



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 200171 Report

This analysis was run 01/18/25 on database version 583.

Pham number 200171 has 76 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Indlovu_1
- Track 2 : LilMcDreamy_1
- Track 3 : JAMaL_1, BobbyK_1
- Track 4 : Lambano_1, Ahwei_1, Epah_1, Hally898_1, Antihero_1, Nanao_1, GinPorsche_1, Poster_1
- Track 5 : Magpie_1, RawrgerThat_1, Fortunato_1
- Track 6 : Hydro_1
- Track 7 : Nigel_1
- Track 8 : BrownCNA_1, Apex_1, Mithril_1, Frederick_1, Waleliano_1, Lolalove_1, Prince_1, Mudslide_1, Austelle_1
- Track 9 : ChrisnMich_1
- Track 10 : QueenPie_1
- Track 11 : Zemanar_1
- Track 12 : VioletZ_1
- Track 13 : Xincheng_1, JaguarMi_1
- Track 14 : Hangman_1
- Track 15 : Fanaw_1
- Track 16 : Stinger_1
- Track 17 : Cooper_1
- Track 18 : Heath_1
- Track 19 : Serendipitous_1
- Track 20 : Rita130_1
- Track 21 : Bae_1
- Track 22 : KarasumaRum_1, StinkyVeggy_1
- Track 23 : Nangang_1, Shenyu_1
- Track 24 : Reprobate_1
- Track 25 : EastView9101_1, SirJeffery_1, Acadian_1, Donny_1, Suigeneris_1
- Track 26 : Mysterious_1
- Track 27 : Rich_1
- Track 28 : Phelemich_1
- Track 29 : DigitDog_1
- Track 30 : Nehemiah_98
- Track 31 : Jolie1_01
- Track 32 : 40BC_01, ForDig_1, 39HC_01
- Track 33 : KayaCho_1
- Track 34 : Hosp_096
- Track 35 : Yeshua_1

- Track 36 : CaiB_1
- Track 37 : MakoManhole_1, AnarQue_1, MossRose_1, CloverMinnie_1
- Track 38 : LittleMunchkin_1
- Track 39 : Wooper_1
- Track 40 : BobRoss2024_1
- Track 41 : Ottawa_73, Kharcho_73
- Track 42 : Ottawa_72, Kharcho_72
- Track 43 : TurkishDelight_121
- Track 44 : Tonitrus_1

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

The start number called the most often in the published annotations is 4, it was called in 37 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 39HC_01, 40BC_01, Acadian_1, Ahwei_1, Antihero_1, Apex_1, Austelle_1, Bae_1, BobRoss2024_1, BobbyK_1, BrownCNA_1, ChrisnMich_1, Cooper_1, DigitDog_1, Donny_1, EastView9101_1, Epah_1, Fanaw_1, ForDig_1, Fortunato_1, Frederick_1, GinPorsche_1, Hally898_1, Hangman_1, Heath_1, Hosp_096, Hydro_1, Indlovu_1, JAMaL_1, JaguarMi_1, Jolie1_01, KarasumaRum_1, KayaCho_1, Lambano_1, LilMcDreamy_1, LittleMunchkin_1, Lolalove_1, Magpie_1, Mithril_1, Mudslide_1, Mysterious_1, Nanao_1, Nangang_1, Nigel_1, Phelemich_1, Poster_1, Prince_1, RawrgerThat_1, Reprobate_1, Rich_1, Rita130_1, Serendipitous_1, Shenyu_1, SirJeffery_1, Stinger_1, StinkyVeggy_1, Suigeneris_1, TurkishDelight_121, VioletZ_1, Waleliano_1, Xincheng_1, Zemanar_1,

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

- AnarQue_1, CaiB_1, CloverMinnie_1, MakoManhole_1, MossRose_1, Nehemiah_98, QueenPie_1, Wooper_1, Yeshua_1,

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

- Kharcho_72, Kharcho_73, Ottawa_72, Ottawa_73, Tonitrus_1,

Summary by start number:

Start 2:

- Found in 1 of 76 (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: Nehemiah_98 (B5),

Start 3:

- Found in 8 of 76 (10.5%) of genes in pham
- Manual Annotations of this start: 6 of 48
- Called 87.5% of time when present
- Phage (with cluster) where this start called: AnarQue_1 (DR), CaiB_1 (DR), CloverMinnie_1 (DR), MakoManhole_1 (DR), MossRose_1 (DR), Wooper_1 (DR), Yeshua_1 (DR),

Start 4:

- Found in 71 of 76 (93.4%) of genes in pham
- Manual Annotations of this start: 37 of 48
- Called 87.3% of time when present
- Phage (with cluster) where this start called: 39HC_01 (B6), 40BC_01 (B6), Acadian_1 (B5), Ahwei_1 (B4), Antihero_1 (B4), Apex_1 (B4), Austelle_1 (B4), Bae_1 (B5), BobRoss2024_1 (DR), BobbyK_1 (B4), BrownCNA_1 (B4), ChrisnMich_1 (B4), Cooper_1 (B4), DigitDog_1 (B5), Donny_1 (B5), EastView9101_1 (B5), Epah_1 (B4), Fanaw_1 (B4), ForDig_1 (B6), Fortunato_1 (B4), Frederick_1 (B4), GinPorsche_1 (B4), Hally898_1 (B4), Hangman_1 (B4), Heath_1 (B4), Hosp_096 (B6), Hydro_1 (B4), Indlovu_1 (B11), JAMaL_1 (B4), JaguarMi_1 (B4), Jolie1_01 (B6), KarasumaRum_1 (B5), KayaCho_1 (B6), Lambano_1 (B4), LilMcDreamy_1 (B12), LittleMunchkin_1 (DR), Lolalove_1 (B4), Magpie_1 (B4), Mithril_1 (B4), Mudslide_1 (B4), Mysterious_1 (B5), Nanao_1 (B4), Nangang_1 (B5), Nigel_1 (B4), Phelemich_1 (B5), Poster_1 (B4), Prince_1 (B4), RawrgerThat_1 (B4), Reprobate_1 (B5), Rich_1 (B5), Rita130_1 (B5), Serendipitous_1 (B5), Shenyu_1 (B5), SirJeffery_1 (B5), Stinger_1 (B4), StinkyVeggy_1 (B5), Suigeneris_1 (B5), TurkishDelight_121 (singleton), VioletZ_1 (B4), Waleliano_1 (B4), Xincheng_1 (B4), Zemanar_1 (B4),

Start 5:

- Found in 2 of 76 (2.6%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kharcho_72 (FM), Ottawa_72 (FM),

Start 6:

- Found in 1 of 76 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tonitrus_1 (singleton),

Start 10:

- Found in 2 of 76 (2.6%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kharcho_73 (FM), Ottawa_73 (FM),

Start 13:

- Found in 41 of 76 (53.9%) of genes in pham
- No Manual Annotations of this start.
- Called 2.4% of time when present
- Phage (with cluster) where this start called: QueenPie_1 (B4),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, B4, B5, B6, B12, B11, DR, FM,

Info for manual annotations of cluster B11:

- Start number 4 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 4 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B4:

- Start number 4 was manually annotated 23 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 4 was manually annotated 9 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 4 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster DR:

- Start number 3 was manually annotated 6 times for cluster DR.
- Start number 4 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster FM:

- Start number 5 was manually annotated 2 times for cluster FM.
- Start number 10 was manually annotated 2 times for cluster FM.

Gene Information:

Gene: 39HC_01 Start: 1, Stop: 810, Start Num: 4

Candidate Starts for 39HC_01:

(Start: 4 @1 has 37 MA's), (15, 106), (25, 208), (34, 277), (36, 295), (37, 310), (43, 424), (53, 541), (54, 586), (56, 592), (58, 601),

Gene: 40BC_01 Start: 1, Stop: 810, Start Num: 4

Candidate Starts for 40BC_01:

(Start: 4 @1 has 37 MA's), (15, 106), (25, 208), (34, 277), (36, 295), (37, 310), (43, 424), (53, 541), (54, 586), (56, 592), (58, 601),

Gene: Acadian_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for Acadian_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (22, 178), (30, 256), (35, 277), (37, 304), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (74, 739),

Gene: Ahwei_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Ahwei_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: AnarQue_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for AnarQue_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (67, 703), (68, 706), (80, 775),

Gene: Antihero_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Antihero_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Apex_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Apex_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: Austelle_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Austelle_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: Bae_1 Start: 1, Stop: 822, Start Num: 4

Candidate Starts for Bae_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (12, 67), (35, 277), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (79, 769),

Gene: BobRoss2024_1 Start: 1, Stop: 780, Start Num: 4

Candidate Starts for BobRoss2024_1:

(Start: 4 @1 has 37 MA's), (13, 97), (22, 187), (25, 211), (55, 589), (68, 688),

Gene: BobbyK_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for BobbyK_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (58, 592), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: BrownCNA_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for BrownCNA_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: CaiB_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for CaiB_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (60, 637), (67, 703), (68, 706), (80, 775),

Gene: ChrisnMich_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for ChrisnMich_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: CloverMinnie_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for CloverMinnie_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (67, 703), (68, 706), (80, 775),

Gene: Cooper_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Cooper_1:

(Start: 4 @1 has 37 MA's), (8, 19), (13, 88), (15, 100), (22, 178), (25, 202), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (41, 388), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (76, 733),

Gene: DigitDog_1 Start: 1, Stop: 807, Start Num: 4

Candidate Starts for DigitDog_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (23, 181), (30, 256), (35, 277), (37, 304), (48, 463), (52, 538), (54, 595), (56, 601), (57, 604), (59, 616), (62, 646), (67, 694),

Gene: Donny_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for Donny_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (22, 178), (30, 256), (35, 277), (37, 304), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (74, 739),

Gene: EastView9101_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for EastView9101_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (22, 178), (30, 256), (35, 277), (37, 304), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (74, 739),

Gene: Epah_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Epah_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Fanaw_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Fanaw_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (42, 397), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679), (75, 733),

Gene: ForDig_1 Start: 1, Stop: 810, Start Num: 4

Candidate Starts for ForDig_1:

(Start: 4 @1 has 37 MA's), (15, 106), (25, 208), (34, 277), (36, 295), (37, 310), (43, 424), (53, 541), (54, 586), (56, 592), (58, 601),

Gene: Fortunato_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Fortunato_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: Frederick_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Frederick_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: GinPorsche_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for GinPorsche_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Hally898_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Hally898_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Hangman_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Hangman_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (43, 418), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: Heath_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Heath_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (16, 109), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (58, 592), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: Hosp_096 Start: 68870, Stop: 69679, Start Num: 4

Candidate Starts for Hosp_096:

(1, 68831), (Start: 4 @68870 has 37 MA's), (15, 68975), (25, 69077), (34, 69146), (36, 69164), (37, 69179), (43, 69293), (53, 69410), (54, 69455), (56, 69461), (58, 69470),

Gene: Hydro_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Hydro_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Indlovu_1 Start: 1, Stop: 825, Start Num: 4

Candidate Starts for Indlovu_1:

(Start: 4 @1 has 37 MA's), (15, 100), (22, 178), (36, 289), (37, 304), (38, 307), (40, 367), (52, 538), (53, 553), (54, 598), (56, 604), (58, 613), (67, 697),

Gene: JAMaL_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for JAMaL_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (58, 592), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: JaguarMi_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for JaguarMi_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (16, 109), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676),

Gene: Jolie1_01 Start: 1, Stop: 810, Start Num: 4

Candidate Starts for Jolie1_01:

(Start: 4 @1 has 37 MA's), (15, 106), (25, 208), (34, 277), (36, 295), (37, 310), (38, 313), (43, 424), (53, 541), (54, 586), (56, 592), (58, 601),

Gene: KarasumaRum_1 Start: 1, Stop: 807, Start Num: 4

Candidate Starts for KarasumaRum_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (30, 256), (35, 277), (37, 304), (48, 463), (52, 538), (54, 595), (56, 601), (57, 604), (59, 616), (62, 646),

Gene: KayaCho_1 Start: 1, Stop: 813, Start Num: 4

Candidate Starts for KayaCho_1:

(Start: 4 @1 has 37 MA's), (15, 106), (25, 208), (36, 295), (37, 310), (43, 424), (53, 544), (54, 589), (56, 595), (58, 604),

Gene: Kharcho_73 Start: 42919, Stop: 43530, Start Num: 10

Candidate Starts for Kharcho_73:

(Start: 10 @42919 has 2 MA's), (32, 43129), (44, 43291),

Gene: Kharcho_72 Start: 42263, Stop: 42922, Start Num: 5

Candidate Starts for Kharcho_72:

(Start: 5 @42263 has 2 MA's), (11, 42293), (18, 42395), (69, 42872),

Gene: Lambano_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Lambano_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: LilMcDreamy_1 Start: 1, Stop: 852, Start Num: 4

Candidate Starts for LilMcDreamy_1:

(Start: 4 @1 has 37 MA's), (13, 97), (22, 187), (25, 211), (29, 265), (36, 298), (46, 457), (47, 475), (50, 595), (51, 619), (54, 679), (63, 736),

Gene: LittleMunchkin_1 Start: 10, Stop: 807, Start Num: 4

Candidate Starts for LittleMunchkin_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (18, 154), (21, 187), (22, 193), (23, 196), (24, 199), (28, 250), (31, 271), (32, 277), (35, 292), (38, 322), (77, 763), (80, 778),

Gene: Lolalove_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Lolalove_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: Magpie_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Magpie_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: MakoManhole_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for MakoManhole_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (67, 703), (68, 706), (80, 775),

Gene: Mithril_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Mithril_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: MossRose_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for MossRose_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (67, 703), (68, 706), (80, 775),

Gene: Mudslide_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Mudslide_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: Mysterious_1 Start: 1, Stop: 813, Start Num: 4

Candidate Starts for Mysterious_1:

(Start: 4 @1 has 37 MA's), (8, 19), (13, 88), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (48, 463), (52, 535), (54, 592), (56, 598), (57, 601), (59, 613), (62, 643), (65, 670), (72, 712), (78, 754), (80, 763),

Gene: Nanao_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Nanao_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Nangang_1 Start: 1, Stop: 807, Start Num: 4

Candidate Starts for Nangang_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (23, 181), (30, 256), (35, 277), (37, 304), (48, 463), (52, 538), (54, 595), (56, 601), (57, 604), (59, 616), (62, 646),

Gene: Nehemiah_98 Start: 70135, Stop: 813, Start Num: 2

Candidate Starts for Nehemiah_98:

(2, 70135), (Start: 4 @70153 has 37 MA's), (8, 70171), (13, 70240), (22, 70330), (25, 70354), (30, 70408), (32, 70414), (35, 70429), (36, 70441), (37, 70456), (48, 70615), (52, 70687), (54, 70744), (56, 70750), (57, 70753), (59, 70765), (62, 70795), (65, 70822), (72, 70864), (78, 70906), (80, 70915),

Gene: Nigel_1 Start: 1, Stop: 789, Start Num: 4

Candidate Starts for Nigel_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (22, 178), (25, 202), (30, 256), (32, 262), (37, 304), (40, 367), (44, 427), (49, 466), (54, 568), (55, 571), (58, 583), (61, 607), (64, 634), (65, 646), (67, 667), (68, 670),

Gene: Ottawa_73 Start: 42869, Stop: 43480, Start Num: 10

Candidate Starts for Ottawa_73:

(Start: 10 @42869 has 2 MA's), (32, 43079), (44, 43241),

Gene: Ottawa_72 Start: 42213, Stop: 42872, Start Num: 5

Candidate Starts for Ottawa_72:

(Start: 5 @42213 has 2 MA's), (11, 42243), (18, 42345), (69, 42822),

Gene: Phelemich_1 Start: 1, Stop: 813, Start Num: 4

Candidate Starts for Phelemich_1:

(Start: 4 @1 has 37 MA's), (8, 19), (13, 88), (22, 178), (30, 256), (32, 262), (35, 277), (37, 304), (48, 463), (52, 535), (54, 592), (56, 598), (57, 601), (59, 613), (62, 643), (65, 670), (72, 712), (78, 754), (80, 763),

Gene: Poster_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Poster_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (23, 181), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: Prince_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Prince_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: QueenPie_1 Start: 88, Stop: 798, Start Num: 13

Candidate Starts for QueenPie_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679), (81, 754),

Gene: RawrgerThat_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for RawrgerThat_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: Reprobate_1 Start: 1, Stop: 810, Start Num: 4

Candidate Starts for Reprobate_1:

(Start: 4 @1 has 37 MA's), (8, 19), (13, 88), (30, 256), (32, 262), (35, 277), (37, 304), (48, 463), (52, 532), (54, 589), (56, 595), (57, 598), (59, 610), (62, 640), (65, 667), (72, 709), (78, 751), (80, 760),

Gene: Rich_1 Start: 1, Stop: 819, Start Num: 4

Candidate Starts for Rich_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (12, 67), (35, 277), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646),

Gene: Rita130_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for Rita130_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (22, 178), (30, 256), (35, 277), (37, 304), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (81, 769),

Gene: Serendipitous_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for Serendipitous_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (30, 256), (35, 277), (39, 358), (48, 463), (52, 538), (54, 595), (56, 601), (57, 604), (59, 616), (62, 646), (74, 739),

Gene: Shenyu_1 Start: 1, Stop: 807, Start Num: 4

Candidate Starts for Shenyu_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (23, 181), (30, 256), (35, 277), (37, 304), (48, 463), (52, 538), (54, 595), (56, 601), (57, 604), (59, 616), (62, 646),

Gene: SirJeffery_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for SirJeffery_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (22, 178), (30, 256), (35, 277), (37, 304), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (74, 739),

Gene: Stinger_1 Start: 1, Stop: 789, Start Num: 4

Candidate Starts for Stinger_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (22, 178), (25, 202), (30, 256), (32, 262), (37, 304), (40, 367), (49, 466), (54, 568), (55, 571), (56, 574), (61, 607), (64, 634), (65, 646), (67, 667), (68, 670),

Gene: StinkyVeggy_1 Start: 1, Stop: 807, Start Num: 4

Candidate Starts for StinkyVeggy_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (30, 256), (35, 277), (37, 304), (48, 463), (52, 538), (54, 595), (56, 601), (57, 604), (59, 616), (62, 646),

Gene: Suigeneris_1 Start: 1, Stop: 816, Start Num: 4

Candidate Starts for Suigeneris_1:

(Start: 4 @1 has 37 MA's), (7, 16), (8, 19), (22, 178), (30, 256), (35, 277), (37, 304), (39, 358), (48, 463), (52, 538), (54, 595), (57, 604), (62, 646), (74, 739),

Gene: Tonitrus_1 Start: 1, Stop: 750, Start Num: 6

Candidate Starts for Tonitrus_1:

(Start: 6 @1 has 1 MA's), (9, 16), (18, 127), (19, 130), (21, 160), (22, 166), (23, 169), (25, 190), (30, 244), (33, 253), (37, 292), (40, 355), (51, 496), (53, 514), (55, 559), (56, 562), (61, 595), (62, 607), (66, 652), (68, 658), (71, 667), (73, 685),

Gene: TurkishDelight_121 Start: 88490, Stop: 89365, Start Num: 4

Candidate Starts for TurkishDelight_121:

(Start: 4 @88490 has 37 MA's), (14, 88601), (27, 88742), (45, 88982), (55, 89162), (59, 89180), (73, 89288),

Gene: VioletZ_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for VioletZ_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),

Gene: Waleliano_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Waleliano_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (37, 304), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64, 643), (65, 655), (67, 676), (70, 685),

Gene: Wooper_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for Wooper_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (58, 619), (67, 703), (68, 706), (80, 775),

Gene: Xincheng_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Xincheng_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (16, 109), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (61, 616), (64,

643), (65, 655), (67, 676),

Gene: Yeshua_1 Start: 1, Stop: 804, Start Num: 3

Candidate Starts for Yeshua_1:

(Start: 3 @1 has 6 MA's), (Start: 4 @10 has 37 MA's), (17, 151), (22, 193), (25, 217), (26, 223), (35, 292), (37, 319), (38, 322), (68, 706), (80, 775),

Gene: Zemanar_1 Start: 1, Stop: 798, Start Num: 4

Candidate Starts for Zemanar_1:

(Start: 4 @1 has 37 MA's), (13, 88), (15, 100), (16, 109), (20, 148), (22, 178), (25, 202), (30, 256), (32, 262), (35, 277), (36, 289), (38, 307), (40, 367), (49, 466), (54, 577), (55, 580), (56, 583), (58, 592), (61, 616), (64, 643), (65, 655), (67, 676), (68, 679),