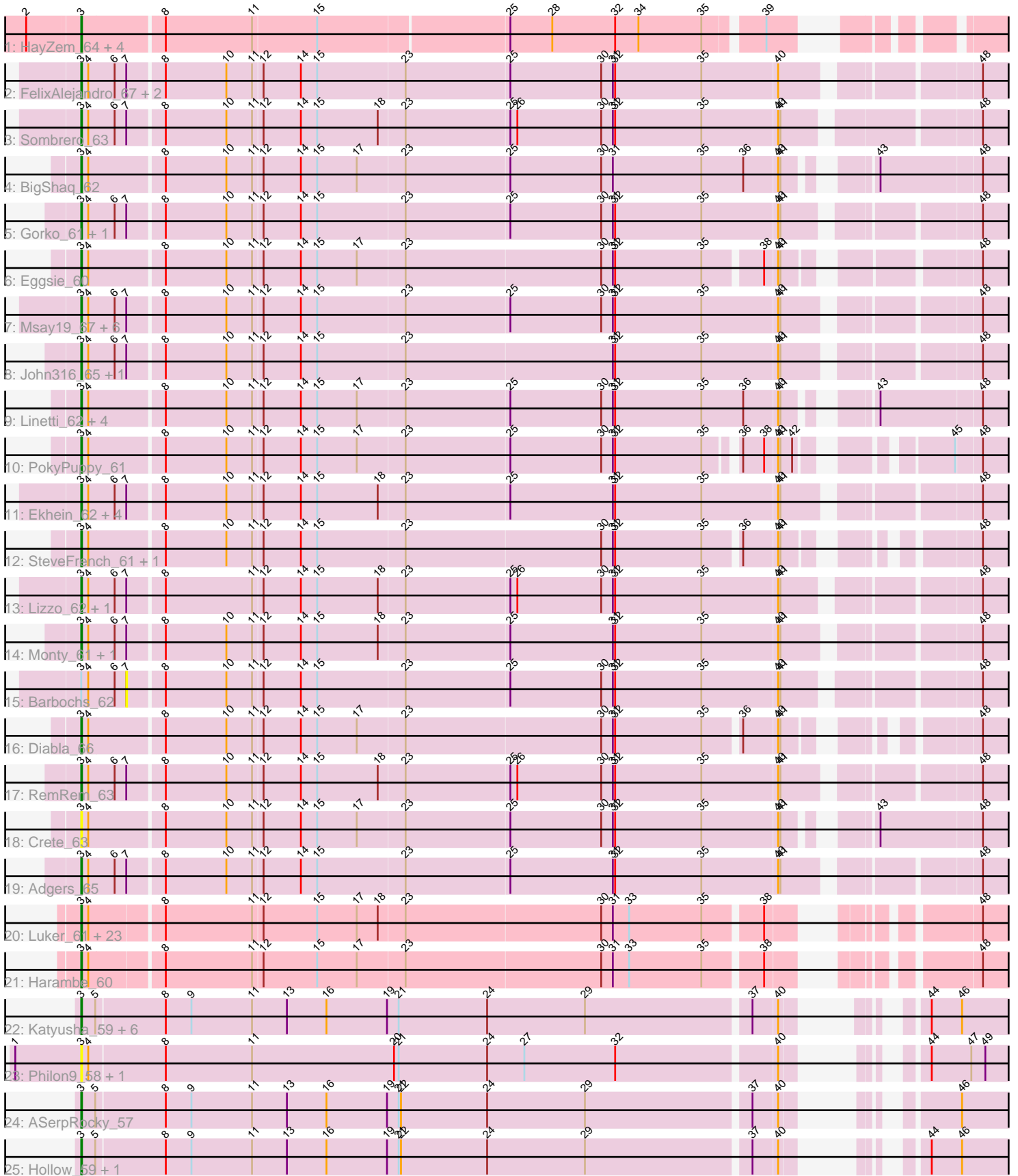


Pham 224512



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 224512 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224512 has 81 members, 12 are drafts.

Phages represented in each track:

- Track 1 : HayZem_64, Amore2_64, Austin_63, GTE7_52, GMA7_53
- Track 2 : FelixAlejandro_67, Butterball_65, Boneham_66
- Track 3 : Sombrero_63
- Track 4 : BigShaq_62
- Track 5 : Gorko_61, Breezic_62
- Track 6 : Eggsie_60
- Track 7 : Msay19_67, Beaver_65, Poland_67, Hotorobo_62, CinnamonToast_68, BirksAndSocks_67, Jellybones_64
- Track 8 : John316_65, GourdThymes_62
- Track 9 : Linetti_62, Dakiti_63, PierreThree_61, Chelms_62, BenoitCattle_62
- Track 10 : PokyPuppy_61
- Track 11 : Ekhein_62, Worcestershire_62, Exiguo_61, Flakey_61, Sam12_61
- Track 12 : SteveFrench_61, RoyalG_62
- Track 13 : Lizzo_62, CathyBurgh_61
- Track 14 : Monty_61, Squibbles_61
- Track 15 : Barbochs_62
- Track 16 : Diabla_66
- Track 17 : RemRem_63
- Track 18 : Crete_63
- Track 19 : Adgers_65
- Track 20 : Luker_61, GalacticEye_60, Bianmat_60, Guillaume_60, Teal_60, Newt_61, Hello_60, Berries_60, Charianelly_60, Anamika_60, Shelley_60, Jams_60, MrWormie_60, Damp_60, Hail2Pitt_59, Lahirium_60, Neoevie_60, Minos_61, Lidong_60, Woes_60, Nimi13_60, Kaseim_60, Jormungandr_60, Sticker17_60
- Track 21 : Harambe_60
- Track 22 : Katyusha_59, Benczkowski14_59, Niagara_59, Tredge_59, Teatealatte_60, Teech_58, Kvothe_58
- Track 23 : Philon9_58, Vitaenoi_58
- Track 24 : ASerpRocky_57
- Track 25 : Hollow_59, Demosthenes_57

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

The start number called the most often in the published annotations is 3, it was called in 69 of the 69 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ASerpRocky_57, Adgers_65, Amore2_64, Anamika_60, Austin_63, Beaver_65, Benczkowski14_59, BenoitCattle_62, Berries_60, Bianmat_60, BigShaq_62, BirksAndSocks_67, Boneham_66, Breezic_62, Butterball_65, CathyBurgh_61, Charianelly_60, Chelms_62, CinnamonToast_68, Crete_63, Dakiti_63, Damp_60, Demosthenes_57, Diabla_66, Eggsie_60, Ekhein_62, Exiguo_61, FelixAlejandro_67, Flakey_61, GMA7_53, GTE7_52, GalacticEye_60, Gorko_61, GourdThymes_62, Guillaume_60, Hail2Pitt_59, Harambe_60, HayZem_64, Hello_60, Hollow_59, Hotorobo_62, Jams_60, Jellybones_64, John316_65, Jormungandr_60, Kaseim_60, Katyusha_59, Kvothe_58, Lahirium_60, Lidong_60, Linetti_62, Lizzo_62, Luker_61, Minos_61, Monty_61, MrWormie_60, Msay19_67, Neoevie_60, Newt_61, Niagara_59, Nimi13_60, Philon9_58, PierreThree_61, PokyPuppy_61, Poland_67, RemRem_63, RoyalG_62, Sam12_61, Shelley_60, Sombrero_63, Squibbles_61, SteveFrench_61, Sticker17_60, Teal_60, Teatealatte_60, Teech_58, Tredge_59, Vitaenoi_58, Woes_60, Worcestershire_62,

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

- Barbochs_62,

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

-

Summary by start number:

Start 3:

- Found in 81 of 81 (100.0%) of genes in pham
- Manual Annotations of this start: 69 of 69
- Called 98.8% of time when present
- Phage (with cluster) where this start called: ASerpRocky_57 (CS4), Adgers_65 (CS2), Amore2_64 (CS1), Anamika_60 (CS3), Austin_63 (CS1), Beaver_65 (CS2), Benczkowski14_59 (CS4), BenoitCattle_62 (CS2), Berries_60 (CS3), Bianmat_60 (CS3), BigShaq_62 (CS2), BirksAndSocks_67 (CS2), Boneham_66 (CS2), Breezic_62 (CS2), Butterball_65 (CS2), CathyBurgh_61 (CS2), Charianelly_60 (CS3), Chelms_62 (CS2), CinnamonToast_68 (CS2), Crete_63 (CS2), Dakiti_63 (CS2), Damp_60 (CS3), Demosthenes_57 (CS4), Diabla_66 (CS2), Eggsie_60 (CS2), Ekhein_62 (CS2), Exiguo_61 (CS2), FelixAlejandro_67 (CS2), Flakey_61 (CS2), GMA7_53 (CS1), GTE7_52 (CS1), GalacticEye_60 (CS3), Gorko_61 (CS2), GourdThymes_62 (CS2), Guillaume_60 (CS3), Hail2Pitt_59 (CS3), Harambe_60 (CS3), HayZem_64 (CS1), Hello_60 (CS3), Hollow_59 (CS4), Hotorobo_62 (CS2), Jams_60 (CS3), Jellybones_64 (CS2), John316_65 (CS2), Jormungandr_60 (CS3), Kaseim_60 (CS3), Katyusha_59 (CS4), Kvothe_58 (CS4), Lahirium_60 (CS3), Lidong_60 (CS3), Linetti_62 (CS2), Lizzo_62 (CS2), Luker_61 (CS3), Minos_61 (CS3), Monty_61 (CS2), MrWormie_60 (CS3), Msay19_67 (CS2), Neoevie_60 (CS3), Newt_61 (CS3), Niagara_59 (CS4), Nimi13_60 (CS3), Philon9_58 (CS4), PierreThree_61 (CS2), PokyPuppy_61 (CS2), Poland_67 (CS2), RemRem_63 (CS2), RoyalG_62 (CS2), Sam12_61 (CS2), Shelley_60 (CS3), Sombrero_63 (CS2), Squibbles_61 (CS2), SteveFrench_61 (CS2), Sticker17_60 (CS3), Teal_60 (CS3), Teatealatte_60 (CS4), Teech_58 (CS4), Tredge_59 (CS4), Vitaenoi_58 (CS4), Woes_60 (CS3), Worcestershire_62 (CS2),

Start 7:

- Found in 27 of 81 (33.3%) of genes in pham
- No Manual Annotations of this start.
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Barbochs_62 (CS2),

Summary by clusters:

There are 4 clusters represented in this pham: CS4, CS1, CS3, CS2,

Info for manual annotations of cluster CS1:

- Start number 3 was manually annotated 3 times for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 3 was manually annotated 33 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 3 was manually annotated 24 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 3 was manually annotated 9 times for cluster CS4.

Gene Information:

Gene: ASerpRocky_57 Start: 54524, Stop: 53475, Start Num: 3

Candidate Starts for ASerpRocky_57:

(Start: 3 @54524 has 69 MA's), (5, 54506), (8, 54419), (9, 54386), (11, 54308), (13, 54263), (16, 54212), (19, 54134), (21, 54119), (22, 54116), (24, 54005), (29, 53879), (37, 53675), (40, 53645), (46, 53537),

Gene: Adgers_65 Start: 54370, Stop: 53243, Start Num: 3

Candidate Starts for Adgers_65:

(Start: 3 @54370 has 69 MA's), (4, 54361), (6, 54328), (7, 54313), (8, 54271), (10, 54193), (11, 54160), (12, 54148), (14, 54100), (15, 54079), (23, 53968), (25, 53836), (31, 53704), (32, 53701), (35, 53590), (40, 53494), (41, 53491), (48, 53278),

Gene: Amore2_64 Start: 54486, Stop: 53440, Start Num: 3

Candidate Starts for Amore2_64:

(2, 54552), (Start: 3 @54486 has 69 MA's), (8, 54387), (11, 54276), (15, 54195), (25, 53958), (28, 53904), (32, 53823), (34, 53793), (35, 53712), (39, 53646),

Gene: Anamika_60 Start: 54710, Stop: 53646, Start Num: 3

Candidate Starts for Anamika_60:

(Start: 3 @54710 has 69 MA's), (4, 54701), (8, 54614), (11, 54503), (12, 54491), (15, 54422), (17, 54371), (18, 54344), (23, 54311), (30, 54062), (31, 54047), (33, 54026), (35, 53933), (38, 53864), (48, 53681),

Gene: Austin_63 Start: 54484, Stop: 53438, Start Num: 3

Candidate Starts for Austin_63:

(2, 54550), (Start: 3 @54484 has 69 MA's), (8, 54385), (11, 54274), (15, 54193), (25, 53956), (28, 53902), (32, 53821), (34, 53791), (35, 53710), (39, 53644),

Gene: Barbochs_62 Start: 53869, Stop: 52799, Start Num: 7

Candidate Starts for Barbochs_62:

(Start: 3 @53926 has 69 MA's), (4, 53917), (6, 53884), (7, 53869), (8, 53827), (10, 53749), (11, 53716), (12, 53704), (14, 53656), (15, 53635), (23, 53524), (25, 53392), (30, 53275), (31, 53260), (32, 53257), (35, 53146), (40, 53050), (41, 53047), (48, 52834),

Gene: Beaver_65 Start: 55684, Stop: 54551, Start Num: 3

Candidate Starts for Beaver_65:

(Start: 3 @55684 has 69 MA's), (4, 55675), (6, 55642), (7, 55627), (8, 55585), (10, 55507), (11, 55474), (12, 55462), (14, 55414), (15, 55393), (23, 55282), (25, 55150), (30, 55033), (31, 55018), (32, 55015), (35, 54904), (40, 54808), (41, 54805), (48, 54586),

Gene: Benczkowski14_59 Start: 55042, Stop: 53990, Start Num: 3

Candidate Starts for Benczkowski14_59:

(Start: 3 @55042 has 69 MA's), (5, 55024), (8, 54937), (9, 54904), (11, 54826), (13, 54781), (16, 54730), (19, 54652), (21, 54637), (24, 54523), (29, 54397), (37, 54193), (40, 54163), (44, 54091), (46, 54052),

Gene: BenoitCattle_62 Start: 54321, Stop: 53203, Start Num: 3

Candidate Starts for BenoitCattle_62:

(Start: 3 @54321 has 69 MA's), (4, 54312), (8, 54222), (10, 54144), (11, 54111), (12, 54099), (14, 54051), (15, 54030), (17, 53979), (23, 53919), (25, 53787), (30, 53670), (31, 53655), (32, 53652), (35, 53541), (36, 53487), (40, 53445), (41, 53442), (43, 53364), (48, 53238),

Gene: Berries_60 Start: 54682, Stop: 53618, Start Num: 3

Candidate Starts for Berries_60:

(Start: 3 @54682 has 69 MA's), (4, 54673), (8, 54586), (11, 54475), (12, 54463), (15, 54394), (17, 54343), (18, 54316), (23, 54283), (30, 54034), (31, 54019), (33, 53998), (35, 53905), (38, 53836), (48, 53653),

Gene: Bianmat_60 Start: 54722, Stop: 53658, Start Num: 3

Candidate Starts for Bianmat_60:

(Start: 3 @54722 has 69 MA's), (4, 54713), (8, 54626), (11, 54515), (12, 54503), (15, 54434), (17, 54383), (18, 54356), (23, 54323), (30, 54074), (31, 54059), (33, 54038), (35, 53945), (38, 53876), (48, 53693),

Gene: BigShaq_62 Start: 54326, Stop: 53208, Start Num: 3

Candidate Starts for BigShaq_62:

(Start: 3 @54326 has 69 MA's), (4, 54317), (8, 54227), (10, 54149), (11, 54116), (12, 54104), (14, 54056), (15, 54035), (17, 53984), (23, 53924), (25, 53792), (30, 53675), (31, 53660), (35, 53546), (36, 53492), (40, 53450), (41, 53447), (43, 53369), (48, 53243),

Gene: BirksAndSocks_67 Start: 56010, Stop: 54907, Start Num: 3

Candidate Starts for BirksAndSocks_67:

(Start: 3 @56010 has 69 MA's), (4, 56001), (6, 55968), (7, 55953), (8, 55911), (10, 55833), (11, 55800), (12, 55788), (14, 55740), (15, 55719), (23, 55608), (25, 55476), (30, 55359), (31, 55344), (32, 55341), (35, 55230), (40, 55134), (41, 55131), (48, 54942),

Gene: Boneham_66 Start: 55935, Stop: 54808, Start Num: 3

Candidate Starts for Boneham_66:

(Start: 3 @55935 has 69 MA's), (4, 55926), (6, 55893), (7, 55878), (8, 55836), (10, 55758), (11, 55725), (12, 55713), (14, 55665), (15, 55644), (23, 55533), (25, 55401), (30, 55284), (31, 55269), (32, 55266),

(35, 55155), (40, 55059), (48, 54843),

Gene: Breezic_62 Start: 53921, Stop: 52794, Start Num: 3

Candidate Starts for Breezic_62:

(Start: 3 @53921 has 69 MA's), (4, 53912), (6, 53879), (7, 53864), (8, 53822), (10, 53744), (11, 53711), (12, 53699), (14, 53651), (15, 53630), (23, 53519), (25, 53387), (30, 53270), (31, 53255), (32, 53252), (35, 53141), (40, 53045), (41, 53042), (48, 52829),

Gene: Butterball_65 Start: 55940, Stop: 54813, Start Num: 3

Candidate Starts for Butterball_65:

(Start: 3 @55940 has 69 MA's), (4, 55931), (6, 55898), (7, 55883), (8, 55841), (10, 55763), (11, 55730), (12, 55718), (14, 55670), (15, 55649), (23, 55538), (25, 55406), (30, 55289), (31, 55274), (32, 55271), (35, 55160), (40, 55064), (48, 54848),

Gene: CathyBurgh_61 Start: 54516, Stop: 53389, Start Num: 3

Candidate Starts for CathyBurgh_61:

(Start: 3 @54516 has 69 MA's), (4, 54507), (6, 54474), (7, 54459), (8, 54417), (11, 54306), (12, 54294), (14, 54246), (15, 54225), (18, 54147), (23, 54114), (25, 53982), (26, 53973), (30, 53865), (31, 53850), (32, 53847), (35, 53736), (40, 53640), (41, 53637), (48, 53424),

Gene: Charianelly_60 Start: 54432, Stop: 53368, Start Num: 3

Candidate Starts for Charianelly_60:

(Start: 3 @54432 has 69 MA's), (4, 54423), (8, 54336), (11, 54225), (12, 54213), (15, 54144), (17, 54093), (18, 54066), (23, 54033), (30, 53784), (31, 53769), (33, 53748), (35, 53655), (38, 53586), (48, 53403),

Gene: Chelms_62 Start: 54452, Stop: 53334, Start Num: 3

Candidate Starts for Chelms_62:

(Start: 3 @54452 has 69 MA's), (4, 54443), (8, 54353), (10, 54275), (11, 54242), (12, 54230), (14, 54182), (15, 54161), (17, 54110), (23, 54050), (25, 53918), (30, 53801), (31, 53786), (32, 53783), (35, 53672), (36, 53618), (40, 53576), (41, 53573), (43, 53495), (48, 53369),

Gene: CinnamonToast_68 Start: 56006, Stop: 54879, Start Num: 3

Candidate Starts for CinnamonToast_68:

(Start: 3 @56006 has 69 MA's), (4, 55997), (6, 55964), (7, 55949), (8, 55907), (10, 55829), (11, 55796), (12, 55784), (14, 55736), (15, 55715), (23, 55604), (25, 55472), (30, 55355), (31, 55340), (32, 55337), (35, 55226), (40, 55130), (41, 55127), (48, 54914),

Gene: Crete_63 Start: 54574, Stop: 53456, Start Num: 3

Candidate Starts for Crete_63:

(Start: 3 @54574 has 69 MA's), (4, 54565), (8, 54475), (10, 54397), (11, 54364), (12, 54352), (14, 54304), (15, 54283), (17, 54232), (23, 54172), (25, 54040), (30, 53923), (31, 53908), (32, 53905), (35, 53794), (40, 53698), (41, 53695), (43, 53617), (48, 53491),

Gene: Dakiti_63 Start: 55320, Stop: 54202, Start Num: 3

Candidate Starts for Dakiti_63:

(Start: 3 @55320 has 69 MA's), (4, 55311), (8, 55221), (10, 55143), (11, 55110), (12, 55098), (14, 55050), (15, 55029), (17, 54978), (23, 54918), (25, 54786), (30, 54669), (31, 54654), (32, 54651), (35, 54540), (36, 54486), (40, 54444), (41, 54441), (43, 54363), (48, 54237),

Gene: Damp_60 Start: 53596, Stop: 52532, Start Num: 3

Candidate Starts for Damp_60:

(Start: 3 @53596 has 69 MA's), (4, 53587), (8, 53500), (11, 53389), (12, 53377), (15, 53308), (17, 53257), (18, 53230), (23, 53197), (30, 52948), (31, 52933), (33, 52912), (35, 52819), (38, 52750), (48, 52567),

Gene: Demosthenes_57 Start: 54494, Stop: 53451, Start Num: 3

Candidate Starts for Demosthenes_57:

(Start: 3 @54494 has 69 MA's), (5, 54476), (8, 54389), (9, 54356), (11, 54278), (13, 54233), (16, 54182), (19, 54104), (21, 54089), (22, 54086), (24, 53975), (29, 53849), (37, 53645), (40, 53615), (44, 53552), (46, 53513),

Gene: Diabla_66 Start: 55935, Stop: 54856, Start Num: 3

Candidate Starts for Diabla_66:

(Start: 3 @55935 has 69 MA's), (4, 55926), (8, 55836), (10, 55758), (11, 55725), (12, 55713), (14, 55665), (15, 55644), (17, 55593), (23, 55533), (30, 55284), (31, 55269), (32, 55266), (35, 55155), (36, 55113), (40, 55071), (41, 55068), (48, 54891),

Gene: Eggsie_60 Start: 53739, Stop: 52636, Start Num: 3

Candidate Starts for Eggsie_60:

(Start: 3 @53739 has 69 MA's), (4, 53730), (8, 53640), (10, 53562), (11, 53529), (12, 53517), (14, 53469), (15, 53448), (17, 53397), (23, 53337), (30, 53088), (31, 53073), (32, 53070), (35, 52959), (38, 52890), (40, 52875), (41, 52872), (48, 52671),

Gene: Ekhein_62 Start: 53626, Stop: 52499, Start Num: 3

Candidate Starts for Ekhein_62:

(Start: 3 @53626 has 69 MA's), (4, 53617), (6, 53584), (7, 53569), (8, 53527), (10, 53449), (11, 53416), (12, 53404), (14, 53356), (15, 53335), (18, 53257), (23, 53224), (25, 53092), (31, 52960), (32, 52957), (35, 52846), (40, 52750), (41, 52747), (48, 52534),

Gene: Exiguo_61 Start: 53662, Stop: 52511, Start Num: 3

Candidate Starts for Exiguo_61:

(Start: 3 @53662 has 69 MA's), (4, 53653), (6, 53620), (7, 53605), (8, 53563), (10, 53485), (11, 53452), (12, 53440), (14, 53392), (15, 53371), (18, 53293), (23, 53260), (25, 53128), (31, 52996), (32, 52993), (35, 52882), (40, 52786), (41, 52783), (48, 52546),

Gene: FelixAlejandro_67 Start: 56338, Stop: 55211, Start Num: 3

Candidate Starts for FelixAlejandro_67:

(Start: 3 @56338 has 69 MA's), (4, 56329), (6, 56296), (7, 56281), (8, 56239), (10, 56161), (11, 56128), (12, 56116), (14, 56068), (15, 56047), (23, 55936), (25, 55804), (30, 55687), (31, 55672), (32, 55669), (35, 55558), (40, 55462), (48, 55246),

Gene: Flakey_61 Start: 54502, Stop: 53375, Start Num: 3

Candidate Starts for Flakey_61:

(Start: 3 @54502 has 69 MA's), (4, 54493), (6, 54460), (7, 54445), (8, 54403), (10, 54325), (11, 54292), (12, 54280), (14, 54232), (15, 54211), (18, 54133), (23, 54100), (25, 53968), (31, 53836), (32, 53833), (35, 53722), (40, 53626), (41, 53623), (48, 53410),

Gene: GMA7_53 Start: 48700, Stop: 47654, Start Num: 3

Candidate Starts for GMA7_53:

(2, 48766), (Start: 3 @48700 has 69 MA's), (8, 48601), (11, 48490), (15, 48409), (25, 48172), (28, 48118), (32, 48037), (34, 48007), (35, 47926), (39, 47860),

Gene: GTE7_52 Start: 48731, Stop: 47685, Start Num: 3

Candidate Starts for GTE7_52:

(2, 48797), (Start: 3 @48731 has 69 MA's), (8, 48632), (11, 48521), (15, 48440), (25, 48203), (28, 48149), (32, 48068), (34, 48038), (35, 47957), (39, 47891),

Gene: GalacticEye_60 Start: 54393, Stop: 53329, Start Num: 3

Candidate Starts for GalacticEye_60:

(Start: 3 @54393 has 69 MA's), (4, 54384), (8, 54297), (11, 54186), (12, 54174), (15, 54105), (17, 54054), (18, 54027), (23, 53994), (30, 53745), (31, 53730), (33, 53709), (35, 53616), (38, 53547), (48, 53364),

Gene: Gorko_61 Start: 53648, Stop: 52521, Start Num: 3

Candidate Starts for Gorko_61:

(Start: 3 @53648 has 69 MA's), (4, 53639), (6, 53606), (7, 53591), (8, 53549), (10, 53471), (11, 53438), (12, 53426), (14, 53378), (15, 53357), (23, 53246), (25, 53114), (30, 52997), (31, 52982), (32, 52979), (35, 52868), (40, 52772), (41, 52769), (48, 52556),

Gene: GourdThymes_62 Start: 54522, Stop: 53395, Start Num: 3

Candidate Starts for GourdThymes_62:

(Start: 3 @54522 has 69 MA's), (4, 54513), (6, 54480), (7, 54465), (8, 54423), (10, 54345), (11, 54312), (12, 54300), (14, 54252), (15, 54231), (23, 54120), (31, 53856), (32, 53853), (35, 53742), (40, 53646), (41, 53643), (48, 53430),

Gene: Guillaume_60 Start: 54443, Stop: 53379, Start Num: 3

Candidate Starts for Guillaume_60:

(Start: 3 @54443 has 69 MA's), (4, 54434), (8, 54347), (11, 54236), (12, 54224), (15, 54155), (17, 54104), (18, 54077), (23, 54044), (30, 53795), (31, 53780), (33, 53759), (35, 53666), (38, 53597), (48, 53414),

Gene: Hail2Pitt_59 Start: 54919, Stop: 53855, Start Num: 3

Candidate Starts for Hail2Pitt_59:

(Start: 3 @54919 has 69 MA's), (4, 54910), (8, 54823), (11, 54712), (12, 54700), (15, 54631), (17, 54580), (18, 54553), (23, 54520), (30, 54271), (31, 54256), (33, 54235), (35, 54142), (38, 54073), (48, 53890),

Gene: Harambe_60 Start: 54710, Stop: 53646, Start Num: 3

Candidate Starts for Harambe_60:

(Start: 3 @54710 has 69 MA's), (4, 54701), (8, 54614), (11, 54503), (12, 54491), (15, 54422), (17, 54371), (23, 54311), (30, 54062), (31, 54047), (33, 54026), (35, 53933), (38, 53864), (48, 53681),

Gene: HayZem_64 Start: 54483, Stop: 53437, Start Num: 3

Candidate Starts for HayZem_64:

(2, 54549), (Start: 3 @54483 has 69 MA's), (8, 54384), (11, 54273), (15, 54192), (25, 53955), (28, 53901), (32, 53820), (34, 53790), (35, 53709), (39, 53643),

Gene: Hello_60 Start: 54672, Stop: 53608, Start Num: 3

Candidate Starts for Hello_60:

(Start: 3 @54672 has 69 MA's), (4, 54663), (8, 54576), (11, 54465), (12, 54453), (15, 54384), (17, 54333), (18, 54306), (23, 54273), (30, 54024), (31, 54009), (33, 53988), (35, 53895), (38, 53826), (48, 53643),

Gene: Hollow_59 Start: 55223, Stop: 54174, Start Num: 3

Candidate Starts for Hollow_59:

(Start: 3 @55223 has 69 MA's), (5, 55205), (8, 55118), (9, 55085), (11, 55007), (13, 54962), (16, 54911), (19, 54833), (21, 54818), (22, 54815), (24, 54704), (29, 54578), (37, 54374), (40, 54344), (44,

54275), (46, 54236),

Gene: Hotorobo_62 Start: 54509, Stop: 53382, Start Num: 3

Candidate Starts for Hotorobo_62:

(Start: 3 @54509 has 69 MA's), (4, 54500), (6, 54467), (7, 54452), (8, 54410), (10, 54332), (11, 54299), (12, 54287), (14, 54239), (15, 54218), (23, 54107), (25, 53975), (30, 53858), (31, 53843), (32, 53840), (35, 53729), (40, 53633), (41, 53630), (48, 53417),

Gene: Jams_60 Start: 53882, Stop: 52818, Start Num: 3

Candidate Starts for Jams_60:

(Start: 3 @53882 has 69 MA's), (4, 53873), (8, 53786), (11, 53675), (12, 53663), (15, 53594), (17, 53543), (18, 53516), (23, 53483), (30, 53234), (31, 53219), (33, 53198), (35, 53105), (38, 53036), (48, 52853),

Gene: Jellybones_64 Start: 55622, Stop: 54495, Start Num: 3

Candidate Starts for Jellybones_64:

(Start: 3 @55622 has 69 MA's), (4, 55613), (6, 55580), (7, 55565), (8, 55523), (10, 55445), (11, 55412), (12, 55400), (14, 55352), (15, 55331), (23, 55220), (25, 55088), (30, 54971), (31, 54956), (32, 54953), (35, 54842), (40, 54746), (41, 54743), (48, 54530),

Gene: John316_65 Start: 55667, Stop: 54540, Start Num: 3

Candidate Starts for John316_65:

(Start: 3 @55667 has 69 MA's), (4, 55658), (6, 55625), (7, 55610), (8, 55568), (10, 55490), (11, 55457), (12, 55445), (14, 55397), (15, 55376), (23, 55265), (31, 55001), (32, 54998), (35, 54887), (40, 54791), (41, 54788), (48, 54575),

Gene: Jormungandr_60 Start: 54425, Stop: 53361, Start Num: 3

Candidate Starts for Jormungandr_60:

(Start: 3 @54425 has 69 MA's), (4, 54416), (8, 54329), (11, 54218), (12, 54206), (15, 54137), (17, 54086), (18, 54059), (23, 54026), (30, 53777), (31, 53762), (33, 53741), (35, 53648), (38, 53579), (48, 53396),

Gene: Kaseim_60 Start: 53867, Stop: 52803, Start Num: 3

Candidate Starts for Kaseim_60:

(Start: 3 @53867 has 69 MA's), (4, 53858), (8, 53771), (11, 53660), (12, 53648), (15, 53579), (17, 53528), (18, 53501), (23, 53468), (30, 53219), (31, 53204), (33, 53183), (35, 53090), (38, 53021), (48, 52838),

Gene: Katyusha_59 Start: 55042, Stop: 53990, Start Num: 3

Candidate Starts for Katyusha_59:

(Start: 3 @55042 has 69 MA's), (5, 55024), (8, 54937), (9, 54904), (11, 54826), (13, 54781), (16, 54730), (19, 54652), (21, 54637), (24, 54523), (29, 54397), (37, 54193), (40, 54163), (44, 54091), (46, 54052),

Gene: Kvothe_58 Start: 54944, Stop: 53889, Start Num: 3

Candidate Starts for Kvothe_58:

(Start: 3 @54944 has 69 MA's), (5, 54926), (8, 54839), (9, 54806), (11, 54728), (13, 54683), (16, 54632), (19, 54554), (21, 54539), (24, 54425), (29, 54299), (37, 54095), (40, 54065), (44, 53990), (46, 53951),

Gene: Lahirium_60 Start: 54947, Stop: 53883, Start Num: 3

Candidate Starts for Lahirium_60:

(Start: 3 @54947 has 69 MA's), (4, 54938), (8, 54851), (11, 54740), (12, 54728), (15, 54659), (17, 54608), (18, 54581), (23, 54548), (30, 54299), (31, 54284), (33, 54263), (35, 54170), (38, 54101), (48, 53918),

Gene: Lidong_60 Start: 54682, Stop: 53618, Start Num: 3

Candidate Starts for Lidong_60:

(Start: 3 @54682 has 69 MA's), (4, 54673), (8, 54586), (11, 54475), (12, 54463), (15, 54394), (17, 54343), (18, 54316), (23, 54283), (30, 54034), (31, 54019), (33, 53998), (35, 53905), (38, 53836), (48, 53653),

Gene: Linetti_62 Start: 55314, Stop: 54196, Start Num: 3

Candidate Starts for Linetti_62:

(Start: 3 @55314 has 69 MA's), (4, 55305), (8, 55215), (10, 55137), (11, 55104), (12, 55092), (14, 55044), (15, 55023), (17, 54972), (23, 54912), (25, 54780), (30, 54663), (31, 54648), (32, 54645), (35, 54534), (36, 54480), (40, 54438), (41, 54435), (43, 54357), (48, 54231),

Gene: Lizzo_62 Start: 54516, Stop: 53389, Start Num: 3

Candidate Starts for Lizzo_62:

(Start: 3 @54516 has 69 MA's), (4, 54507), (6, 54474), (7, 54459), (8, 54417), (11, 54306), (12, 54294), (14, 54246), (15, 54225), (18, 54147), (23, 54114), (25, 53982), (26, 53973), (30, 53865), (31, 53850), (32, 53847), (35, 53736), (40, 53640), (41, 53637), (48, 53424),

Gene: Luker_61 Start: 54900, Stop: 53836, Start Num: 3

Candidate Starts for Luker_61:

(Start: 3 @54900 has 69 MA's), (4, 54891), (8, 54804), (11, 54693), (12, 54681), (15, 54612), (17, 54561), (18, 54534), (23, 54501), (30, 54252), (31, 54237), (33, 54216), (35, 54123), (38, 54054), (48, 53871),

Gene: Minos_61 Start: 54424, Stop: 53360, Start Num: 3

Candidate Starts for Minos_61:

(Start: 3 @54424 has 69 MA's), (4, 54415), (8, 54328), (11, 54217), (12, 54205), (15, 54136), (17, 54085), (18, 54058), (23, 54025), (30, 53776), (31, 53761), (33, 53740), (35, 53647), (38, 53578), (48, 53395),

Gene: Monty_61 Start: 53648, Stop: 52521, Start Num: 3

Candidate Starts for Monty_61:

(Start: 3 @53648 has 69 MA's), (4, 53639), (6, 53606), (7, 53591), (8, 53549), (10, 53471), (11, 53438), (12, 53426), (14, 53378), (15, 53357), (18, 53279), (23, 53246), (25, 53114), (31, 52982), (32, 52979), (35, 52868), (40, 52772), (41, 52769), (48, 52556),

Gene: MrWormie_60 Start: 53585, Stop: 52521, Start Num: 3

Candidate Starts for MrWormie_60:

(Start: 3 @53585 has 69 MA's), (4, 53576), (8, 53489), (11, 53378), (12, 53366), (15, 53297), (17, 53246), (18, 53219), (23, 53186), (30, 52937), (31, 52922), (33, 52901), (35, 52808), (38, 52739), (48, 52556),

Gene: Msay19_67 Start: 56224, Stop: 55097, Start Num: 3

Candidate Starts for Msay19_67:

(Start: 3 @56224 has 69 MA's), (4, 56215), (6, 56182), (7, 56167), (8, 56125), (10, 56047), (11, 56014), (12, 56002), (14, 55954), (15, 55933), (23, 55822), (25, 55690), (30, 55573), (31, 55558), (32, 55555), (35, 55444), (40, 55348), (41, 55345), (48, 55132),

Gene: Neoevie_60 Start: 54686, Stop: 53622, Start Num: 3

Candidate Starts for Neeve_60:

(Start: 3 @54686 has 69 MA's), (4, 54677), (8, 54590), (11, 54479), (12, 54467), (15, 54398), (17, 54347), (18, 54320), (23, 54287), (30, 54038), (31, 54023), (33, 54002), (35, 53909), (38, 53840), (48, 53657),

Gene: Newt_61 Start: 54914, Stop: 53850, Start Num: 3

Candidate Starts for Newt_61:

(Start: 3 @54914 has 69 MA's), (4, 54905), (8, 54818), (11, 54707), (12, 54695), (15, 54626), (17, 54575), (18, 54548), (23, 54515), (30, 54266), (31, 54251), (33, 54230), (35, 54137), (38, 54068), (48, 53885),

Gene: Niagara_59 Start: 55035, Stop: 53980, Start Num: 3

Candidate Starts for Niagara_59:

(Start: 3 @55035 has 69 MA's), (5, 55017), (8, 54930), (9, 54897), (11, 54819), (13, 54774), (16, 54723), (19, 54645), (21, 54630), (24, 54516), (29, 54390), (37, 54186), (40, 54156), (44, 54081), (46, 54042),

Gene: Nimi13_60 Start: 54433, Stop: 53369, Start Num: 3

Candidate Starts for Nimi13_60:

(Start: 3 @54433 has 69 MA's), (4, 54424), (8, 54337), (11, 54226), (12, 54214), (15, 54145), (17, 54094), (18, 54067), (23, 54034), (30, 53785), (31, 53770), (33, 53749), (35, 53656), (38, 53587), (48, 53404),

Gene: Philon9_58 Start: 56153, Stop: 55104, Start Num: 3

Candidate Starts for Philon9_58:

(1, 56237), (Start: 3 @56153 has 69 MA's), (4, 56144), (8, 56048), (11, 55937), (20, 55754), (21, 55748), (24, 55634), (27, 55586), (32, 55469), (40, 55274), (44, 55205), (47, 55154), (49, 55136),

Gene: PierreThree_61 Start: 54951, Stop: 53833, Start Num: 3

Candidate Starts for PierreThree_61:

(Start: 3 @54951 has 69 MA's), (4, 54942), (8, 54852), (10, 54774), (11, 54741), (12, 54729), (14, 54681), (15, 54660), (17, 54609), (23, 54549), (25, 54417), (30, 54300), (31, 54285), (32, 54282), (35, 54171), (36, 54117), (40, 54075), (41, 54072), (43, 53994), (48, 53868),

Gene: PokyPuppy_61 Start: 54888, Stop: 53806, Start Num: 3

Candidate Starts for PokyPuppy_61:

(Start: 3 @54888 has 69 MA's), (4, 54879), (8, 54789), (10, 54711), (11, 54678), (12, 54666), (14, 54618), (15, 54597), (17, 54546), (23, 54486), (25, 54354), (30, 54237), (31, 54222), (32, 54219), (35, 54108), (36, 54075), (38, 54048), (40, 54033), (41, 54030), (42, 54015), (45, 53871), (48, 53841),

Gene: Poland_67 Start: 56203, Stop: 55076, Start Num: 3

Candidate Starts for Poland_67:

(Start: 3 @56203 has 69 MA's), (4, 56194), (6, 56161), (7, 56146), (8, 56104), (10, 56026), (11, 55993), (12, 55981), (14, 55933), (15, 55912), (23, 55801), (25, 55669), (30, 55552), (31, 55537), (32, 55534), (35, 55423), (40, 55327), (41, 55324), (48, 55111),

Gene: RemRem_63 Start: 53638, Stop: 52511, Start Num: 3

Candidate Starts for RemRem_63:

(Start: 3 @53638 has 69 MA's), (4, 53629), (6, 53596), (7, 53581), (8, 53539), (10, 53461), (11, 53428), (12, 53416), (14, 53368), (15, 53347), (18, 53269), (23, 53236), (25, 53104), (26, 53095), (30, 52987), (31, 52972), (32, 52969), (35, 52858), (40, 52762), (41, 52759), (48, 52546),

Gene: RoyalG_62 Start: 54360, Stop: 53281, Start Num: 3

Candidate Starts for RoyalG_62:

(Start: 3 @54360 has 69 MA's), (4, 54351), (8, 54261), (10, 54183), (11, 54150), (12, 54138), (14, 54090), (15, 54069), (23, 53958), (30, 53709), (31, 53694), (32, 53691), (35, 53580), (36, 53538), (40, 53496), (41, 53493), (48, 53316),

Gene: Sam12_61 Start: 53662, Stop: 52511, Start Num: 3

Candidate Starts for Sam12_61:

(Start: 3 @53662 has 69 MA's), (4, 53653), (6, 53620), (7, 53605), (8, 53563), (10, 53485), (11, 53452), (12, 53440), (14, 53392), (15, 53371), (18, 53293), (23, 53260), (25, 53128), (31, 52996), (32, 52993), (35, 52882), (40, 52786), (41, 52783), (48, 52546),

Gene: Shelley_60 Start: 53909, Stop: 52845, Start Num: 3

Candidate Starts for Shelley_60:

(Start: 3 @53909 has 69 MA's), (4, 53900), (8, 53813), (11, 53702), (12, 53690), (15, 53621), (17, 53570), (18, 53543), (23, 53510), (30, 53261), (31, 53246), (33, 53225), (35, 53132), (38, 53063), (48, 52880),

Gene: Sombrero_63 Start: 54229, Stop: 53096, Start Num: 3

Candidate Starts for Sombrero_63:

(Start: 3 @54229 has 69 MA's), (4, 54220), (6, 54187), (7, 54172), (8, 54130), (10, 54052), (11, 54019), (12, 54007), (14, 53959), (15, 53938), (18, 53860), (23, 53827), (25, 53695), (26, 53686), (30, 53578), (31, 53563), (32, 53560), (35, 53449), (40, 53353), (41, 53350), (48, 53131),

Gene: Squibbles_61 Start: 54501, Stop: 53374, Start Num: 3

Candidate Starts for Squibbles_61:

(Start: 3 @54501 has 69 MA's), (4, 54492), (6, 54459), (7, 54444), (8, 54402), (10, 54324), (11, 54291), (12, 54279), (14, 54231), (15, 54210), (18, 54132), (23, 54099), (25, 53967), (31, 53835), (32, 53832), (35, 53721), (40, 53625), (41, 53622), (48, 53409),

Gene: SteveFrench_61 Start: 54600, Stop: 53521, Start Num: 3

Candidate Starts for SteveFrench_61:

(Start: 3 @54600 has 69 MA's), (4, 54591), (8, 54501), (10, 54423), (11, 54390), (12, 54378), (14, 54330), (15, 54309), (23, 54198), (30, 53949), (31, 53934), (32, 53931), (35, 53820), (36, 53778), (40, 53736), (41, 53733), (48, 53556),

Gene: Sticker17_60 Start: 54397, Stop: 53360, Start Num: 3

Candidate Starts for Sticker17_60:

(Start: 3 @54397 has 69 MA's), (4, 54388), (8, 54301), (11, 54190), (12, 54178), (15, 54109), (17, 54058), (18, 54031), (23, 53998), (30, 53749), (31, 53734), (33, 53713), (35, 53620), (38, 53551), (48, 53395),

Gene: Teal_60 Start: 54891, Stop: 53827, Start Num: 3

Candidate Starts for Teal_60:

(Start: 3 @54891 has 69 MA's), (4, 54882), (8, 54795), (11, 54684), (12, 54672), (15, 54603), (17, 54552), (18, 54525), (23, 54492), (30, 54243), (31, 54228), (33, 54207), (35, 54114), (38, 54045), (48, 53862),

Gene: Teatealatte_60 Start: 54932, Stop: 53877, Start Num: 3

Candidate Starts for Teatealatte_60:

(Start: 3 @54932 has 69 MA's), (5, 54914), (8, 54827), (9, 54794), (11, 54716), (13, 54671), (16, 54620), (19, 54542), (21, 54527), (24, 54413), (29, 54287), (37, 54083), (40, 54053), (44, 53978), (46, 53939),

Gene: Teech_58 Start: 54748, Stop: 53693, Start Num: 3

Candidate Starts for Teech_58:

(Start: 3 @54748 has 69 MA's), (5, 54730), (8, 54643), (9, 54610), (11, 54532), (13, 54487), (16, 54436), (19, 54358), (21, 54343), (24, 54229), (29, 54103), (37, 53899), (40, 53869), (44, 53794), (46, 53755),

Gene: Tredge_59 Start: 54932, Stop: 53877, Start Num: 3

Candidate Starts for Tredge_59:

(Start: 3 @54932 has 69 MA's), (5, 54914), (8, 54827), (9, 54794), (11, 54716), (13, 54671), (16, 54620), (19, 54542), (21, 54527), (24, 54413), (29, 54287), (37, 54083), (40, 54053), (44, 53978), (46, 53939),

Gene: Vitaenoi_58 Start: 56137, Stop: 55088, Start Num: 3

Candidate Starts for Vitaenoi_58:

(1, 56221), (Start: 3 @56137 has 69 MA's), (4, 56128), (8, 56032), (11, 55921), (20, 55738), (21, 55732), (24, 55618), (27, 55570), (32, 55453), (40, 55258), (44, 55189), (47, 55138), (49, 55120),

Gene: Woes_60 Start: 54942, Stop: 53878, Start Num: 3

Candidate Starts for Woes_60:

(Start: 3 @54942 has 69 MA's), (4, 54933), (8, 54846), (11, 54735), (12, 54723), (15, 54654), (17, 54603), (18, 54576), (23, 54543), (30, 54294), (31, 54279), (33, 54258), (35, 54165), (38, 54096), (48, 53913),

Gene: Worcestershire_62 Start: 53640, Stop: 52513, Start Num: 3

Candidate Starts for Worcestershire_62:

(Start: 3 @53640 has 69 MA's), (4, 53631), (6, 53598), (7, 53583), (8, 53541), (10, 53463), (11, 53430), (12, 53418), (14, 53370), (15, 53349), (18, 53271), (23, 53238), (25, 53106), (31, 52974), (32, 52971), (35, 52860), (40, 52764), (41, 52761), (48, 52548),