), (12, 44622), (13, 44631), (17, 44691), (20, 44712), (29, 44814),

Gene: Rockne_73 Start: 45808, Stop: 46170, Start Num: 9

Candidate Starts for Rockne_73:

(Start: 9 @45808 has 91 MA's), (22, 45946), (24, 45958), (26, 45967), (28, 46000), (36, 46147),

Gene: RockyHorror_75 Start: 46367, Stop: 46729, Start Num: 9

Candidate Starts for RockyHorror_75:

(Start: 9 @46367 has 91 MA's), (22, 46505), (23, 46508), (24, 46517), (26, 46526), (28, 46559), (32, 46664), (36, 46706),

Gene: Royals2015_81 Start: 47327, Stop: 47689, Start Num: 9

Candidate Starts for Royals2015_81:

(Start: 9 @47327 has 91 MA's), (22, 47465), (23, 47468), (24, 47477), (26, 47486), (28, 47519), (32, 47624), (36, 47666),

Gene: Ruby_69 Start: 47081, Stop: 47440, Start Num: 9

Candidate Starts for Ruby_69:

(Start: 9 @47081 has 91 MA's), (18, 47165), (22, 47216), (24, 47228), (26, 47237), (28, 47270), (32, 47375), (36, 47417),

Gene: Sabbb_76 Start: 44962, Stop: 45324, Start Num: 9

Candidate Starts for Sabbb_76:

(Start: 9 @44962 has 91 MA's), (22, 45100), (23, 45103), (24, 45112), (26, 45121), (28, 45154), (32, 45259), (36, 45301),

Gene: Samman98_70 Start: 43906, Stop: 44394, Start Num: 8

Candidate Starts for Samman98_70:

(2, 43702), (3, 43720), (4, 43744), (Start: 8 @43906 has 11 MA's), (11, 43933), (12, 43936), (13, 43945), (17, 44005), (20, 44026), (29, 44128), (38, 44281), (41, 44386),

Gene: Sarma624_73 Start: 43941, Stop: 44303, Start Num: 9

Candidate Starts for Sarma624_73:

(Start: 9 @43941 has 91 MA's), (22, 44079), (24, 44091), (26, 44100), (28, 44133), (36, 44280),

Gene: SeaLumen_79 Start: 45245, Stop: 45607, Start Num: 9

Candidate Starts for SeaLumen_79:

(Start: 9 @45245 has 91 MA's), (22, 45383), (23, 45386), (24, 45395), (26, 45404), (28, 45437), (32, 45542), (34, 45554), (36, 45584),

Gene: ShiLan_76 Start: 49922, Stop: 50281, Start Num: 9

Candidate Starts for ShiLan_76:

(Start: 9 @49922 has 91 MA's), (22, 50057), (24, 50069), (26, 50078), (28, 50111), (32, 50216), (36, 50258),

Gene: ShowerHandel_78 Start: 47681, Stop: 48040, Start Num: 9

Candidate Starts for ShowerHandel_78:

(Start: 9 @47681 has 91 MA's), (18, 47765), (22, 47816), (24, 47828), (26, 47837), (28, 47870), (32, 47975), (36, 48017),

Gene: SimranZ1_75 Start: 46400, Stop: 46762, Start Num: 9

Candidate Starts for SimranZ1_75:

(Start: 9 @46400 has 91 MA's), (22, 46538), (23, 46541), (24, 46550), (26, 46559), (28, 46592), (32, 46697), (36, 46739),

Gene: Slim_79 Start: 47293, Stop: 47655, Start Num: 9

Candidate Starts for Slim_79:

(Start: 9 @47293 has 91 MA's), (22, 47431), (23, 47434), (24, 47443), (26, 47452), (28, 47485), (32, 47590), (36, 47632),

Gene: Sparkdehlily_79 Start: 45865, Stop: 46224, Start Num: 9

Candidate Starts for Sparkdehlily_79:

(Start: 9 @45865 has 91 MA's), (22, 46000), (23, 46003), (24, 46012), (26, 46021), (28, 46054), (32, 46159), (36, 46201),

Gene: Spartacus_79 Start: 49494, Stop: 49856, Start Num: 9

Candidate Starts for Spartacus_79:

(Start: 9 @49494 has 91 MA's), (22, 49632), (24, 49644), (26, 49653), (28, 49686), (36, 49833),

Gene: Spikelee_81 Start: 49384, Stop: 49746, Start Num: 9

Candidate Starts for Spikelee_81:

(Start: 9 @49384 has 91 MA's), (22, 49522), (24, 49534), (26, 49543), (28, 49576), (36, 49723),

Gene: Stap_69 Start: 44326, Stop: 44685, Start Num: 9

Candidate Starts for Stap_69:

(Start: 9 @44326 has 91 MA's), (22, 44461), (23, 44464), (24, 44473), (26, 44482), (28, 44515), (32, 44620), (36, 44662),

Gene: Starcevich_75 Start: 48358, Stop: 48720, Start Num: 9

Candidate Starts for Starcevich_75:

(Start: 9 @48358 has 91 MA's), (22, 48496), (23, 48499), (24, 48508), (26, 48517), (28, 48550), (32, 48655), (34, 48667), (36, 48697),

Gene: TChen_76 Start: 48867, Stop: 49229, Start Num: 9

Candidate Starts for TChen_76:

(Start: 9 @48867 has 91 MA's), (22, 49005), (24, 49017), (26, 49026), (28, 49059), (36, 49206),

Gene: TDanisky_79 Start: 45865, Stop: 46224, Start Num: 9

Candidate Starts for TDanisky_79:

(Start: 9 @45865 has 91 MA's), (22, 46000), (23, 46003), (24, 46012), (26, 46021), (28, 46054), (32, 46159), (36, 46201),

Gene: Thimann_70 Start: 44163, Stop: 44660, Start Num: 8

Candidate Starts for Thimann_70:

(3, 43977), (4, 44001), (Start: 8 @44163 has 11 MA's), (11, 44190), (12, 44193), (13, 44202), (17, 44262), (20, 44283), (29, 44385), (33, 44490),

Gene: TootsiePop_85 Start: 52404, Stop: 52775, Start Num: 9

Candidate Starts for TootsiePop_85:

(3, 52215), (Start: 9 @52404 has 91 MA's), (21, 52518), (25, 52560), (28, 52596),

Gene: Topiatin_79 Start: 47807, Stop: 48166, Start Num: 9

Candidate Starts for Topiatin_79:

(Start: 9 @47807 has 91 MA's), (18, 47891), (22, 47942), (24, 47954), (26, 47963), (28, 47996), (32, 48101), (36, 48143),

Gene: Tuti_63 Start: 44342, Stop: 44830, Start Num: 8

Candidate Starts for Tuti_63:

(3, 44156), (4, 44180), (Start: 8 @44342 has 11 MA's), (11, 44369), (12, 44372), (13, 44381), (17, 44441), (20, 44462), (29, 44564), (38, 44717), (41, 44822),

Gene: VRedHorse_74 Start: 45020, Stop: 45382, Start Num: 9

Candidate Starts for VRedHorse_74:

(Start: 9 @45020 has 91 MA's), (22, 45158), (23, 45161), (24, 45170), (26, 45179), (28, 45212), (32, 45317), (34, 45329), (36, 45359),

Gene: Velveteen_69 Start: 43941, Stop: 44303, Start Num: 9

Candidate Starts for Velveteen_69:

(Start: 9 @43941 has 91 MA's), (22, 44079), (24, 44091), (26, 44100), (28, 44133), (36, 44280),

Gene: Violac_76 Start: 48215, Stop: 48577, Start Num: 9

Candidate Starts for Violac_76:

(Start: 9 @48215 has 91 MA's), (22, 48353), (24, 48365), (26, 48374), (28, 48407), (36, 48554),

Gene: Whitney_88 Start: 50901, Stop: 51272, Start Num: 8

Candidate Starts for Whitney_88:

(2, 50712), (3, 50730), (Start: 8 @50901 has 11 MA's), (10, 50922), (11, 50928), (12, 50931), (13, 50940), (15, 50973), (16, 50988), (19, 51009), (24, 51066),