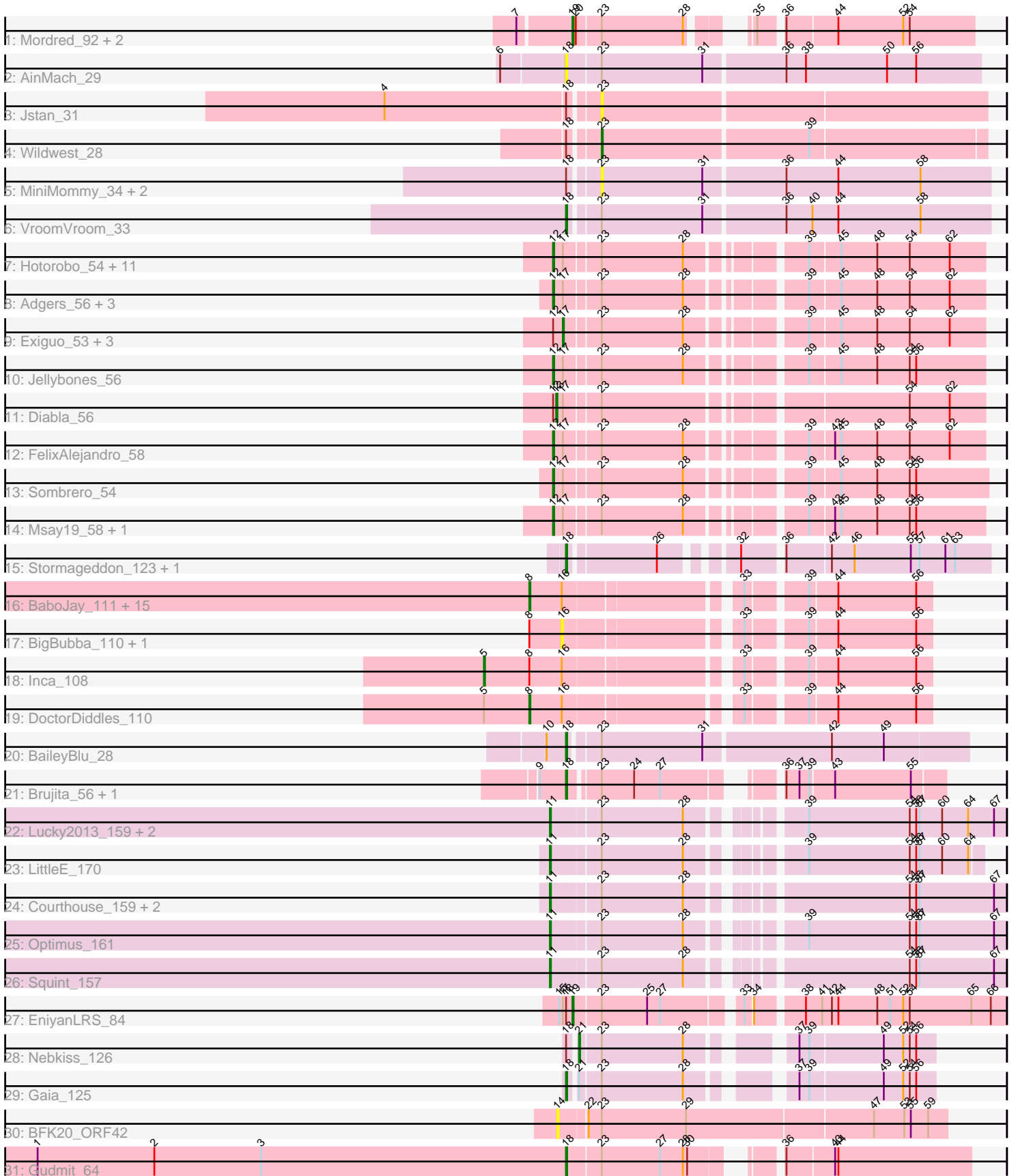


Pham 157826



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 157826 Report

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

Pham number 157826 has 75 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Mordred_92, JaNo_91, MoyaNatalis_91
- Track 2 : AinMach_29
- Track 3 : Jstan_31
- Track 4 : Wildwest_28
- Track 5 : MiniMommy_34, ShakeltOph_34, JasmineDragon_34
- Track 6 : VroomVroom_33
- Track 7 : Hotorobo_54, CathyBurgh_53, Barbochs_54, Boneham_58, John316_57, RemRem_55, Sam12_53, Beaver_57, Monty_53, Breezic_54, Lizzo_54, Butterball_57
- Track 8 : Adgers_56, BirksAndSocks_59, GourdThymes_54, Squibbles_53
- Track 9 : Exiguo_53, Flakey_53, Ekhein_54, Gorko_53
- Track 10 : Jellybones_56
- Track 11 : Diabla_56
- Track 12 : FelixAlejandro_58
- Track 13 : Sombrero_54
- Track 14 : Msay19_58, Poland_60
- Track 15 : Stormageddon_123, RedWattleHog_124
- Track 16 : BaboJay_111, JeTaime_110, Wiggin_114, Porky_110, Kimchi_116, 244_113, Icee_113, Goku_111, Xandras_109, TBrady12_115, Marshmallow_110, Nimrod_112, Filch_114, Holt_117, Stank_114, Goldilocks_115
- Track 17 : BigBubba_110, Teaspoon_107
- Track 18 : Inca_108
- Track 19 : DoctorDiddles_110
- Track 20 : BaileyBlu_28
- Track 21 : Brujita_56, Island3_56
- Track 22 : Lucky2013_159, MiaZeal_166, Porcelain_163
- Track 23 : LittleE_170
- Track 24 : Courthouse_159, Superphikiman_160, Ariel_162
- Track 25 : Optimus_161
- Track 26 : Squint_157
- Track 27 : EniyanLRS_84
- Track 28 : Nebkiss_126
- Track 29 : Gaia_125
- Track 30 : BFK20_ORF42
- Track 31 : Gudmit_64

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

The start number called the most often in the published annotations is 12, it was called in 17 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adgers_56, Barbochs_54, Beaver_57, BirksAndSocks_59, Boneham_58, Breezic_54, Butterball_57, CathyBurgh_53, FelixAlejandro_58, GourdThymes_54, Hotorobo_54, Jellybones_56, John316_57, Lizzo_54, Monty_53, Msay19_58, Poland_60, RemRem_55, Sam12_53, Sombrero_54, Squibbles_53,

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

- Diabla_56, Ekhein_54, Exiguo_53, Flakey_53, Gorko_53,

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

- 244_113, AinMach_29, Ariel_162, BFK20_ORF42, BaboJay_111, BaileyBlu_28, BigBubba_110, Brujita_56, Courthouse_159, DoctorDiddles_110, EniyanLRS_84, Filch_114, Gaia_125, Goku_111, Goldilocks_115, Gudmit_64, Holt_117, Icee_113, Inca_108, Island3_56, JaNo_91, JasmineDragon_34, JeTaime_110, Jstan_31, Kimchi_116, LittleE_170, Lucky2013_159, Marshmallow_110, MiaZeal_166, MiniMommy_34, Mordred_92, MoyaNatalis_91, Nebkiss_126, Nimrod_112, Optimus_161, Porcelain_163, Porky_110, RedWattleHog_124, ShakeltOph_34, Squint_157, Stank_114, Stormageddon_123, Superphikiman_160, TBrady12_115, Teaspoon_107, VroomVroom_33, Wiggin_114, Wildwest_28, Xandras_109,

Summary by start number:

Start 5:

- Found in 2 of 75 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 59
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Inca_108 (E),

Start 8:

- Found in 20 of 75 (26.7%) of genes in pham
- Manual Annotations of this start: 15 of 59
- Called 85.0% of time when present
- Phage (with cluster) where this start called: 244_113 (E), BaboJay_111 (E), DoctorDiddles_110 (E), Filch_114 (E), Goku_111 (E), Goldilocks_115 (E), Holt_117 (E), Icee_113 (E), JeTaime_110 (E), Kimchi_116 (E), Marshmallow_110 (E), Nimrod_112 (E), Porky_110 (E), Stank_114 (E), TBrady12_115 (E), Wiggin_114 (E), Xandras_109 (E),

Start 11:

- Found in 9 of 75 (12.0%) of genes in pham
- Manual Annotations of this start: 9 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ariel_162 (J), Courthouse_159 (J), LittleE_170 (J), Lucky2013_159 (J), MiaZeal_166 (J), Optimus_161 (J), Porcelain_163 (J), Squint_157 (J), Superphikiman_160 (J),

Start 12:

- Found in 26 of 75 (34.7%) of genes in pham
- Manual Annotations of this start: 17 of 59
- Called 80.8% of time when present
- Phage (with cluster) where this start called: Adgers_56 (CS2), Barbochs_54 (CS2), Beaver_57 (CS2), BirksAndSocks_59 (CS2), Boneham_58 (CS2), Breezic_54 (CS2), Butterball_57 (CS2), CathyBurgh_53 (CS2), FelixAlejandro_58 (CS2), GourdThymes_54 (CS2), Hotorobo_54 (CS2), Jellybones_56 (CS2), John316_57 (CS2), Lizzo_54 (CS2), Monty_53 (CS2), Msay19_58 (CS2), Poland_60 (CS2), RemRem_55 (CS2), Sam12_53 (CS2), Sombrero_54 (CS2), Squibbles_53 (CS2),

Start 13:

- Found in 1 of 75 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Diabla_56 (CS2),

Start 14:

- Found in 1 of 75 (1.3%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BFK20_ORF42 (singleton),

Start 16:

- Found in 20 of 75 (26.7%) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: BigBubba_110 (E), Teaspoon_107 (E),

Start 17:

- Found in 27 of 75 (36.0%) of genes in pham
- Manual Annotations of this start: 4 of 59
- Called 14.8% of time when present
- Phage (with cluster) where this start called: Ekhein_54 (CS2), Exiguo_53 (CS2), Flakey_53 (CS2), Gorko_53 (CS2),

Start 18:

- Found in 16 of 75 (21.3%) of genes in pham
- Manual Annotations of this start: 8 of 59
- Called 56.2% of time when present
- Phage (with cluster) where this start called: AinMach_29 (AZ), BaileyBlu_28 (FP), Brujita_56 (I1), Gaia_125 (X), Gudmit_64 (singleton), Island3_56 (I1), RedWattleHog_124 (DX), Stormageddon_123 (DX), VroomVroom_33 (AZ4),

Start 19:

- Found in 4 of 75 (5.3%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EniyanLRS_84 (V), JaNo_91 (AR), Mordred_92 (AR), MoyaNatalis_91 (AR),

Start 21:

- Found in 2 of 75 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 59

- Called 50.0% of time when present
- Phage (with cluster) where this start called: Nebkiss_126 (X),

Start 23:

- Found in 53 of 75 (70.7%) of genes in pham
- Manual Annotations of this start: 1 of 59
- Called 9.4% of time when present
- Phage (with cluster) where this start called: JasmineDragon_34 (AZ4), Jstan_31 (AZ1), MiniMommy_34 (AZ4), ShakeltOph_34 (AZ4), Wildwest_28 (AZ1),

Summary by clusters:

There are 13 clusters represented in this pham: FP, singleton, AZ1, E, I1, J, AR, DX, V, X, AZ, AZ4, CS2,

Info for manual annotations of cluster AR:

- Start number 19 was manually annotated 1 time for cluster AR.

Info for manual annotations of cluster AZ1:

- Start number 23 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster AZ4:

- Start number 18 was manually annotated 1 time for cluster AZ4.

Info for manual annotations of cluster CS2:

- Start number 12 was manually annotated 17 times for cluster CS2.
- Start number 13 was manually annotated 1 time for cluster CS2.
- Start number 17 was manually annotated 4 times for cluster CS2.

Info for manual annotations of cluster DX:

- Start number 18 was manually annotated 2 times for cluster DX.

Info for manual annotations of cluster E:

- Start number 5 was manually annotated 1 time for cluster E.
- Start number 8 was manually annotated 15 times for cluster E.

Info for manual annotations of cluster FP:

- Start number 18 was manually annotated 1 time for cluster FP.

Info for manual annotations of cluster I1:

- Start number 18 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 11 was manually annotated 9 times for cluster J.

Info for manual annotations of cluster V:

- Start number 19 was manually annotated 1 time for cluster V.

Info for manual annotations of cluster X:

- Start number 18 was manually annotated 1 time for cluster X.
- Start number 21 was manually annotated 1 time for cluster X.

Gene Information:

Gene: 244_113 Start: 63341, Stop: 63673, Start Num: 8

Candidate Starts for 244_113:

(Start: 8 @63341 has 15 MA's), (16, 63371), (33, 63515), (39, 63563), (44, 63587), (56, 63659),

Gene: Adgers_56 Start: 47963, Stop: 47601, Start Num: 12

Candidate Starts for Adgers_56:

(Start: 12 @47963 has 17 MA's), (Start: 17 @47954 has 4 MA's), (Start: 23 @47924 has 1 MA's), (28, 47849), (39, 47759), (45, 47732), (48, 47699), (54, 47669), (62, 47633),

Gene: AinMach_29 Start: 23247, Stop: 23618, Start Num: 18

Candidate Starts for AinMach_29:

(6, 23190), (Start: 18 @23247 has 8 MA's), (Start: 23 @23277 has 1 MA's), (31, 23370), (36, 23442), (38, 23460), (50, 23535), (56, 23562),

Gene: Ariel_162 Start: 83313, Stop: 83693, Start Num: 11

Candidate Starts for Ariel_162:

(Start: 11 @83313 has 9 MA's), (Start: 23 @83355 has 1 MA's), (28, 83430), (54, 83604), (56, 83610), (57, 83613), (67, 83682),

Gene: BFK20_ORF42 Start: 32596, Stop: 32249, Start Num: 14

Candidate Starts for BFK20_ORF42:

(14, 32596), (22, 32572), (Start: 23 @32560 has 1 MA's), (29, 32482), (47, 32314), (53, 32287), (55, 32281), (59, 32266),

Gene: BaboJay_111 Start: 64514, Stop: 64846, Start Num: 8

Candidate Starts for BaboJay_111:

(Start: 8 @64514 has 15 MA's), (16, 64544), (33, 64688), (39, 64736), (44, 64760), (56, 64832),

Gene: BaileyBlu_28 Start: 22070, Stop: 22423, Start Num: 18

Candidate Starts for BaileyBlu_28:

(10, 22052), (Start: 18 @22070 has 8 MA's), (Start: 23 @22094 has 1 MA's), (31, 22187), (42, 22301), (49, 22349),

Gene: Barbochs_54 Start: 47707, Stop: 47345, Start Num: 12

Candidate Starts for Barbochs_54:

(Start: 12 @47707 has 17 MA's), (Start: 17 @47698 has 4 MA's), (Start: 23 @47668 has 1 MA's), (28, 47593), (39, 47503), (45, 47476), (48, 47443), (54, 47413), (62, 47377),

Gene: Beaver_57 Start: 49477, Stop: 49115, Start Num: 12

Candidate Starts for Beaver_57:

(Start: 12 @49477 has 17 MA's), (Start: 17 @49468 has 4 MA's), (Start: 23 @49438 has 1 MA's), (28, 49363), (39, 49273), (45, 49246), (48, 49213), (54, 49183), (62, 49147),

Gene: BigBubba_110 Start: 63017, Stop: 63319, Start Num: 16

Candidate Starts for BigBubba_110:

(Start: 8 @62987 has 15 MA's), (16, 63017), (33, 63161), (39, 63209), (44, 63233), (56, 63305),

Gene: BirksAndSocks_59 Start: 49827, Stop: 49465, Start Num: 12

Candidate Starts for BirksAndSocks_59:

(Start: 12 @49827 has 17 MA's), (Start: 17 @49818 has 4 MA's), (Start: 23 @49788 has 1 MA's), (28, 49713), (39, 49623), (45, 49596), (48, 49563), (54, 49533), (62, 49497),

Gene: Boneham_58 Start: 49728, Stop: 49366, Start Num: 12

Candidate Starts for Boneham_58:

(Start: 12 @49728 has 17 MA's), (Start: 17 @49719 has 4 MA's), (Start: 23 @49689 has 1 MA's), (28, 49614), (39, 49524), (45, 49497), (48, 49464), (54, 49434), (62, 49398),

Gene: Breezic_54 Start: 47720, Stop: 47358, Start Num: 12

Candidate Starts for Breezic_54:

(Start: 12 @47720 has 17 MA's), (Start: 17 @47711 has 4 MA's), (Start: 23 @47681 has 1 MA's), (28, 47606), (39, 47516), (45, 47489), (48, 47456), (54, 47426), (62, 47390),

Gene: Brujita_56 Start: 37993, Stop: 38289, Start Num: 18

Candidate Starts for Brujita_56:

(9, 37969), (Start: 18 @37993 has 8 MA's), (Start: 23 @38017 has 1 MA's), (24, 38047), (27, 38071), (36, 38149), (37, 38161), (39, 38170), (43, 38191), (55, 38260),

Gene: Butterball_57 Start: 49733, Stop: 49371, Start Num: 12

Candidate Starts for Butterball_57:

(Start: 12 @49733 has 17 MA's), (Start: 17 @49724 has 4 MA's), (Start: 23 @49694 has 1 MA's), (28, 49619), (39, 49529), (45, 49502), (48, 49469), (54, 49439), (62, 49403),

Gene: CathyBurgh_53 Start: 48297, Stop: 47935, Start Num: 12

Candidate Starts for CathyBurgh_53:

(Start: 12 @48297 has 17 MA's), (Start: 17 @48288 has 4 MA's), (Start: 23 @48258 has 1 MA's), (28, 48183), (39, 48093), (45, 48066), (48, 48033), (54, 48003), (62, 47967),

Gene: Courthouse_159 Start: 83757, Stop: 84137, Start Num: 11

Candidate Starts for Courthouse_159:

(Start: 11 @83757 has 9 MA's), (Start: 23 @83799 has 1 MA's), (28, 83874), (54, 84048), (56, 84054), (57, 84057), (67, 84126),

Gene: Diabla_56 Start: 49398, Stop: 49039, Start Num: 13

Candidate Starts for Diabla_56:

(Start: 12 @49401 has 17 MA's), (Start: 13 @49398 has 1 MA's), (Start: 17 @49392 has 4 MA's), (Start: 23 @49362 has 1 MA's), (54, 49107), (62, 49071),

Gene: DoctorDiddles_110 Start: 62868, Stop: 63200, Start Num: 8

Candidate Starts for DoctorDiddles_110:

(Start: 5 @62826 has 1 MA's), (Start: 8 @62868 has 15 MA's), (16, 62898), (33, 63042), (39, 63090), (44, 63114), (56, 63186),

Gene: Ekhein_54 Start: 47416, Stop: 47060, Start Num: 17

Candidate Starts for Ekhein_54:

(Start: 12 @47425 has 17 MA's), (Start: 17 @47416 has 4 MA's), (Start: 23 @47386 has 1 MA's), (28, 47311), (39, 47221), (45, 47194), (48, 47161), (54, 47131), (62, 47095),

Gene: EniyanLRS_84 Start: 53647, Stop: 54018, Start Num: 19

Candidate Starts for EniyanLRS_84:

(15, 53635), (Start: 17 @53638 has 4 MA's), (Start: 18 @53641 has 8 MA's), (Start: 19 @53647 has 2 MA's), (Start: 23 @53671 has 1 MA's), (25, 53713), (27, 53725), (33, 53788), (34, 53794), (38, 53833), (41, 53848), (42, 53857), (44, 53863), (48, 53899), (51, 53911), (52, 53923), (54, 53929), (65, 53986),

(66, 54004),

Gene: Exiguo_53 Start: 47428, Stop: 47075, Start Num: 17

Candidate Starts for Exiguo_53:

(Start: 12 @47437 has 17 MA's), (Start: 17 @47428 has 4 MA's), (Start: 23 @47398 has 1 MA's), (28, 47323), (39, 47233), (45, 47206), (48, 47173), (54, 47143), (62, 47107),

Gene: FelixAlejandro_58 Start: 49931, Stop: 49569, Start Num: 12

Candidate Starts for FelixAlejandro_58:

(Start: 12 @49931 has 17 MA's), (Start: 17 @49922 has 4 MA's), (Start: 23 @49892 has 1 MA's), (28, 49817), (39, 49727), (43, 49706), (45, 49700), (48, 49667), (54, 49637), (62, 49601),

Gene: Filch_114 Start: 63550, Stop: 63882, Start Num: 8

Candidate Starts for Filch_114:

(Start: 8 @63550 has 15 MA's), (16, 63580), (33, 63724), (39, 63772), (44, 63796), (56, 63868),

Gene: Flakey_53 Start: 48292, Stop: 47939, Start Num: 17

Candidate Starts for Flakey_53:

(Start: 12 @48301 has 17 MA's), (Start: 17 @48292 has 4 MA's), (Start: 23 @48262 has 1 MA's), (28, 48187), (39, 48097), (45, 48070), (48, 48037), (54, 48007), (62, 47971),

Gene: Gaia_125 Start: 69310, Stop: 69603, Start Num: 18

Candidate Starts for Gaia_125:

(Start: 18 @69310 has 8 MA's), (Start: 21 @69316 has 1 MA's), (Start: 23 @69334 has 1 MA's), (28, 69409), (37, 69481), (39, 69490), (49, 69556), (52, 69574), (54, 69580), (56, 69586),

Gene: Goku_111 Start: 64093, Stop: 64425, Start Num: 8

Candidate Starts for Goku_111:

(Start: 8 @64093 has 15 MA's), (16, 64123), (33, 64267), (39, 64315), (44, 64339), (56, 64411),

Gene: Goldilocks_115 Start: 63774, Stop: 64106, Start Num: 8

Candidate Starts for Goldilocks_115:

(Start: 8 @63774 has 15 MA's), (16, 63804), (33, 63948), (39, 63996), (44, 64020), (56, 64092),

Gene: Gorko_53 Start: 47420, Stop: 47067, Start Num: 17

Candidate Starts for Gorko_53:

(Start: 12 @47429 has 17 MA's), (Start: 17 @47420 has 4 MA's), (Start: 23 @47390 has 1 MA's), (28, 47315), (39, 47225), (45, 47198), (48, 47165), (54, 47135), (62, 47099),

Gene: GourdThymes_54 Start: 48303, Stop: 47941, Start Num: 12

Candidate Starts for GourdThymes_54:

(Start: 12 @48303 has 17 MA's), (Start: 17 @48294 has 4 MA's), (Start: 23 @48264 has 1 MA's), (28, 48189), (39, 48099), (45, 48072), (48, 48039), (54, 48009), (62, 47973),

Gene: Gudmit_64 Start: 38580, Stop: 38909, Start Num: 18

Candidate Starts for Gudmit_64:

(1, 38091), (2, 38199), (3, 38298), (Start: 18 @38580 has 8 MA's), (Start: 23 @38610 has 1 MA's), (27, 38664), (28, 38685), (30, 38688), (36, 38742), (43, 38784), (44, 38787),

Gene: Holt_117 Start: 64172, Stop: 64504, Start Num: 8

Candidate Starts for Holt_117:

(Start: 8 @64172 has 15 MA's), (16, 64202), (33, 64346), (39, 64394), (44, 64418), (56, 64490),

Gene: Hotorobo_54 Start: 48308, Stop: 47946, Start Num: 12

Candidate Starts for Hotorobo_54:

(Start: 12 @48308 has 17 MA's), (Start: 17 @48299 has 4 MA's), (Start: 23 @48269 has 1 MA's), (28, 48194), (39, 48104), (45, 48077), (48, 48044), (54, 48014), (62, 47978),

Gene: Icee_113 Start: 63282, Stop: 63614, Start Num: 8

Candidate Starts for Icee_113:

(Start: 8 @63282 has 15 MA's), (16, 63312), (33, 63456), (39, 63504), (44, 63528), (56, 63600),

Gene: Inca_108 Start: 61449, Stop: 61823, Start Num: 5

Candidate Starts for Inca_108:

(Start: 5 @61449 has 1 MA's), (Start: 8 @61491 has 15 MA's), (16, 61521), (33, 61665), (39, 61713), (44, 61737), (56, 61809),

Gene: Island3_56 Start: 37993, Stop: 38289, Start Num: 18

Candidate Starts for Island3_56:

(9, 37969), (Start: 18 @37993 has 8 MA's), (Start: 23 @38017 has 1 MA's), (24, 38047), (27, 38071), (36, 38149), (37, 38161), (39, 38170), (43, 38191), (55, 38260),

Gene: JaNo_91 Start: 60681, Stop: 60998, Start Num: 19

Candidate Starts for JaNo_91:

(7, 60636), (Start: 19 @60681 has 2 MA's), (20, 60684), (Start: 23 @60705 has 1 MA's), (28, 60780), (35, 60810), (36, 60828), (44, 60873), (52, 60933), (54, 60939),

Gene: JasmineDragon_34 Start: 23733, Stop: 24083, Start Num: 23

Candidate Starts for JasmineDragon_34:

(Start: 18 @23709 has 8 MA's), (Start: 23 @23733 has 1 MA's), (31, 23826), (36, 23898), (44, 23946), (58, 24021),

Gene: JeTaime_110 Start: 63384, Stop: 63716, Start Num: 8

Candidate Starts for JeTaime_110:

(Start: 8 @63384 has 15 MA's), (16, 63414), (33, 63558), (39, 63606), (44, 63630), (56, 63702),

Gene: Jellybones_56 Start: 49403, Stop: 49041, Start Num: 12

Candidate Starts for Jellybones_56:

(Start: 12 @49403 has 17 MA's), (Start: 17 @49394 has 4 MA's), (Start: 23 @49364 has 1 MA's), (28, 49289), (39, 49199), (45, 49172), (48, 49139), (54, 49109), (56, 49103),

Gene: John316_57 Start: 49466, Stop: 49104, Start Num: 12

Candidate Starts for John316_57:

(Start: 12 @49466 has 17 MA's), (Start: 17 @49457 has 4 MA's), (Start: 23 @49427 has 1 MA's), (28, 49352), (39, 49262), (45, 49235), (48, 49202), (54, 49172), (62, 49136),

Gene: Jstan_31 Start: 24469, Stop: 24813, Start Num: 23

Candidate Starts for Jstan_31:

(4, 24280), (Start: 18 @24445 has 8 MA's), (Start: 23 @24469 has 1 MA's),

Gene: Kimchi_116 Start: 63899, Stop: 64231, Start Num: 8

Candidate Starts for Kimchi_116:

(Start: 8 @63899 has 15 MA's), (16, 63929), (33, 64073), (39, 64121), (44, 64145), (56, 64217),

Gene: LittleE_170 Start: 88113, Stop: 88469, Start Num: 11

Candidate Starts for LittleE_170:

(Start: 11 @88113 has 9 MA's), (Start: 23 @88155 has 1 MA's), (28, 88230), (39, 88311), (54, 88404), (56, 88410), (57, 88413), (60, 88434), (64, 88458),

Gene: Lizzo_54 Start: 48297, Stop: 47935, Start Num: 12

Candidate Starts for Lizzo_54:

(Start: 12 @48297 has 17 MA's), (Start: 17 @48288 has 4 MA's), (Start: 23 @48258 has 1 MA's), (28, 48183), (39, 48093), (45, 48066), (48, 48033), (54, 48003), (62, 47967),

Gene: Lucky2013_159 Start: 83586, Stop: 83966, Start Num: 11

Candidate Starts for Lucky2013_159:

(Start: 11 @83586 has 9 MA's), (Start: 23 @83628 has 1 MA's), (28, 83703), (39, 83784), (54, 83877), (56, 83883), (57, 83886), (60, 83907), (64, 83931), (67, 83955),

Gene: Marshmallow_110 Start: 64096, Stop: 64428, Start Num: 8

Candidate Starts for Marshmallow_110:

(Start: 8 @64096 has 15 MA's), (16, 64126), (33, 64270), (39, 64318), (44, 64342), (56, 64414),

Gene: MiaZeal_166 Start: 84733, Stop: 85113, Start Num: 11

Candidate Starts for MiaZeal_166:

(Start: 11 @84733 has 9 MA's), (Start: 23 @84775 has 1 MA's), (28, 84850), (39, 84931), (54, 85024), (56, 85030), (57, 85033), (60, 85054), (64, 85078), (67, 85102),

Gene: MiniMommy_34 Start: 23734, Stop: 24084, Start Num: 23

Candidate Starts for MiniMommy_34:

(Start: 18 @23710 has 8 MA's), (Start: 23 @23734 has 1 MA's), (31, 23827), (36, 23899), (44, 23947), (58, 24022),

Gene: Monty_53 Start: 47447, Stop: 47085, Start Num: 12

Candidate Starts for Monty_53:

(Start: 12 @47447 has 17 MA's), (Start: 17 @47438 has 4 MA's), (Start: 23 @47408 has 1 MA's), (28, 47333), (39, 47243), (45, 47216), (48, 47183), (54, 47153), (62, 47117),

Gene: Mordred_92 Start: 60806, Stop: 61123, Start Num: 19

Candidate Starts for Mordred_92:

(7, 60761), (Start: 19 @60806 has 2 MA's), (20, 60809), (Start: 23 @60830 has 1 MA's), (28, 60905), (35, 60935), (36, 60953), (44, 60998), (52, 61058), (54, 61064),

Gene: MoyaNatalis_91 Start: 60689, Stop: 61006, Start Num: 19

Candidate Starts for MoyaNatalis_91:

(7, 60644), (Start: 19 @60689 has 2 MA's), (20, 60692), (Start: 23 @60713 has 1 MA's), (28, 60788), (35, 60818), (36, 60836), (44, 60881), (52, 60941), (54, 60947),

Gene: Msay19_58 Start: 49817, Stop: 49455, Start Num: 12

Candidate Starts for Msay19_58:

(Start: 12 @49817 has 17 MA's), (Start: 17 @49808 has 4 MA's), (Start: 23 @49778 has 1 MA's), (28, 49703), (39, 49613), (43, 49592), (45, 49586), (48, 49553), (54, 49523), (56, 49517),

Gene: Nebkiss_126 Start: 68242, Stop: 68529, Start Num: 21

Candidate Starts for Nebkiss_126:

(Start: 18 @68236 has 8 MA's), (Start: 21 @68242 has 1 MA's), (Start: 23 @68260 has 1 MA's), (28, 68335), (37, 68407), (39, 68416), (49, 68482), (52, 68500), (54, 68506), (56, 68512),

Gene: Nimrod_112 Start: 64244, Stop: 64576, Start Num: 8

Candidate Starts for Nimrod_112:

(Start: 8 @64244 has 15 MA's), (16, 64274), (33, 64418), (39, 64466), (44, 64490), (56, 64562),

Gene: Optimus_161 Start: 87411, Stop: 87791, Start Num: 11

Candidate Starts for Optimus_161:

(Start: 11 @87411 has 9 MA's), (Start: 23 @87453 has 1 MA's), (28, 87528), (39, 87609), (54, 87702), (56, 87708), (57, 87711), (67, 87780),

Gene: Poland_60 Start: 49796, Stop: 49434, Start Num: 12

Candidate Starts for Poland_60:

(Start: 12 @49796 has 17 MA's), (Start: 17 @49787 has 4 MA's), (Start: 23 @49757 has 1 MA's), (28, 49682), (39, 49592), (43, 49571), (45, 49565), (48, 49532), (54, 49502), (56, 49496),

Gene: Porcelain_163 Start: 84532, Stop: 84912, Start Num: 11

Candidate Starts for Porcelain_163:

(Start: 11 @84532 has 9 MA's), (Start: 23 @84574 has 1 MA's), (28, 84649), (39, 84730), (54, 84823), (56, 84829), (57, 84832), (60, 84853), (64, 84877), (67, 84901),

Gene: Porky_110 Start: 63022, Stop: 63354, Start Num: 8

Candidate Starts for Porky_110:

(Start: 8 @63022 has 15 MA's), (16, 63052), (33, 63196), (39, 63244), (44, 63268), (56, 63340),

Gene: RedWattleHog_124 Start: 92547, Stop: 92891, Start Num: 18

Candidate Starts for RedWattleHog_124:

(Start: 18 @92547 has 8 MA's), (26, 92622), (32, 92676), (36, 92709), (42, 92748), (46, 92769), (55, 92820), (57, 92826), (61, 92850), (63, 92859),

Gene: RemRem_55 Start: 47437, Stop: 47075, Start Num: 12

Candidate Starts for RemRem_55:

(Start: 12 @47437 has 17 MA's), (Start: 17 @47428 has 4 MA's), (Start: 23 @47398 has 1 MA's), (28, 47323), (39, 47233), (45, 47206), (48, 47173), (54, 47143), (62, 47107),

Gene: Sam12_53 Start: 47437, Stop: 47075, Start Num: 12

Candidate Starts for Sam12_53:

(Start: 12 @47437 has 17 MA's), (Start: 17 @47428 has 4 MA's), (Start: 23 @47398 has 1 MA's), (28, 47323), (39, 47233), (45, 47206), (48, 47173), (54, 47143), (62, 47107),

Gene: ShakeltOph_34 Start: 23733, Stop: 24083, Start Num: 23

Candidate Starts for ShakeltOph_34:

(Start: 18 @23709 has 8 MA's), (Start: 23 @23733 has 1 MA's), (31, 23826), (36, 23898), (44, 23946), (58, 24021),

Gene: Sombrero_54 Start: 47804, Stop: 47439, Start Num: 12

Candidate Starts for Sombrero_54:

(Start: 12 @47804 has 17 MA's), (Start: 17 @47795 has 4 MA's), (Start: 23 @47765 has 1 MA's), (28, 47690), (39, 47600), (45, 47573), (48, 47540), (54, 47510), (56, 47504),

Gene: Squibbles_53 Start: 48300, Stop: 47935, Start Num: 12

Candidate Starts for Squibbles_53:

(Start: 12 @48300 has 17 MA's), (Start: 17 @48291 has 4 MA's), (Start: 23 @48261 has 1 MA's), (28, 48186), (39, 48096), (45, 48069), (48, 48036), (54, 48006), (62, 47970),

Gene: Squint_157 Start: 84398, Stop: 84778, Start Num: 11

Candidate Starts for Squint_157:

(Start: 11 @84398 has 9 MA's), (Start: 23 @84440 has 1 MA's), (28, 84515), (54, 84689), (56, 84695), (57, 84698), (67, 84767),

Gene: Stank_114 Start: 63971, Stop: 64303, Start Num: 8

Candidate Starts for Stank_114:

(Start: 8 @63971 has 15 MA's), (16, 64001), (33, 64145), (39, 64193), (44, 64217), (56, 64289),

Gene: Stormageddon_123 Start: 92481, Stop: 92825, Start Num: 18

Candidate Starts for Stormageddon_123:

(Start: 18 @92481 has 8 MA's), (26, 92556), (32, 92610), (36, 92643), (42, 92682), (46, 92703), (55, 92754), (57, 92760), (61, 92784), (63, 92793),

Gene: Superphikiman_160 Start: 83453, Stop: 83833, Start Num: 11

Candidate Starts for Superphikiman_160:

(Start: 11 @83453 has 9 MA's), (Start: 23 @83495 has 1 MA's), (28, 83570), (54, 83744), (56, 83750), (57, 83753), (67, 83822),

Gene: TBrady12_115 Start: 63408, Stop: 63740, Start Num: 8

Candidate Starts for TBrady12_115:

(Start: 8 @63408 has 15 MA's), (16, 63438), (33, 63582), (39, 63630), (44, 63654), (56, 63726),

Gene: Teaspoon_107 Start: 63986, Stop: 64288, Start Num: 16

Candidate Starts for Teaspoon_107:

(Start: 8 @63956 has 15 MA's), (16, 63986), (33, 64130), (39, 64178), (44, 64202), (56, 64274),

Gene: VroomVroom_33 Start: 23804, Stop: 24178, Start Num: 18

Candidate Starts for VroomVroom_33:

(Start: 18 @23804 has 8 MA's), (Start: 23 @23828 has 1 MA's), (31, 23921), (36, 23993), (40, 24017), (44, 24041), (58, 24116),

Gene: Wiggin_114 Start: 63401, Stop: 63733, Start Num: 8

Candidate Starts for Wiggin_114:

(Start: 8 @63401 has 15 MA's), (16, 63431), (33, 63575), (39, 63623), (44, 63647), (56, 63719),

Gene: Wildwest_28 Start: 22362, Stop: 22703, Start Num: 23

Candidate Starts for Wildwest_28:

(Start: 18 @22338 has 8 MA's), (Start: 23 @22362 has 1 MA's), (39, 22548),

Gene: Xandras_109 Start: 63224, Stop: 63556, Start Num: 8

Candidate Starts for Xandras_109:

(Start: 8 @63224 has 15 MA's), (16, 63254), (33, 63398), (39, 63446), (44, 63470), (56, 63542),