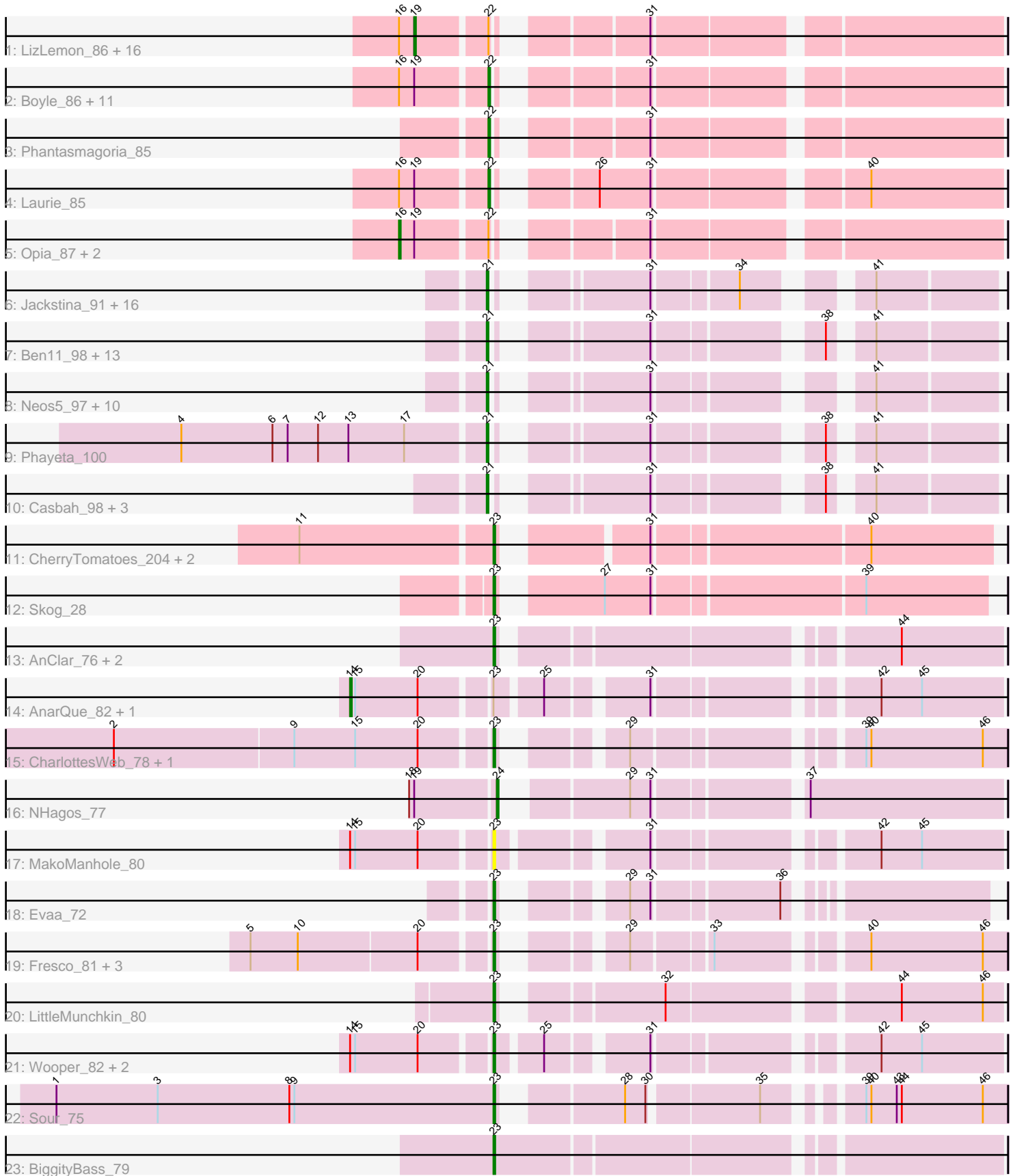


Pham 161751



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 161751 Report

This analysis was run 04/28/24 on database version 559.

Pham number 161751 has 105 members, 10 are drafts.

Phages represented in each track:

- Track 1 : LizLemon_86, Sabella_86, Godines_86, Arbitrator_83, Glass_88, Brownie5_86, Qyrzula_77, Ares_86, ItsyBitsy1_83, FrenchFry_87, MasterPo_87, Tinciduntolum_87, Lephleur_86, Holeinone_86, Hedgerow_86, Kheth_86, Blocker23_86
- Track 2 : Boyle_86, Kaleb_86, Rhinoforte_86, TA17A_87, Eaglehorse_87, Calamitous_87, Faze9_85, Coffee_85, Lars_87, West99_86, Allegro_86, Rosebush_84
- Track 3 : Phantasmagoria_85
- Track 4 : Laurie_85
- Track 5 : Opia_87, Bananafish_87, Tres_86
- Track 6 : Jackstina_91, Tydolla_94, SynergyX_99, Chandler_98, RagingRooster_98, GlenHope_99, Heathcliff_98, Baloo_97, Marley1013_96, Morty007_96, Devonte_96, Deenasa_99, Yahalom_96, Daisy_97, Pipefish_97, Halfpint_98, Compostia_97
- Track 7 : Ben11_98, Gervas_99, Akoma_99, Yinz_96, Philly_97, Audrey_98, Rita1961_99, Gadget_97, Bernardo_95, MmasiCarm_99, Athena_100, RomaT_98, Phaedrus_93, Kamiyu_98
- Track 8 : Neos5_97, OrangeOswald_97, SlippinJimmy_101, Phlyer_98, HarveySr_95, Corofin_98, LestyG_96, Briakila_99, Abinghost_98, Nozo_98, ChaChing_98
- Track 9 : Phayeta_100
- Track 10 : Casbah_98, Kronus_98, Obutu_100, Mortcellus_98
- Track 11 : CherryTomatoes_204, Pupper_197, SCentae_196
- Track 12 : Skog_28
- Track 13 : AnClar_76, Yago84_78, Sisko_79
- Track 14 : AnarQue_82, CloverMinnie_80
- Track 15 : CharlottesWeb_78, Mariokart_78
- Track 16 : NHagos_77
- Track 17 : MakoManhole_80
- Track 18 : Evaa_72
- Track 19 : Fresco_81, Axumite_81, Shatter_81, Ligma_81
- Track 20 : LittleMunchkin_80
- Track 21 : Wooper_82, CaiB_81, MossRose_80
- Track 22 : Sour_75
- Track 23 : BiggityBass_79

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

The start number called the most often in the published annotations is 21, it was called in 44 of the 95 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_98, Akoma_99, Athena_100, Audrey_98, Baloo_97, Ben11_98, Bernardo_95, Briakila_99, Casbah_98, ChaChing_98, Chandler_98, Compostia_97, Corofin_98, Daisy_97, Deenasa_99, Devonte_96, Gadget_97, Gervas_99, GlenHope_99, Halfpint_98, HarveySr_95, Heathcliff_98, Jackstina_91, Kamiyu_98, Kronus_98, LestyG_96, Marley1013_96, MmasiCarm_99, Mortcellus_98, Morty007_96, Neos5_97, Nozo_98, Obutu_100, OrangeOswald_97, Phaedrus_93, Phayeta_100, Philly_97, Phlyer_98, Pipefish_97, RagingRooster_98, Rita1961_99, RomaT_98, SlippinJimmy_101, SynergyX_99, Tydolla_94, Yahalom_96, Yinz_96,

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

-

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

- Allegro_86, AnClar_76, AnarQue_82, Arbiter_83, Ares_86, Axumite_81, Bananafish_87, BiggityBass_79, Blocker23_86, Boyle_86, Brownie5_86, CaiB_81, Calamitous_87, CharlottesWeb_78, CherryTomatoes_204, CloverMinnie_80, Coffee_85, Eaglehorse_87, Evaa_72, Faze9_85, FrenchFry_87, Fresco_81, Glass_88, Godines_86, Hedgerow_86, Holeinone_86, ItsyBitsy1_83, Kaleb_86, Kheth_86, Lars_87, Laurie_85, Lephleur_86, Ligma_81, LittleMunchkin_80, LizLemon_86, MakoManhole_80, Mariokart_78, MasterPo_87, MossRose_80, NHagos_77, Opia_87, Phantasmagoria_85, Pupper_197, Qyrzula_77, Rhinoforte_86, Rosebush_84, SCentae_196, Sabella_86, Shatter_81, Sisko_79, Skog_28, Sour_75, TA17A_87, Tinciduntolum_87, Tres_86, West99_86, Wooper_82, Yago84_78,

Summary by start number:

Start 14:

- Found in 6 of 105 (5.7%) of genes in pham
- Manual Annotations of this start: 2 of 95
- Called 33.3% of time when present
- Phage (with cluster) where this start called: AnarQue_82 (DR), CloverMinnie_80 (DR),

Start 16:

- Found in 33 of 105 (31.4%) of genes in pham
- Manual Annotations of this start: 3 of 95
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Bananafish_87 (B2), Opia_87 (B2), Tres_86 (B2),

Start 19:

- Found in 34 of 105 (32.4%) of genes in pham
- Manual Annotations of this start: 17 of 95
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Arbiter_83 (B2), Ares_86 (B2), Blocker23_86 (B2), Brownie5_86 (B2), FrenchFry_87 (B2), Glass_88 (B2),

Godines_86 (B2), Hedgerow_86 (B2), Holeinone_86 (B2), ItsyBitsy1_83 (B2), Kheth_86 (B2), Lephleur_86 (B2), LizLemon_86 (B2), MasterPo_87 (B2), Qyrzula_77 (B2), Sabella_86 (B2), Tinciduntolum_87 (B2),

Start 21:

- Found in 47 of 105 (44.8%) of genes in pham
- Manual Annotations of this start: 44 of 95
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abinghost_98 (B3), Akoma_99 (B3), Athena_100 (B3), Audrey_98 (B3), Baloo_97 (B3), Ben11_98 (B3), Bernardo_95 (B3), Briakila_99 (B3), Casbah_98 (B3), ChaChing_98 (B3), Chandler_98 (B3), Compostia_97 (B3), Corofin_98 (B3), Daisy_97 (B3), Deenasa_99 (B3), Devonte_96 (B3), Gadget_97 (B3), Gervas_99 (B3), GlenHope_99 (B3), Halfpint_98 (B3), HarveySr_95 (B3), Heathcliff_98 (B3), Jackstina_91 (B3), Kamiyu_98 (B3), Kronus_98 (B3), LestyG_96 (B3), Marley1013_96 (B3), MmasiCarm_99 (B3), Mortcellus_98 (B3), Morty007_96 (B3), Neos5_97 (B3), Nozo_98 (B3), Obutu_100 (B3), OrangeOswald_97 (B3), Phaedrus_93 (B3), Phayeta_100 (B3), Philly_97 (B3), Phlyer_98 (B3), Pipefish_97 (B3), RagingRooster_98 (B3), Rita1961_99 (B3), RomaT_98 (B3), SlippinJimmy_101 (B3), SynergyX_99 (B3), Tydolla_94 (B3), Yahalom_96 (B3), Yinz_96 (B3),

Start 22:

- Found in 34 of 105 (32.4%) of genes in pham
- Manual Annotations of this start: 12 of 95
- Called 41.2% of time when present
- Phage (with cluster) where this start called: Allegro_86 (B2), Boyle_86 (B2), Calamitous_87 (B2), Coffee_85 (B2), Eaglehorse_87 (B2), Faze9_85 (B2), Kaleb_86 (B2), Lars_87 (B2), Laurie_85 (B2), Phantasmagoria_85 (B2), Rhinoforte_86 (B2), Rosebush_84 (B2), TA17A_87 (B2), West99_86 (B2),

Start 23:

- Found in 23 of 105 (21.9%) of genes in pham
- Manual Annotations of this start: 16 of 95
- Called 91.3% of time when present
- Phage (with cluster) where this start called: AnClar_76 (DR), Axumite_81 (DR), BiggityBass_79 (DR), CaiB_81 (DR), CharlottesWeb_78 (DR), CherryTomatoes_204 (DO), Evaa_72 (DR), Fresco_81 (DR), Ligma_81 (DR), LittleMunchkin_80 (DR), MakoManhole_80 (DR), Mariokart_78 (DR), MossRose_80 (DR), Pupper_197 (DO), SCentae_196 (DO), Shatter_81 (DR), Sisko_79 (DR), Skog_28 (DO), Sour_75 (DR), Wooper_82 (DR), Yago84_78 (DR),

Start 24:

- Found in 1 of 105 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 95
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NHagos_77 (DR),

Summary by clusters:

There are 4 clusters represented in this pham: DO, DR, B2, B3,

Info for manual annotations of cluster B2:

- Start number 16 was manually annotated 3 times for cluster B2.

- Start number 19 was manually annotated 17 times for cluster B2.
- Start number 22 was manually annotated 12 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 21 was manually annotated 44 times for cluster B3.

Info for manual annotations of cluster DO:

- Start number 23 was manually annotated 3 times for cluster DO.

Info for manual annotations of cluster DR:

- Start number 14 was manually annotated 2 times for cluster DR.
- Start number 23 was manually annotated 13 times for cluster DR.
- Start number 24 was manually annotated 1 time for cluster DR.

Gene Information:

Gene: Abinghost_98 Start: 67232, Stop: 66996, Start Num: 21

Candidate Starts for Abinghost_98:

(Start: 21 @67232 has 44 MA's), (31, 67163), (41, 67064),

Gene: Akoma_99 Start: 67309, Stop: 67073, Start Num: 21

Candidate Starts for Akoma_99:

(Start: 21 @67309 has 44 MA's), (31, 67240), (38, 67159), (41, 67141),

Gene: Allegro_86 Start: 65189, Stop: 64932, Start Num: 22

Candidate Starts for Allegro_86:

(Start: 16 @65234 has 3 MA's), (Start: 19 @65225 has 17 MA's), (Start: 22 @65189 has 12 MA's), (31, 65120),

Gene: AnClar_76 Start: 59906, Stop: 59643, Start Num: 23

Candidate Starts for AnClar_76:

(Start: 23 @59906 has 16 MA's), (44, 59702),

Gene: AnarQue_82 Start: 60514, Stop: 60182, Start Num: 14

Candidate Starts for AnarQue_82:

(Start: 14 @60514 has 2 MA's), (15, 60511), (20, 60475), (Start: 23 @60439 has 16 MA's), (25, 60415), (31, 60364), (42, 60253), (45, 60229),

Gene: Arbiter_83 Start: 65266, Stop: 64973, Start Num: 19

Candidate Starts for Arbiter_83:

(Start: 16 @65275 has 3 MA's), (Start: 19 @65266 has 17 MA's), (Start: 22 @65230 has 12 MA's), (31, 65161),

Gene: Ares_86 Start: 65225, Stop: 64932, Start Num: 19

Candidate Starts for Ares_86:

(Start: 16 @65234 has 3 MA's), (Start: 19 @65225 has 17 MA's), (Start: 22 @65189 has 12 MA's), (31, 65120),

Gene: Athena_100 Start: 68005, Stop: 67769, Start Num: 21

Candidate Starts for Athena_100:

(Start: 21 @68005 has 44 MA's), (31, 67936), (38, 67855), (41, 67837),

Gene: Audrey_98 Start: 67259, Stop: 67023, Start Num: 21
Candidate Starts for Audrey_98:
(Start: 21 @67259 has 44 MA's), (31, 67190), (38, 67109), (41, 67091),

Gene: Axumite_81 Start: 59787, Stop: 59539, Start Num: 23
Candidate Starts for Axumite_81:
(5, 59919), (10, 59892), (20, 59823), (Start: 23 @59787 has 16 MA's), (29, 59736), (33, 59694), (40, 59619), (46, 59553),

Gene: Baloo_97 Start: 67112, Stop: 66876, Start Num: 21
Candidate Starts for Baloo_97:
(Start: 21 @67112 has 44 MA's), (31, 67043), (34, 66998), (41, 66944),

Gene: Bananafish_87 Start: 65171, Stop: 64869, Start Num: 16
Candidate Starts for Bananafish_87:
(Start: 16 @65171 has 3 MA's), (Start: 19 @65162 has 17 MA's), (Start: 22 @65126 has 12 MA's), (31, 65057),

Gene: Ben11_98 Start: 67489, Stop: 67253, Start Num: 21
Candidate Starts for Ben11_98:
(Start: 21 @67489 has 44 MA's), (31, 67420), (38, 67339), (41, 67321),

Gene: Bernardo_95 Start: 66783, Stop: 66547, Start Num: 21
Candidate Starts for Bernardo_95:
(Start: 21 @66783 has 44 MA's), (31, 66714), (38, 66633), (41, 66615),

Gene: BiggityBass_79 Start: 61390, Stop: 61115, Start Num: 23
Candidate Starts for BiggityBass_79:
(Start: 23 @61390 has 16 MA's),

Gene: Blocker23_86 Start: 65227, Stop: 64934, Start Num: 19
Candidate Starts for Blocker23_86:
(Start: 16 @65236 has 3 MA's), (Start: 19 @65227 has 17 MA's), (Start: 22 @65191 has 12 MA's), (31, 65122),

Gene: Boyle_86 Start: 65238, Stop: 64981, Start Num: 22
Candidate Starts for Boyle_86:
(Start: 16 @65283 has 3 MA's), (Start: 19 @65274 has 17 MA's), (Start: 22 @65238 has 12 MA's), (31, 65169),

Gene: Briakila_99 Start: 67763, Stop: 67527, Start Num: 21
Candidate Starts for Briakila_99:
(Start: 21 @67763 has 44 MA's), (31, 67694), (41, 67595),

Gene: Brownie5_86 Start: 65274, Stop: 64981, Start Num: 19
Candidate Starts for Brownie5_86:
(Start: 16 @65283 has 3 MA's), (Start: 19 @65274 has 17 MA's), (Start: 22 @65238 has 12 MA's), (31, 65169),

Gene: CaiB_81 Start: 60237, Stop: 59980, Start Num: 23
Candidate Starts for CaiB_81:

(Start: 14 @60312 has 2 MA's), (15, 60309), (20, 60273), (Start: 23 @60237 has 16 MA's), (25, 60213), (31, 60162), (42, 60051), (45, 60027),

Gene: Calamitous_87 Start: 65121, Stop: 64864, Start Num: 22

Candidate Starts for Calamitous_87:

(Start: 16 @65166 has 3 MA's), (Start: 19 @65157 has 17 MA's), (Start: 22 @65121 has 12 MA's), (31, 65052),

Gene: Casbah_98 Start: 67574, Stop: 67338, Start Num: 21

Candidate Starts for Casbah_98:

(Start: 21 @67574 has 44 MA's), (31, 67505), (38, 67424), (41, 67406),

Gene: ChaChing_98 Start: 67266, Stop: 67036, Start Num: 21

Candidate Starts for ChaChing_98:

(Start: 21 @67266 has 44 MA's), (31, 67203), (41, 67104),

Gene: Chandler_98 Start: 68048, Stop: 67812, Start Num: 21

Candidate Starts for Chandler_98:

(Start: 21 @68048 has 44 MA's), (31, 67979), (34, 67934), (41, 67880),

Gene: CharlottesWeb_78 Start: 58743, Stop: 58495, Start Num: 23

Candidate Starts for CharlottesWeb_78:

(2, 58956), (9, 58851), (15, 58815), (20, 58779), (Start: 23 @58743 has 16 MA's), (29, 58692), (39, 58578), (40, 58575), (46, 58509),

Gene: CherryTomatoes_204 Start: 137102, Stop: 137362, Start Num: 23

Candidate Starts for CherryTomatoes_204:

(11, 136994), (Start: 23 @137102 has 16 MA's), (31, 137171), (40, 137291),

Gene: CloverMinnie_80 Start: 59790, Stop: 59458, Start Num: 14

Candidate Starts for CloverMinnie_80:

(Start: 14 @59790 has 2 MA's), (15, 59787), (20, 59751), (Start: 23 @59715 has 16 MA's), (25, 59691), (31, 59640), (42, 59529), (45, 59505),

Gene: Coffee_85 Start: 65231, Stop: 64974, Start Num: 22

Candidate Starts for Coffee_85:

(Start: 16 @65276 has 3 MA's), (Start: 19 @65267 has 17 MA's), (Start: 22 @65231 has 12 MA's), (31, 65162),

Gene: Compostia_97 Start: 67726, Stop: 67490, Start Num: 21

Candidate Starts for Compostia_97:

(Start: 21 @67726 has 44 MA's), (31, 67657), (34, 67612), (41, 67558),

Gene: Corofin_98 Start: 67283, Stop: 67047, Start Num: 21

Candidate Starts for Corofin_98:

(Start: 21 @67283 has 44 MA's), (31, 67214), (41, 67115),

Gene: Daisy_97 Start: 66832, Stop: 66596, Start Num: 21

Candidate Starts for Daisy_97:

(Start: 21 @66832 has 44 MA's), (31, 66763), (34, 66718), (41, 66664),

Gene: Deenasa_99 Start: 68486, Stop: 68250, Start Num: 21

Candidate Starts for Deenasa_99:

(Start: 21 @68486 has 44 MA's), (31, 68417), (34, 68372), (41, 68318),

Gene: Devonte_96 Start: 66898, Stop: 66662, Start Num: 21

Candidate Starts for Devonte_96:

(Start: 21 @66898 has 44 MA's), (31, 66829), (34, 66784), (41, 66730),

Gene: Eaglehorse_87 Start: 65116, Stop: 64859, Start Num: 22

Candidate Starts for Eaglehorse_87:

(Start: 16 @65161 has 3 MA's), (Start: 19 @65152 has 17 MA's), (Start: 22 @65116 has 12 MA's), (31, 65047),

Gene: Evaa_72 Start: 54428, Stop: 54195, Start Num: 23

Candidate Starts for Evaa_72:

(Start: 23 @54428 has 16 MA's), (29, 54377), (31, 54365), (36, 54296),

Gene: Faze9_85 Start: 65253, Stop: 64996, Start Num: 22

Candidate Starts for Faze9_85:

(Start: 16 @65298 has 3 MA's), (Start: 19 @65289 has 17 MA's), (Start: 22 @65253 has 12 MA's), (31, 65184),

Gene: FrenchFry_87 Start: 65277, Stop: 64984, Start Num: 19

Candidate Starts for FrenchFry_87:

(Start: 16 @65286 has 3 MA's), (Start: 19 @65277 has 17 MA's), (Start: 22 @65241 has 12 MA's), (31, 65172),

Gene: Fresco_81 Start: 59793, Stop: 59545, Start Num: 23

Candidate Starts for Fresco_81:

(5, 59925), (10, 59898), (20, 59829), (Start: 23 @59793 has 16 MA's), (29, 59742), (33, 59700), (40, 59625), (46, 59559),

Gene: Gadget_97 Start: 66536, Stop: 66300, Start Num: 21

Candidate Starts for Gadget_97:

(Start: 21 @66536 has 44 MA's), (31, 66467), (38, 66386), (41, 66368),

Gene: Gervas_99 Start: 67727, Stop: 67491, Start Num: 21

Candidate Starts for Gervas_99:

(Start: 21 @67727 has 44 MA's), (31, 67658), (38, 67577), (41, 67559),

Gene: Glass_88 Start: 65283, Stop: 64990, Start Num: 19

Candidate Starts for Glass_88:

(Start: 16 @65292 has 3 MA's), (Start: 19 @65283 has 17 MA's), (Start: 22 @65247 has 12 MA's), (31, 65178),

Gene: GlenHope_99 Start: 67302, Stop: 67066, Start Num: 21

Candidate Starts for GlenHope_99:

(Start: 21 @67302 has 44 MA's), (31, 67233), (34, 67188), (41, 67134),

Gene: Godines_86 Start: 65188, Stop: 64895, Start Num: 19

Candidate Starts for Godines_86:

(Start: 16 @65197 has 3 MA's), (Start: 19 @65188 has 17 MA's), (Start: 22 @65152 has 12 MA's), (31, 65083),

Gene: Halfpint_98 Start: 67047, Stop: 66811, Start Num: 21

Candidate Starts for Halfpint_98:
(Start: 21 @67047 has 44 MA's), (31, 66978), (34, 66933), (41, 66879),

Gene: HarveySr_95 Start: 66371, Stop: 66135, Start Num: 21
Candidate Starts for HarveySr_95:
(Start: 21 @66371 has 44 MA's), (31, 66302), (41, 66203),

Gene: Heathcliff_98 Start: 67226, Stop: 66990, Start Num: 21
Candidate Starts for Heathcliff_98:
(Start: 21 @67226 has 44 MA's), (31, 67157), (34, 67112), (41, 67058),

Gene: Hedgerow_86 Start: 65240, Stop: 64947, Start Num: 19
Candidate Starts for Hedgerow_86:
(Start: 16 @65249 has 3 MA's), (Start: 19 @65240 has 17 MA's), (Start: 22 @65204 has 12 MA's),
(31, 65135),

Gene: Holeinone_86 Start: 65129, Stop: 64836, Start Num: 19
Candidate Starts for Holeinone_86:
(Start: 16 @65138 has 3 MA's), (Start: 19 @65129 has 17 MA's), (Start: 22 @65093 has 12 MA's),
(31, 65024),

Gene: ItsyBitsy1_83 Start: 65356, Stop: 65063, Start Num: 19
Candidate Starts for ItsyBitsy1_83:
(Start: 16 @65365 has 3 MA's), (Start: 19 @65356 has 17 MA's), (Start: 22 @65320 has 12 MA's),
(31, 65251),

Gene: Jackstina_91 Start: 67143, Stop: 66907, Start Num: 21
Candidate Starts for Jackstina_91:
(Start: 21 @67143 has 44 MA's), (31, 67074), (34, 67029), (41, 66975),

Gene: Kaleb_86 Start: 65250, Stop: 64993, Start Num: 22
Candidate Starts for Kaleb_86:
(Start: 16 @65295 has 3 MA's), (Start: 19 @65286 has 17 MA's), (Start: 22 @65250 has 12 MA's),
(31, 65181),

Gene: Kamiyu_98 Start: 67230, Stop: 66994, Start Num: 21
Candidate Starts for Kamiyu_98:
(Start: 21 @67230 has 44 MA's), (31, 67161), (38, 67080), (41, 67062),

Gene: Kheth_86 Start: 65192, Stop: 64899, Start Num: 19
Candidate Starts for Kheth_86:
(Start: 16 @65201 has 3 MA's), (Start: 19 @65192 has 17 MA's), (Start: 22 @65156 has 12 MA's),
(31, 65087),

Gene: Kronus_98 Start: 68315, Stop: 68079, Start Num: 21
Candidate Starts for Kronus_98:
(Start: 21 @68315 has 44 MA's), (31, 68246), (38, 68165), (41, 68147),

Gene: Lars_87 Start: 65218, Stop: 64961, Start Num: 22
Candidate Starts for Lars_87:
(Start: 16 @65263 has 3 MA's), (Start: 19 @65254 has 17 MA's), (Start: 22 @65218 has 12 MA's),
(31, 65149),

Gene: Laurie_85 Start: 64565, Stop: 64305, Start Num: 22
Candidate Starts for Laurie_85:
(Start: 16 @64610 has 3 MA's), (Start: 19 @64601 has 17 MA's), (Start: 22 @64565 has 12 MA's),
(26, 64523), (31, 64493), (40, 64382),

Gene: Lephleur_86 Start: 65111, Stop: 64818, Start Num: 19
Candidate Starts for Lephleur_86:
(Start: 16 @65120 has 3 MA's), (Start: 19 @65111 has 17 MA's), (Start: 22 @65075 has 12 MA's),
(31, 65006),

Gene: LestyG_96 Start: 66795, Stop: 66565, Start Num: 21
Candidate Starts for LestyG_96:
(Start: 21 @66795 has 44 MA's), (31, 66732), (41, 66633),

Gene: Ligma_81 Start: 59787, Stop: 59539, Start Num: 23
Candidate Starts for Ligma_81:
(5, 59919), (10, 59892), (20, 59823), (Start: 23 @59787 has 16 MA's), (29, 59736), (33, 59694), (40,
59619), (46, 59553),

Gene: LittleMunchkin_80 Start: 61488, Stop: 61228, Start Num: 23
Candidate Starts for LittleMunchkin_80:
(Start: 23 @61488 has 16 MA's), (32, 61410), (44, 61287), (46, 61239),

Gene: LizLemon_86 Start: 65282, Stop: 64989, Start Num: 19
Candidate Starts for LizLemon_86:
(Start: 16 @65291 has 3 MA's), (Start: 19 @65282 has 17 MA's), (Start: 22 @65246 has 12 MA's),
(31, 65177),

Gene: MakoManhole_80 Start: 60210, Stop: 59953, Start Num: 23
Candidate Starts for MakoManhole_80:
(Start: 14 @60285 has 2 MA's), (15, 60282), (20, 60246), (Start: 23 @60210 has 16 MA's), (31,
60135), (42, 60024), (45, 60000),

Gene: Mariokart_78 Start: 58981, Stop: 58733, Start Num: 23
Candidate Starts for Mariokart_78:
(2, 59194), (9, 59089), (15, 59053), (20, 59017), (Start: 23 @58981 has 16 MA's), (29, 58930), (39,
58816), (40, 58813), (46, 58747),

Gene: Marley1013_96 Start: 67761, Stop: 67525, Start Num: 21
Candidate Starts for Marley1013_96:
(Start: 21 @67761 has 44 MA's), (31, 67692), (34, 67647), (41, 67593),

Gene: MasterPo_87 Start: 65150, Stop: 64857, Start Num: 19
Candidate Starts for MasterPo_87:
(Start: 16 @65159 has 3 MA's), (Start: 19 @65150 has 17 MA's), (Start: 22 @65114 has 12 MA's),
(31, 65045),

Gene: MmasiCarm_99 Start: 67658, Stop: 67422, Start Num: 21
Candidate Starts for MmasiCarm_99:
(Start: 21 @67658 has 44 MA's), (31, 67589), (38, 67508), (41, 67490),

Gene: Mortcellus_98 Start: 68396, Stop: 68160, Start Num: 21
Candidate Starts for Mortcellus_98:

(Start: 21 @68396 has 44 MA's), (31, 68327), (38, 68246), (41, 68228),

Gene: Morty007_96 Start: 68028, Stop: 67792, Start Num: 21

Candidate Starts for Morty007_96:

(Start: 21 @68028 has 44 MA's), (31, 67959), (34, 67914), (41, 67860),

Gene: MossRose_80 Start: 59689, Stop: 59432, Start Num: 23

Candidate Starts for MossRose_80:

(Start: 14 @59764 has 2 MA's), (15, 59761), (20, 59725), (Start: 23 @59689 has 16 MA's), (25, 59665), (31, 59614), (42, 59503), (45, 59479),

Gene: NHagos_77 Start: 57942, Stop: 57682, Start Num: 24

Candidate Starts for NHagos_77:

(18, 57990), (Start: 19 @57987 has 17 MA's), (Start: 24 @57942 has 1 MA's), (29, 57885), (31, 57873), (37, 57795),

Gene: Neos5_97 Start: 67484, Stop: 67248, Start Num: 21

Candidate Starts for Neos5_97:

(Start: 21 @67484 has 44 MA's), (31, 67415), (41, 67316),

Gene: Nozo_98 Start: 68037, Stop: 67801, Start Num: 21

Candidate Starts for Nozo_98:

(Start: 21 @68037 has 44 MA's), (31, 67968), (41, 67869),

Gene: Obutu_100 Start: 67841, Stop: 67605, Start Num: 21

Candidate Starts for Obutu_100:

(Start: 21 @67841 has 44 MA's), (31, 67772), (38, 67691), (41, 67673),

Gene: Opia_87 Start: 65184, Stop: 64882, Start Num: 16

Candidate Starts for Opia_87:

(Start: 16 @65184 has 3 MA's), (Start: 19 @65175 has 17 MA's), (Start: 22 @65139 has 12 MA's), (31, 65070),

Gene: OrangeOswald_97 Start: 67272, Stop: 67036, Start Num: 21

Candidate Starts for OrangeOswald_97:

(Start: 21 @67272 has 44 MA's), (31, 67203), (41, 67104),

Gene: Phaedrus_93 Start: 66687, Stop: 66451, Start Num: 21

Candidate Starts for Phaedrus_93:

(Start: 21 @66687 has 44 MA's), (31, 66618), (38, 66537), (41, 66519),

Gene: Phantasmagoria_85 Start: 65121, Stop: 64864, Start Num: 22

Candidate Starts for Phantasmagoria_85:

(Start: 22 @65121 has 12 MA's), (31, 65052),

Gene: Phayeta_100 Start: 67522, Stop: 67286, Start Num: 21

Candidate Starts for Phayeta_100:

(4, 67696), (6, 67642), (7, 67633), (12, 67615), (13, 67597), (17, 67564), (Start: 21 @67522 has 44 MA's), (31, 67453), (38, 67372), (41, 67354),

Gene: Philly_97 Start: 67120, Stop: 66884, Start Num: 21

Candidate Starts for Philly_97:

(Start: 21 @67120 has 44 MA's), (31, 67051), (38, 66970), (41, 66952),

Gene: Phlyer_98 Start: 67976, Stop: 67746, Start Num: 21

Candidate Starts for Phlyer_98:

(Start: 21 @67976 has 44 MA's), (31, 67913), (41, 67814),

Gene: Pipefish_97 Start: 67656, Stop: 67420, Start Num: 21

Candidate Starts for Pipefish_97:

(Start: 21 @67656 has 44 MA's), (31, 67587), (34, 67542), (41, 67488),

Gene: Pupper_197 Start: 136964, Stop: 137224, Start Num: 23

Candidate Starts for Pupper_197:

(11, 136856), (Start: 23 @136964 has 16 MA's), (31, 137033), (40, 137153),

Gene: Qyrzula_77 Start: 65297, Stop: 65004, Start Num: 19

Candidate Starts for Qyrzula_77:

(Start: 16 @65306 has 3 MA's), (Start: 19 @65297 has 17 MA's), (Start: 22 @65261 has 12 MA's), (31, 65192),

Gene: RagingRooster_98 Start: 67268, Stop: 67032, Start Num: 21

Candidate Starts for RagingRooster_98:

(Start: 21 @67268 has 44 MA's), (31, 67199), (34, 67154), (41, 67100),

Gene: Rhinoforte_86 Start: 65158, Stop: 64901, Start Num: 22

Candidate Starts for Rhinoforte_86:

(Start: 16 @65203 has 3 MA's), (Start: 19 @65194 has 17 MA's), (Start: 22 @65158 has 12 MA's), (31, 65089),

Gene: Rita1961_99 Start: 67613, Stop: 67377, Start Num: 21

Candidate Starts for Rita1961_99:

(Start: 21 @67613 has 44 MA's), (31, 67544), (38, 67463), (41, 67445),

Gene: RomaT_98 Start: 67836, Stop: 67600, Start Num: 21

Candidate Starts for RomaT_98:

(Start: 21 @67836 has 44 MA's), (31, 67767), (38, 67686), (41, 67668),

Gene: Rosebush_84 Start: 65230, Stop: 64973, Start Num: 22

Candidate Starts for Rosebush_84:

(Start: 16 @65275 has 3 MA's), (Start: 19 @65266 has 17 MA's), (Start: 22 @65230 has 12 MA's), (31, 65161),

Gene: SCentae_196 Start: 137156, Stop: 137416, Start Num: 23

Candidate Starts for SCentae_196:

(11, 137048), (Start: 23 @137156 has 16 MA's), (31, 137225), (40, 137345),

Gene: Sabella_86 Start: 65102, Stop: 64809, Start Num: 19

Candidate Starts for Sabella_86:

(Start: 16 @65111 has 3 MA's), (Start: 19 @65102 has 17 MA's), (Start: 22 @65066 has 12 MA's), (31, 64997),

Gene: Shatter_81 Start: 59787, Stop: 59539, Start Num: 23

Candidate Starts for Shatter_81:

(5, 59919), (10, 59892), (20, 59823), (Start: 23 @59787 has 16 MA's), (29, 59736), (33, 59694), (40, 59619), (46, 59553),

Gene: Sisko_79 Start: 60232, Stop: 59969, Start Num: 23

Candidate Starts for Sisko_79:

(Start: 23 @60232 has 16 MA's), (44, 60028),

Gene: Skog_28 Start: 12845, Stop: 13108, Start Num: 23

Candidate Starts for Skog_28:

(Start: 23 @12845 has 16 MA's), (27, 12893), (31, 12920), (39, 13037),

Gene: SlippinJimmy_101 Start: 68636, Stop: 68400, Start Num: 21

Candidate Starts for SlippinJimmy_101:

(Start: 21 @68636 has 44 MA's), (31, 68567), (41, 68468),

Gene: Sour_75 Start: 59915, Stop: 59661, Start Num: 23

Candidate Starts for Sour_75:

(1, 60173), (3, 60113), (8, 60035), (9, 60032), (Start: 23 @59915 has 16 MA's), (28, 59858), (30, 59846), (35, 59786), (39, 59744), (40, 59741), (43, 59726), (44, 59723), (46, 59675),

Gene: SynergyX_99 Start: 67578, Stop: 67342, Start Num: 21

Candidate Starts for SynergyX_99:

(Start: 21 @67578 has 44 MA's), (31, 67509), (34, 67464), (41, 67410),

Gene: TA17A_87 Start: 65073, Stop: 64816, Start Num: 22

Candidate Starts for TA17A_87:

(Start: 16 @65118 has 3 MA's), (Start: 19 @65109 has 17 MA's), (Start: 22 @65073 has 12 MA's), (31, 65004),

Gene: Tinciduntolum_87 Start: 65273, Stop: 64980, Start Num: 19

Candidate Starts for Tinciduntolum_87:

(Start: 16 @65282 has 3 MA's), (Start: 19 @65273 has 17 MA's), (Start: 22 @65237 has 12 MA's), (31, 65168),

Gene: Tres_86 Start: 65135, Stop: 64833, Start Num: 16

Candidate Starts for Tres_86:

(Start: 16 @65135 has 3 MA's), (Start: 19 @65126 has 17 MA's), (Start: 22 @65090 has 12 MA's), (31, 65021),

Gene: Tydolla_94 Start: 67254, Stop: 67018, Start Num: 21

Candidate Starts for Tydolla_94:

(Start: 21 @67254 has 44 MA's), (31, 67185), (34, 67140), (41, 67086),

Gene: West99_86 Start: 65260, Stop: 65003, Start Num: 22

Candidate Starts for West99_86:

(Start: 16 @65305 has 3 MA's), (Start: 19 @65296 has 17 MA's), (Start: 22 @65260 has 12 MA's), (31, 65191),

Gene: Wooper_82 Start: 59772, Stop: 59515, Start Num: 23

Candidate Starts for Wooper_82:

(Start: 14 @59847 has 2 MA's), (15, 59844), (20, 59808), (Start: 23 @59772 has 16 MA's), (25, 59748), (31, 59697), (42, 59586), (45, 59562),

Gene: Yago84_78 Start: 59931, Stop: 59668, Start Num: 23

Candidate Starts for Yago84_78:

(Start: 23 @59931 has 16 MA's), (44, 59727),

Gene: Yahalom_96 Start: 67079, Stop: 66843, Start Num: 21

Candidate Starts for Yahalom_96:

(Start: 21 @67079 has 44 MA's), (31, 67010), (34, 66965), (41, 66911),

Gene: Yinz_96 Start: 66680, Stop: 66444, Start Num: 21

Candidate Starts for Yinz_96:

(Start: 21 @66680 has 44 MA's), (31, 66611), (38, 66530), (41, 66512),