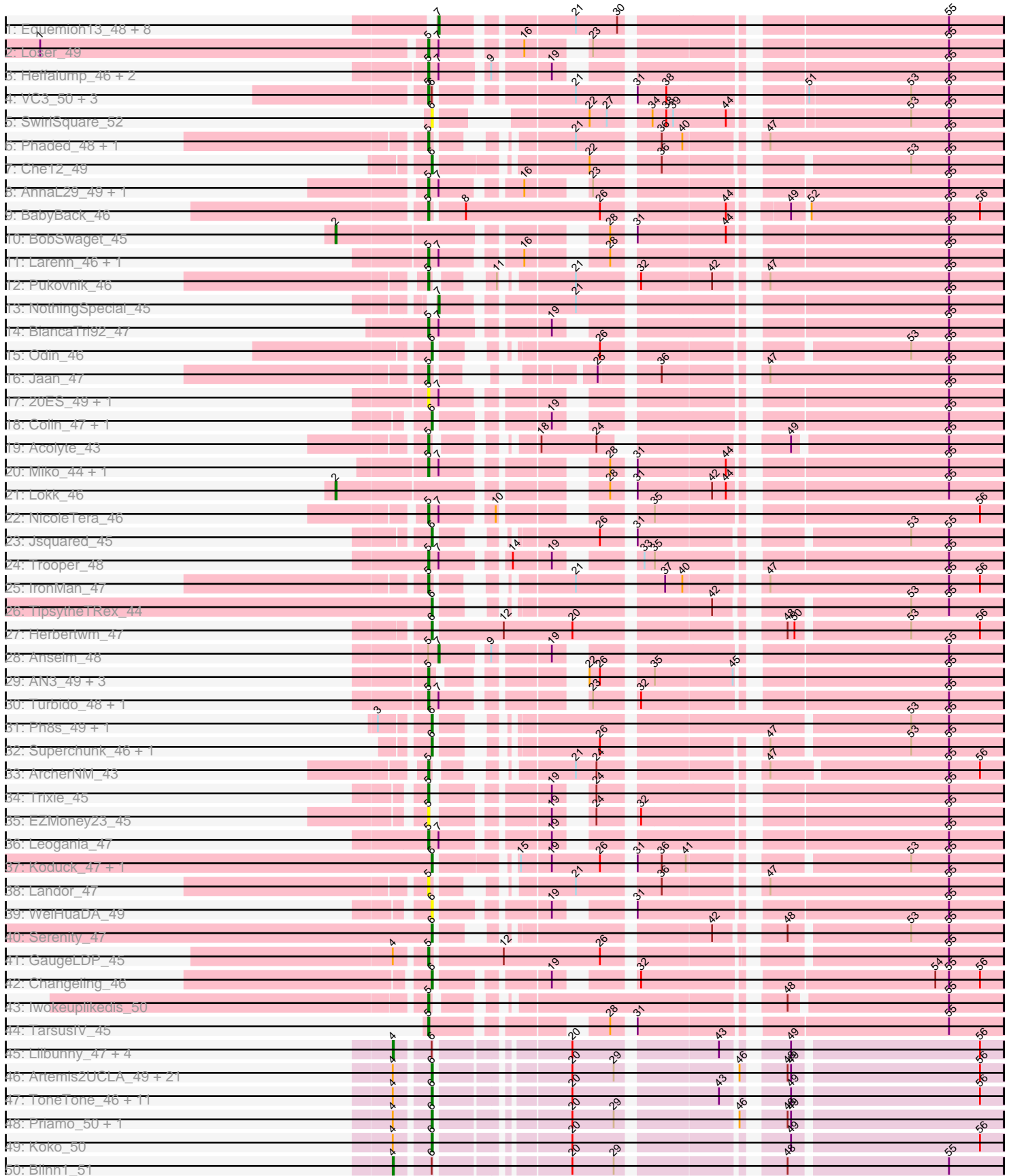


Pham 171320



51: Toaka_46

13

11

24

861

A series of horizontal lines for writing, with a dashed line on the right side.

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 171320 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171320 has 114 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Equemioh13_48, Buggy_49, WideWale_48, MiculUcigas_47, Baehexic_46, Updawg_48, NaSiaTalie_47, Centaur_48, Flare16_47
- Track 2 : Loser_49
- Track 3 : Heffalump_46, QueenB2_46, Fameo_47
- Track 4 : VC3_50, C3_45, AN18_50, AN9_50
- Track 5 : SwirlSquare_52
- Track 6 : Phaded_48, Bactobuster_46
- Track 7 : Che12_49
- Track 8 : AnnaL29_49, RedRock_49
- Track 9 : BabyBack_46
- Track 10 : BobSwaget_45
- Track 11 : Larenn_46, Malec_47
- Track 12 : Pukovnik_46
- Track 13 : NothingSpecial_45
- Track 14 : BiancaTri92_47
- Track 15 : Odin_46
- Track 16 : Jaan_47
- Track 17 : 20ES_49, First_0048
- Track 18 : Colin_47, Kalpine_45
- Track 19 : Acolyte_43
- Track 20 : Miko_44, Rachaly_46
- Track 21 : Lokk_46
- Track 22 : NicoleTera_46
- Track 23 : Jsquared_45
- Track 24 : Trooper_48
- Track 25 : IronMan_47
- Track 26 : TipsytheTRex_44
- Track 27 : Herbertwm_47
- Track 28 : Anselm_48
- Track 29 : AN3_49, VA6_47, Deloris_47, BengiVuitton_48
- Track 30 : Turbido_48, Jerm_49
- Track 31 : Ph8s_49, Adzzy_49
- Track 32 : Superchunk_46, Caraxes_47
- Track 33 : ArcherNM_43
- Track 34 : Trixie_45
- Track 35 : EZMoney23_45
- Track 36 : Leogania_47

- Track 37 : Koduck_47, L5_46
- Track 38 : Landor_47
- Track 39 : WeiHuaDA_49
- Track 40 : Serenity_47
- Track 41 : GaugeLDP_45
- Track 42 : Changeling_46
- Track 43 : Iwokeuplikedis_50
- Track 44 : TarsusIV_45
- Track 45 : Lilbunny_47, Garak_51, Helmet_51, Yokurt_49, Hexamo_49
- Track 46 : Artemis2UCLA_49, SmellyB_49, Isiphiwo_47, SuperAwesome_49, Candra_49, GreedyLawyer_49, Kipper29_49, Dorothea_48, Gladiator_47, SuperCallie99_48, VohminGhazi_49, Newrala_49, Cookiedough_49, Kazan_50, McFly_49, EricB_49, Pmask_49, Roksolana_50, Chartreuse_48, Neeharika16_48, CloudWang3_49, DaVinci_48
- Track 47 : ToneTone_46, Wiks_48, WunderPhul_49, Tucker_49, Hammer_50, Blue7_51, Zaka_49, Indra_52, Zulu_49, Rifter_50, Jeffabunny_49, Gruunaga_49
- Track 48 : Priamo_50, Jordennis_48
- Track 49 : Koko_50
- Track 50 : Blinn1_51
- Track 51 : Toaka_46

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

The start number called the most often in the published annotations is 6, it was called in 46 of the 99 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adzzy_49, Artemis2UCLA_49, Blue7_51, Candra_49, Caraxes_47, Changeling_46, Chartreuse_48, Che12_49, CloudWang3_49, Colin_47, Cookiedough_49, DaVinci_48, Dorothea_48, EricB_49, Gladiator_47, GreedyLawyer_49, Gruunaga_49, Hammer_50, Herbertwm_47, Indra_52, Isiphiwo_47, Jeffabunny_49, Jordennis_48, Jsquared_45, Kalpine_45, Kazan_50, Kipper29_49, Koduck_47, Koko_50, L5_46, McFly_49, Neeharika16_48, Newrala_49, Odin_46, Ph8s_49, Pmask_49, Priamo_50, Rifter_50, Roksolana_50, Serenity_47, SmellyB_49, SuperAwesome_49, SuperCallie99_48, Superchunk_46, SwirlSquare_52, TipsytheTRex_44, ToneTone_46, Tucker_49, VohminGhazi_49, WeiHuaDA_49, Wiks_48, WunderPhul_49, Zaka_49, Zulu_49,

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

- AN9_50, ANI8_50, Blinn1_51, C3_45, Garak_51, Helmet_51, Hexamo_49, Lilbunny_47, VC3_50, Yokurt_49,

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

- 20ES_49, AN3_49, Acolyte_43, AnnaL29_49, Anselm_48, ArcherNM_43, BabyBack_46, Bactobuster_46, Baehexic_46, BengiVuitton_48, BiancaTri92_47, BobSwaget_45, Buggy_49, Centaur_48, Deloris_47, EZMoney23_45, Equemioh13_48, Fameo_47, First_0048, Flare16_47, GaugeLDP_45, Heffalump_46, IronMan_47, Iwokeuplikedis_50, Jaan_47, Jerm_49, Landor_47, Larenn_46, Leogania_47, Lokk_46, Loser_49, Malec_47, MiculUcigas_47, Miko_44, NaSiaTalie_47, NicoleTera_46, NothingSpecial_45, Phaded_48, Pukovnik_46,

QueenB2_46, Rachaly_46, RedRock_49, TarsusIV_45, Toaka_46, Trixie_45, Trooper_48, Turbido_48, Updawg_48, VA6_47, WideWale_48,

Summary by start number:

Start 2:

- Found in 2 of 114 (1.8%) of genes in pham
- Manual Annotations of this start: 2 of 99
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BobSwaget_45 (A2), Lokk_46 (A2),

Start 4:

- Found in 44 of 114 (38.6%) of genes in pham
- Manual Annotations of this start: 3 of 99
- Called 13.6% of time when present
- Phage (with cluster) where this start called: Blinn1_51 (A6), Garak_51 (A6), Helmet_51 (A6), Hexamo_49 (A6), Lilbunny_47 (A6), Yokurt_49 (A6),

Start 5:

- Found in 41 of 114 (36.0%) of genes in pham
- Manual Annotations of this start: 36 of 99
- Called 97.6% of time when present
- Phage (with cluster) where this start called: 20ES_49 (A2), AN3_49 (A2), AN9_50 (A2), ANI8_50 (A2), Acolyte_43 (A2), AnnaL29_49 (A2), ArcherNM_43 (A2), BabyBack_46 (A2), Bactobuster_46 (A2), BengiVuitton_48 (A2), BiancaTri92_47 (A2), C3_45 (A2), Deloris_47 (A2), EZMoney23_45 (A2), Fameo_47 (A2), First_0048 (A2), GaugeLDP_45 (A2), Heffalump_46 (A2), IronMan_47 (A2), Iwokeuplikedis_50 (A2), Jaan_47 (A2), Jerm_49 (A2), Landor_47 (A2), Larenn_46 (A2), Leogania_47 (A2), Loser_49 (A2), Malec_47 (A2), Miko_44 (A2), NicoleTera_46 (A2), Phaded_48 (A2), Pukovnik_46 (A2), QueenB2_46 (A2), Rachaly_46 (A2), RedRock_49 (A2), TarsusIV_45 (A2), Trixie_45 (A2), Trooper_48 (A2), Turbido_48 (A2), VA6_47 (A2), VC3_50 (A2),

Start 6:

- Found in 64 of 114 (56.1%) of genes in pham
- Manual Annotations of this start: 46 of 99
- Called 84.4% of time when present
- Phage (with cluster) where this start called: Adzzy_49 (A2), Artemis2UCLA_49 (A6), Blue7_51 (A6), Candra_49 (A6), Caraxes_47 (A2), Changeling_46 (A2), Chartreuse_48 (A6), Che12_49 (A2), CloudWang3_49 (A6), Colin_47 (A2), Cookiedough_49 (A6), DaVinci_48 (A6), Dorothea_48 (A6), EricB_49 (A6), Gladiator_47 (A6), GreedyLawyer_49 (A6), Gruunaga_49 (A6), Hammer_50 (A6), Herbertwm_47 (A2), Indra_52 (A6), Isiphiwo_47 (A6), Jeffabunny_49 (A6), Jordennis_48 (A6), Jsquared_45 (A2), Kalpine_45 (A2), Kazan_50 (A6), Kipper29_49 (A6), Koduck_47 (A2), Koko_50 (A6), L5_46 (A2), McFly_49 (A6), Neeharika16_48 (A6), Newrala_49 (A6), Odin_46 (A2), Ph8s_49 (A2), Pmask_49 (A6), Priamo_50 (A6), Rifter_50 (A6), Roksolana_50 (A6), Serenity_47 (A2), SmellyB_49 (A6), SuperAwesome_49 (A6), SuperCallie99_48 (A6), Superchunk_46 (A2), SwirlSquare_52 (A2), TopsytheTRex_44 (A2), ToneTone_46 (A6), Tucker_49 (A6), VohminGhazi_49 (A6), WeiHuaDA_49 (A2), Wiks_48 (A6), WunderPhul_49 (A6), Zaka_49 (A6), Zulu_49 (A6),

Start 7:

- Found in 29 of 114 (25.4%) of genes in pham
- Manual Annotations of this start: 11 of 99
- Called 37.9% of time when present
- Phage (with cluster) where this start called: Anselm_48 (A2), Baehexic_46 (A2), Buggy_49 (A2), Centaur_48 (A2), Equemioh13_48 (A2), Flare16_47 (A2), MiculUcigas_47 (A2), NaSiaTalie_47 (A2), NothingSpecial_45 (A2), Updawg_48 (A2), WideWale_48 (A2),

Start 13:

- Found in 1 of 114 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 99
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Toaka_46 (A9),

Summary by clusters:

There are 3 clusters represented in this pham: A9, A2, A6,

Info for manual annotations of cluster A2:

- Start number 2 was manually annotated 2 times for cluster A2.
- Start number 5 was manually annotated 36 times for cluster A2.
- Start number 6 was manually annotated 12 times for cluster A2.
- Start number 7 was manually annotated 11 times for cluster A2.

Info for manual annotations of cluster A6:

- Start number 4 was manually annotated 3 times for cluster A6.
- Start number 6 was manually annotated 34 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 13 was manually annotated 1 time for cluster A9.

Gene Information:

Gene: 20ES_49 Start: 32435, Stop: 32013, Start Num: 5

Candidate Starts for 20ES_49:

(Start: 5 @32435 has 36 MA's), (Start: 7 @32426 has 11 MA's), (55, 32060),

Gene: AN3_49 Start: 32806, Stop: 32393, Start Num: 5

Candidate Starts for AN3_49:

(Start: 5 @32806 has 36 MA's), (22, 32716), (26, 32707), (35, 32671), (45, 32605), (55, 32440),

Gene: AN9_50 Start: 32346, Stop: 31912, Start Num: 5

Candidate Starts for AN9_50:

(Start: 5 @32346 has 36 MA's), (Start: 6 @32343 has 46 MA's), (21, 32244), (31, 32202), (38, 32178), (51, 32079), (53, 31992), (55, 31959),

Gene: ANI8_50 Start: 32346, Stop: 31912, Start Num: 5

Candidate Starts for ANI8_50:

(Start: 5 @32346 has 36 MA's), (Start: 6 @32343 has 46 MA's), (21, 32244), (31, 32202), (38, 32178), (51, 32079), (53, 31992), (55, 31959),

Gene: Acolyte_43 Start: 31589, Stop: 31182, Start Num: 5

Candidate Starts for Acolyte_43:

(Start: 5 @31589 has 36 MA's), (18, 31532), (24, 31484), (49, 31358), (55, 31229),

Gene: Adzzy_49 Start: 31071, Stop: 30643, Start Num: 6

Candidate Starts for Adzzy_49:

(3, 31107), (Start: 6 @31071 has 46 MA's), (53, 30723), (55, 30690),

Gene: AnnaL29_49 Start: 33146, Stop: 32724, Start Num: 5

Candidate Starts for AnnaL29_49:

(Start: 5 @33146 has 36 MA's), (Start: 7 @33137 has 11 MA's), (16, 33080), (23, 33044), (55, 32771),

Gene: Anselm_48 Start: 32523, Stop: 32110, Start Num: 7

Candidate Starts for Anselm_48:

(Start: 5 @32532 has 36 MA's), (Start: 7 @32523 has 11 MA's), (9, 32487), (19, 32445), (55, 32157),

Gene: ArcherNM_43 Start: 32185, Stop: 31778, Start Num: 5

Candidate Starts for ArcherNM_43:

(Start: 5 @32185 has 36 MA's), (21, 32107), (24, 32089), (47, 31972), (55, 31825), (56, 31798),

Gene: Artemis2UCLA_49 Start: 30834, Stop: 30406, Start Num: 6

Candidate Starts for Artemis2UCLA_49:

(Start: 4 @30861 has 3 MA's), (Start: 6 @30834 has 46 MA's), (20, 30738), (29, 30702), (46, 30612), (48, 30585), (49, 30582), (56, 30426),

Gene: BabyBack_46 Start: 32865, Stop: 32410, Start Num: 5

Candidate Starts for BabyBack_46:

(Start: 5 @32865 has 36 MA's), (8, 32838), (26, 32721), (44, 32625), (49, 32589), (52, 32577), (55, 32457), (56, 32430),

Gene: Bactobuster_46 Start: 33096, Stop: 32677, Start Num: 5

Candidate Starts for Bactobuster_46:

(Start: 5 @33096 has 36 MA's), (21, 33015), (36, 32952), (40, 32934), (47, 32880), (55, 32724),

Gene: Baehexic_46 Start: 32303, Stop: 31869, Start Num: 7

Candidate Starts for Baehexic_46:

(Start: 7 @32303 has 11 MA's), (21, 32204), (30, 32168), (55, 31916),

Gene: BengiVuitton_48 Start: 32388, Stop: 31975, Start Num: 5

Candidate Starts for BengiVuitton_48:

(Start: 5 @32388 has 36 MA's), (22, 32298), (26, 32289), (35, 32253), (45, 32187), (55, 32022),

Gene: BiancaTri92_47 Start: 32931, Stop: 32509, Start Num: 5

Candidate Starts for BiancaTri92_47:

(Start: 5 @32931 has 36 MA's), (Start: 7 @32922 has 11 MA's), (19, 32844), (55, 32556),

Gene: Blinn1_51 Start: 31121, Stop: 30666, Start Num: 4

Candidate Starts for Blinn1_51:

(Start: 4 @31121 has 3 MA's), (Start: 6 @31094 has 46 MA's), (20, 30998), (29, 30962), (48, 30845), (55, 30713),

Gene: Blue7_51 Start: 30930, Stop: 30502, Start Num: 6

Candidate Starts for Blue7_51:

(Start: 4 @30957 has 3 MA's), (Start: 6 @30930 has 46 MA's), (20, 30834), (43, 30720), (49, 30678), (56, 30522),

Gene: BobSwaget_45 Start: 31896, Stop: 31399, Start Num: 2

Candidate Starts for BobSwaget_45:

(Start: 2 @31896 has 2 MA's), (28, 31704), (31, 31692), (44, 31617), (55, 31446),

Gene: Buggy_49 Start: 32673, Stop: 32239, Start Num: 7

Candidate Starts for Buggy_49:

(Start: 7 @32673 has 11 MA's), (21, 32574), (30, 32538), (55, 32286),

Gene: C3_45 Start: 32346, Stop: 31912, Start Num: 5

Candidate Starts for C3_45:

(Start: 5 @32346 has 36 MA's), (Start: 6 @32343 has 46 MA's), (21, 32244), (31, 32202), (38, 32178), (51, 32079), (53, 31992), (55, 31959),

Gene: Candra_49 Start: 31173, Stop: 30745, Start Num: 6

Candidate Starts for Candra_49:

(Start: 4 @31200 has 3 MA's), (Start: 6 @31173 has 46 MA's), (20, 31077), (29, 31041), (46, 30951), (48, 30924), (49, 30921), (56, 30765),

Gene: Caraxes_47 Start: 30723, Stop: 30316, Start Num: 6

Candidate Starts for Caraxes_47:

(Start: 6 @30723 has 46 MA's), (26, 30624), (47, 30510), (53, 30396), (55, 30363),

Gene: Centaur_48 Start: 32520, Stop: 32086, Start Num: 7

Candidate Starts for Centaur_48:

(Start: 7 @32520 has 11 MA's), (21, 32421), (30, 32385), (55, 32133),

Gene: Changeling_46 Start: 32725, Stop: 32312, Start Num: 6

Candidate Starts for Changeling_46:

(Start: 6 @32725 has 46 MA's), (19, 32647), (32, 32602), (54, 32371), (55, 32359), (56, 32332),

Gene: Chartreuse_48 Start: 30533, Stop: 30105, Start Num: 6

Candidate Starts for Chartreuse_48:

(Start: 4 @30560 has 3 MA's), (Start: 6 @30533 has 46 MA's), (20, 30437), (29, 30401), (46, 30311), (48, 30284), (49, 30281), (56, 30125),

Gene: Che12_49 Start: 31155, Stop: 30727, Start Num: 6

Candidate Starts for Che12_49:

(Start: 6 @31155 has 46 MA's), (22, 31044), (36, 30993), (53, 30807), (55, 30774),

Gene: CloudWang3_49 Start: 30934, Stop: 30506, Start Num: 6

Candidate Starts for CloudWang3_49:

(Start: 4 @30961 has 3 MA's), (Start: 6 @30934 has 46 MA's), (20, 30838), (29, 30802), (46, 30712), (48, 30685), (49, 30682), (56, 30526),

Gene: Colin_47 Start: 32497, Stop: 32084, Start Num: 6

Candidate Starts for Colin_47:

(Start: 6 @32497 has 46 MA's), (19, 32419), (55, 32131),

Gene: Cookiedough_49 Start: 31149, Stop: 30721, Start Num: 6

Candidate Starts for Cookiedough_49:

(Start: 4 @31176 has 3 MA's), (Start: 6 @31149 has 46 MA's), (20, 31053), (29, 31017), (46, 30927), (48, 30900), (49, 30897), (56, 30741),

Gene: DaVinci_48 Start: 30587, Stop: 30159, Start Num: 6

Candidate Starts for DaVinci_48:

(Start: 4 @30614 has 3 MA's), (Start: 6 @30587 has 46 MA's), (20, 30491), (29, 30455), (46, 30365), (48, 30338), (49, 30335), (56, 30179),

Gene: Deloris_47 Start: 32057, Stop: 31644, Start Num: 5

Candidate Starts for Deloris_47:

(Start: 5 @32057 has 36 MA's), (22, 31967), (26, 31958), (35, 31922), (45, 31856), (55, 31691),

Gene: Dorothea_48 Start: 31156, Stop: 30728, Start Num: 6

Candidate Starts for Dorothea_48:

(Start: 4 @31183 has 3 MA's), (Start: 6 @31156 has 46 MA's), (20, 31060), (29, 31024), (46, 30934), (48, 30907), (49, 30904), (56, 30748),

Gene: EZMoney23_45 Start: 32055, Stop: 31642, Start Num: 5

Candidate Starts for EZMoney23_45:

(Start: 5 @32055 has 36 MA's), (19, 31977), (24, 31959), (32, 31932), (55, 31689),

Gene: Equemioh13_48 Start: 32422, Stop: 31988, Start Num: 7

Candidate Starts for Equemioh13_48:

(Start: 7 @32422 has 11 MA's), (21, 32323), (30, 32287), (55, 32035),

Gene: EricB_49 Start: 31130, Stop: 30702, Start Num: 6

Candidate Starts for EricB_49:

(Start: 4 @31157 has 3 MA's), (Start: 6 @31130 has 46 MA's), (20, 31034), (29, 30998), (46, 30908), (48, 30881), (49, 30878), (56, 30722),

Gene: Fameo_47 Start: 32426, Stop: 32004, Start Num: 5

Candidate Starts for Fameo_47:

(Start: 5 @32426 has 36 MA's), (Start: 7 @32417 has 11 MA's), (9, 32381), (19, 32339), (55, 32051),

Gene: First_0048 Start: 32311, Stop: 31889, Start Num: 5

Candidate Starts for First_0048:

(Start: 5 @32311 has 36 MA's), (Start: 7 @32302 has 11 MA's), (55, 31936),

Gene: Flare16_47 Start: 32181, Stop: 31747, Start Num: 7

Candidate Starts for Flare16_47:

(Start: 7 @32181 has 11 MA's), (21, 32082), (30, 32046), (55, 31794),

Gene: Garak_51 Start: 31328, Stop: 30873, Start Num: 4

Candidate Starts for Garak_51:

(Start: 4 @31328 has 3 MA's), (Start: 6 @31301 has 46 MA's), (20, 31205), (43, 31091), (49, 31049), (56, 30893),

Gene: GaugeLDP_45 Start: 32488, Stop: 32036, Start Num: 5

Candidate Starts for GaugeLDP_45:

(Start: 4 @32512 has 3 MA's), (Start: 5 @32488 has 36 MA's), (12, 32428), (26, 32344), (55, 32083),

Gene: Gladiator_47 Start: 30461, Stop: 30033, Start Num: 6

Candidate Starts for Gladiator_47:

(Start: 4 @30488 has 3 MA's), (Start: 6 @30461 has 46 MA's), (20, 30365), (29, 30329), (46, 30239), (48, 30212), (49, 30209), (56, 30053),

Gene: GreedyLawyer_49 Start: 31137, Stop: 30709, Start Num: 6

Candidate Starts for GreedyLawyer_49:

(Start: 4 @31164 has 3 MA's), (Start: 6 @31137 has 46 MA's), (20, 31041), (29, 31005), (46, 30915), (48, 30888), (49, 30885), (56, 30729),

Gene: Gruunaga_49 Start: 31137, Stop: 30709, Start Num: 6

Candidate Starts for Gruunaga_49:

(Start: 4 @31164 has 3 MA's), (Start: 6 @31137 has 46 MA's), (20, 31041), (43, 30927), (49, 30885), (56, 30729),

Gene: Hammer_50 Start: 30740, Stop: 30312, Start Num: 6

Candidate Starts for Hammer_50:

(Start: 4 @30767 has 3 MA's), (Start: 6 @30740 has 46 MA's), (20, 30644), (43, 30530), (49, 30488), (56, 30332),

Gene: Heffalump_46 Start: 32894, Stop: 32472, Start Num: 5

Candidate Starts for Heffalump_46:

(Start: 5 @32894 has 36 MA's), (Start: 7 @32885 has 11 MA's), (9, 32849), (19, 32807), (55, 32519),

Gene: Helmet_51 Start: 31328, Stop: 30873, Start Num: 4

Candidate Starts for Helmet_51:

(Start: 4 @31328 has 3 MA's), (Start: 6 @31301 has 46 MA's), (20, 31205), (43, 31091), (49, 31049), (56, 30893),

Gene: Herbertwm_47 Start: 31973, Stop: 31524, Start Num: 6

Candidate Starts for Herbertwm_47:

(Start: 6 @31973 has 46 MA's), (12, 31916), (20, 31856), (48, 31703), (50, 31697), (53, 31604), (56, 31544),

Gene: Hexamo_49 Start: 30949, Stop: 30494, Start Num: 4

Candidate Starts for Hexamo_49:

(Start: 4 @30949 has 3 MA's), (Start: 6 @30922 has 46 MA's), (20, 30826), (43, 30712), (49, 30670), (56, 30514),

Gene: Indra_52 Start: 31302, Stop: 30874, Start Num: 6

Candidate Starts for Indra_52:

(Start: 4 @31329 has 3 MA's), (Start: 6 @31302 has 46 MA's), (20, 31206), (43, 31092), (49, 31050), (56, 30894),

Gene: IronMan_47 Start: 33279, Stop: 32860, Start Num: 5

Candidate Starts for IronMan_47:

(Start: 5 @33279 has 36 MA's), (21, 33198), (37, 33132), (40, 33117), (47, 33063), (55, 32907), (56, 32880),

Gene: Isiphiwo_47 Start: 30674, Stop: 30246, Start Num: 6

Candidate Starts for Isiphiwo_47:

(Start: 4 @30701 has 3 MA's), (Start: 6 @30674 has 46 MA's), (20, 30578), (29, 30542), (46, 30452), (48, 30425), (49, 30422), (56, 30266),

Gene: Iwokeuplikedis_50 Start: 32216, Stop: 31788, Start Num: 5

Candidate Starts for Iwokeuplikedis_50:
(Start: 5 @32216 has 36 MA's), (48, 31967), (55, 31835),

Gene: Jaan_47 Start: 33445, Stop: 33047, Start Num: 5
Candidate Starts for Jaan_47:
(Start: 5 @33445 has 36 MA's), (25, 33364), (36, 33322), (47, 33250), (55, 33094),

Gene: Jeffabunny_49 Start: 30958, Stop: 30530, Start Num: 6
Candidate Starts for Jeffabunny_49:
(Start: 4 @30985 has 3 MA's), (Start: 6 @30958 has 46 MA's), (20, 30862), (43, 30748), (49, 30706),
(56, 30550),

Gene: Jerm_49 Start: 32674, Stop: 32252, Start Num: 5
Candidate Starts for Jerm_49:
(Start: 5 @32674 has 36 MA's), (Start: 7 @32665 has 11 MA's), (23, 32572), (32, 32542), (55, 32299),

Gene: Jordennis_48 Start: 30594, Stop: 30166, Start Num: 6
Candidate Starts for Jordennis_48:
(Start: 4 @30621 has 3 MA's), (Start: 6 @30594 has 46 MA's), (20, 30498), (29, 30462), (46, 30372),
(48, 30345), (49, 30342),

Gene: Jsquared_45 Start: 31025, Stop: 30618, Start Num: 6
Candidate Starts for Jsquared_45:
(Start: 6 @31025 has 46 MA's), (26, 30926), (31, 30905), (53, 30698), (55, 30665),

Gene: Kalpine_45 Start: 32395, Stop: 31982, Start Num: 6
Candidate Starts for Kalpine_45:
(Start: 6 @32395 has 46 MA's), (19, 32317), (55, 32029),

Gene: Kazan_50 Start: 31143, Stop: 30715, Start Num: 6
Candidate Starts for Kazan_50:
(Start: 4 @31170 has 3 MA's), (Start: 6 @31143 has 46 MA's), (20, 31047), (29, 31011), (46, 30921),
(48, 30894), (49, 30891), (56, 30735),

Gene: Kipper29_49 Start: 31156, Stop: 30728, Start Num: 6
Candidate Starts for Kipper29_49:
(Start: 4 @31183 has 3 MA's), (Start: 6 @31156 has 46 MA's), (20, 31060), (29, 31024), (46, 30934),
(48, 30907), (49, 30904), (56, 30748),

Gene: Koduck_47 Start: 31317, Stop: 30889, Start Num: 6
Candidate Starts for Koduck_47:
(Start: 6 @31317 has 46 MA's), (15, 31263), (19, 31239), (26, 31197), (31, 31176), (36, 31155), (41,
31134), (53, 30969), (55, 30936),

Gene: Koko_50 Start: 31279, Stop: 30851, Start Num: 6
Candidate Starts for Koko_50:
(Start: 4 @31306 has 3 MA's), (Start: 6 @31279 has 46 MA's), (20, 31183), (49, 31027), (56, 30871),

Gene: L5_46 Start: 31389, Stop: 30961, Start Num: 6
Candidate Starts for L5_46:
(Start: 6 @31389 has 46 MA's), (15, 31335), (19, 31311), (26, 31269), (31, 31248), (36, 31227), (41,
31206), (53, 31041), (55, 31008),

Gene: Landor_47 Start: 33357, Stop: 32938, Start Num: 5

Candidate Starts for Landor_47:

(Start: 5 @33357 has 36 MA's), (21, 33276), (36, 33213), (47, 33141), (55, 32985),

Gene: Larenn_46 Start: 32287, Stop: 31865, Start Num: 5

Candidate Starts for Larenn_46:

(Start: 5 @32287 has 36 MA's), (Start: 7 @32278 has 11 MA's), (16, 32221), (28, 32170), (55, 31912),

Gene: Leogania_47 Start: 33298, Stop: 32876, Start Num: 5

Candidate Starts for Leogania_47:

(Start: 5 @33298 has 36 MA's), (Start: 7 @33289 has 11 MA's), (19, 33211), (55, 32923),

Gene: Lilbunny_47 Start: 30959, Stop: 30504, Start Num: 4

Candidate Starts for Lilbunny_47:

(Start: 4 @30959 has 3 MA's), (Start: 6 @30932 has 46 MA's), (20, 30836), (43, 30722), (49, 30680), (56, 30524),

Gene: Lokk_46 Start: 32421, Stop: 31924, Start Num: 2

Candidate Starts for Lokk_46:

(Start: 2 @32421 has 2 MA's), (28, 32229), (31, 32217), (42, 32154), (44, 32142), (55, 31971),

Gene: Loser_49 Start: 33095, Stop: 32673, Start Num: 5

Candidate Starts for Loser_49:

(1, 33422), (Start: 5 @33095 has 36 MA's), (Start: 7 @33086 has 11 MA's), (16, 33029), (23, 32993), (55, 32720),

Gene: Malec_47 Start: 32851, Stop: 32429, Start Num: 5

Candidate Starts for Malec_47:

(Start: 5 @32851 has 36 MA's), (Start: 7 @32842 has 11 MA's), (16, 32785), (28, 32734), (55, 32476),

Gene: McFly_49 Start: 31137, Stop: 30709, Start Num: 6

Candidate Starts for McFly_49:

(Start: 4 @31164 has 3 MA's), (Start: 6 @31137 has 46 MA's), (20, 31041), (29, 31005), (46, 30915), (48, 30888), (49, 30885), (56, 30729),

Gene: MiculUcigas_47 Start: 32081, Stop: 31647, Start Num: 7

Candidate Starts for MiculUcigas_47:

(Start: 7 @32081 has 11 MA's), (21, 31982), (30, 31946), (55, 31694),

Gene: Miko_44 Start: 32243, Stop: 31821, Start Num: 5

Candidate Starts for Miko_44:

(Start: 5 @32243 has 36 MA's), (Start: 7 @32234 has 11 MA's), (28, 32126), (31, 32114), (44, 32039), (55, 31868),

Gene: NaSiaTalie_47 Start: 32178, Stop: 31744, Start Num: 7

Candidate Starts for NaSiaTalie_47:

(Start: 7 @32178 has 11 MA's), (21, 32079), (30, 32043), (55, 31791),

Gene: Neeharika16_48 Start: 30597, Stop: 30169, Start Num: 6

Candidate Starts for Neeharika16_48:

(Start: 4 @30624 has 3 MA's), (Start: 6 @30597 has 46 MA's), (20, 30501), (29, 30465), (46, 30375), (48, 30348), (49, 30345), (56, 30189),

Gene: Newrala_49 Start: 31148, Stop: 30720, Start Num: 6
Candidate Starts for Newrala_49:
(Start: 4 @31175 has 3 MA's), (Start: 6 @31148 has 46 MA's), (20, 31052), (29, 31016), (46, 30926),
(48, 30899), (49, 30896), (56, 30740),

Gene: NicoleTera_46 Start: 32449, Stop: 32027, Start Num: 5
Candidate Starts for NicoleTera_46:
(Start: 5 @32449 has 36 MA's), (Start: 7 @32440 has 11 MA's), (10, 32401), (35, 32305), (56, 32047),

Gene: NothingSpecial_45 Start: 32705, Stop: 32271, Start Num: 7
Candidate Starts for NothingSpecial_45:
(Start: 7 @32705 has 11 MA's), (21, 32606), (55, 32318),

Gene: Odin_46 Start: 30872, Stop: 30465, Start Num: 6
Candidate Starts for Odin_46:
(Start: 6 @30872 has 46 MA's), (26, 30773), (53, 30545), (55, 30512),

Gene: Ph8s_49 Start: 31506, Stop: 31078, Start Num: 6
Candidate Starts for Ph8s_49:
(3, 31542), (Start: 6 @31506 has 46 MA's), (53, 31158), (55, 31125),

Gene: Phaded_48 Start: 33339, Stop: 32920, Start Num: 5
Candidate Starts for Phaded_48:
(Start: 5 @33339 has 36 MA's), (21, 33258), (36, 33195), (40, 33177), (47, 33123), (55, 32967),

Gene: Pmask_49 Start: 31149, Stop: 30721, Start Num: 6
Candidate Starts for Pmask_49:
(Start: 4 @31176 has 3 MA's), (Start: 6 @31149 has 46 MA's), (20, 31053), (29, 31017), (46, 30927),
(48, 30900), (49, 30897), (56, 30741),

Gene: Priamo_50 Start: 30766, Stop: 30338, Start Num: 6
Candidate Starts for Priamo_50:
(Start: 4 @30793 has 3 MA's), (Start: 6 @30766 has 46 MA's), (20, 30670), (29, 30634), (46, 30544),
(48, 30517), (49, 30514),

Gene: Pukovnik_46 Start: 32944, Stop: 32528, Start Num: 5
Candidate Starts for Pukovnik_46:
(Start: 5 @32944 has 36 MA's), (11, 32914), (21, 32866), (32, 32821), (42, 32761), (47, 32731), (55,
32575),

Gene: QueenB2_46 Start: 32110, Stop: 31688, Start Num: 5
Candidate Starts for QueenB2_46:
(Start: 5 @32110 has 36 MA's), (Start: 7 @32101 has 11 MA's), (9, 32065), (19, 32023), (55, 31735),

Gene: Rachaly_46 Start: 32420, Stop: 31998, Start Num: 5
Candidate Starts for Rachaly_46:
(Start: 5 @32420 has 36 MA's), (Start: 7 @32411 has 11 MA's), (28, 32303), (31, 32291), (44, 32216),
(55, 32045),

Gene: RedRock_49 Start: 33308, Stop: 32886, Start Num: 5
Candidate Starts for RedRock_49:
(Start: 5 @33308 has 36 MA's), (Start: 7 @33299 has 11 MA's), (16, 33242), (23, 33206), (55, 32933),

Gene: Rifter_50 Start: 30703, Stop: 30275, Start Num: 6
Candidate Starts for Rifter_50:
(Start: 4 @30730 has 3 MA's), (Start: 6 @30703 has 46 MA's), (20, 30607), (43, 30493), (49, 30451),
(56, 30295),

Gene: Roksolana_50 Start: 31185, Stop: 30757, Start Num: 6
Candidate Starts for Roksolana_50:
(Start: 4 @31212 has 3 MA's), (Start: 6 @31185 has 46 MA's), (20, 31089), (29, 31053), (46, 30963),
(48, 30936), (49, 30933), (56, 30777),

Gene: Serenity_47 Start: 31249, Stop: 30842, Start Num: 6
Candidate Starts for Serenity_47:
(Start: 6 @31249 has 46 MA's), (42, 31066), (48, 31021), (53, 30922), (55, 30889),

Gene: SmellyB_49 Start: 31137, Stop: 30709, Start Num: 6
Candidate Starts for SmellyB_49:
(Start: 4 @31164 has 3 MA's), (Start: 6 @31137 has 46 MA's), (20, 31041), (29, 31005), (46, 30915),
(48, 30888), (49, 30885), (56, 30729),

Gene: SuperAwesome_49 Start: 31148, Stop: 30720, Start Num: 6
Candidate Starts for SuperAwesome_49:
(Start: 4 @31175 has 3 MA's), (Start: 6 @31148 has 46 MA's), (20, 31052), (29, 31016), (46, 30926),
(48, 30899), (49, 30896), (56, 30740),

Gene: SuperCallie99_48 Start: 31021, Stop: 30593, Start Num: 6
Candidate Starts for SuperCallie99_48:
(Start: 4 @31048 has 3 MA's), (Start: 6 @31021 has 46 MA's), (20, 30925), (29, 30889), (46, 30799),
(48, 30772), (49, 30769), (56, 30613),

Gene: Superchunk_46 Start: 30723, Stop: 30316, Start Num: 6
Candidate Starts for Superchunk_46:
(Start: 6 @30723 has 46 MA's), (26, 30624), (47, 30510), (53, 30396), (55, 30363),

Gene: SwirlSquare_52 Start: 31390, Stop: 30980, Start Num: 6
Candidate Starts for SwirlSquare_52:
(Start: 6 @31390 has 46 MA's), (22, 31300), (27, 31285), (34, 31258), (38, 31246), (39, 31240), (44,
31195), (53, 31060), (55, 31027),

Gene: TarsusIV_45 Start: 31964, Stop: 31542, Start Num: 5
Candidate Starts for TarsusIV_45:
(Start: 5 @31964 has 36 MA's), (28, 31847), (31, 31835), (55, 31589),

Gene: TipsytheTRex_44 Start: 31322, Stop: 30915, Start Num: 6
Candidate Starts for TipsytheTRex_44:
(Start: 6 @31322 has 46 MA's), (42, 31139), (53, 30995), (55, 30962),

Gene: Toaka_46 Start: 31676, Stop: 31308, Start Num: 13
Candidate Starts for Toaka_46:
(Start: 13 @31676 has 1 MA's), (17, 31652), (24, 31610), (56, 31328), (57, 31319),

Gene: ToneTone_46 Start: 30864, Stop: 30436, Start Num: 6
Candidate Starts for ToneTone_46:

(Start: 4 @30891 has 3 MA's), (Start: 6 @30864 has 46 MA's), (20, 30768), (43, 30654), (49, 30612), (56, 30456),

Gene: Trixie_45 Start: 32233, Stop: 31820, Start Num: 5

Candidate Starts for Trixie_45:

(Start: 5 @32233 has 36 MA's), (19, 32155), (24, 32137), (55, 31867),

Gene: Trooper_48 Start: 32526, Stop: 32104, Start Num: 5

Candidate Starts for Trooper_48:

(Start: 5 @32526 has 36 MA's), (Start: 7 @32517 has 11 MA's), (14, 32469), (19, 32439), (33, 32391), (35, 32382), (55, 32151),

Gene: Tucker_49 Start: 30751, Stop: 30323, Start Num: 6

Candidate Starts for Tucker_49:

(Start: 4 @30778 has 3 MA's), (Start: 6 @30751 has 46 MA's), (20, 30655), (43, 30541), (49, 30499), (56, 30343),

Gene: Turbido_48 Start: 32560, Stop: 32138, Start Num: 5

Candidate Starts for Turbido_48:

(Start: 5 @32560 has 36 MA's), (Start: 7 @32551 has 11 MA's), (23, 32458), (32, 32428), (55, 32185),

Gene: Updawg_48 Start: 32422, Stop: 31988, Start Num: 7

Candidate Starts for Updawg_48:

(Start: 7 @32422 has 11 MA's), (21, 32323), (30, 32287), (55, 32035),

Gene: VA6_47 Start: 32280, Stop: 31867, Start Num: 5

Candidate Starts for VA6_47:

(Start: 5 @32280 has 36 MA's), (22, 32190), (26, 32181), (35, 32145), (45, 32079), (55, 31914),

Gene: VC3_50 Start: 32346, Stop: 31912, Start Num: 5

Candidate Starts for VC3_50:

(Start: 5 @32346 has 36 MA's), (Start: 6 @32343 has 46 MA's), (21, 32244), (31, 32202), (38, 32178), (51, 32079), (53, 31992), (55, 31959),

Gene: VohminGhazi_49 Start: 31138, Stop: 30710, Start Num: 6

Candidate Starts for VohminGhazi_49:

(Start: 4 @31165 has 3 MA's), (Start: 6 @31138 has 46 MA's), (20, 31042), (29, 31006), (46, 30916), (48, 30889), (49, 30886), (56, 30730),

Gene: WeiHuaDA_49 Start: 33119, Stop: 32706, Start Num: 6

Candidate Starts for WeiHuaDA_49:

(Start: 6 @33119 has 46 MA's), (19, 33041), (31, 32999), (55, 32753),

Gene: WideWale_48 Start: 32422, Stop: 31988, Start Num: 7

Candidate Starts for WideWale_48:

(Start: 7 @32422 has 11 MA's), (21, 32323), (30, 32287), (55, 32035),

Gene: Wiks_48 Start: 30932, Stop: 30504, Start Num: 6

Candidate Starts for Wiks_48:

(Start: 4 @30959 has 3 MA's), (Start: 6 @30932 has 46 MA's), (20, 30836), (43, 30722), (49, 30680), (56, 30524),

Gene: WunderPhul_49 Start: 30930, Stop: 30502, Start Num: 6

Candidate Starts for WunderPhul_49:

(Start: 4 @30957 has 3 MA's), (Start: 6 @30930 has 46 MA's), (20, 30834), (43, 30720), (49, 30678), (56, 30522),

Gene: Yokurt_49 Start: 30959, Stop: 30504, Start Num: 4

Candidate Starts for Yokurt_49:

(Start: 4 @30959 has 3 MA's), (Start: 6 @30932 has 46 MA's), (20, 30836), (43, 30722), (49, 30680), (56, 30524),

Gene: Zaka_49 Start: 30932, Stop: 30504, Start Num: 6

Candidate Starts for Zaka_49:

(Start: 4 @30959 has 3 MA's), (Start: 6 @30932 has 46 MA's), (20, 30836), (43, 30722), (49, 30680), (56, 30524),

Gene: Zulu_49 Start: 30732, Stop: 30304, Start Num: 6

Candidate Starts for Zulu_49:

(Start: 4 @30759 has 3 MA's), (Start: 6 @30732 has 46 MA's), (20, 30636), (43, 30522), (49, 30480), (56, 30324),