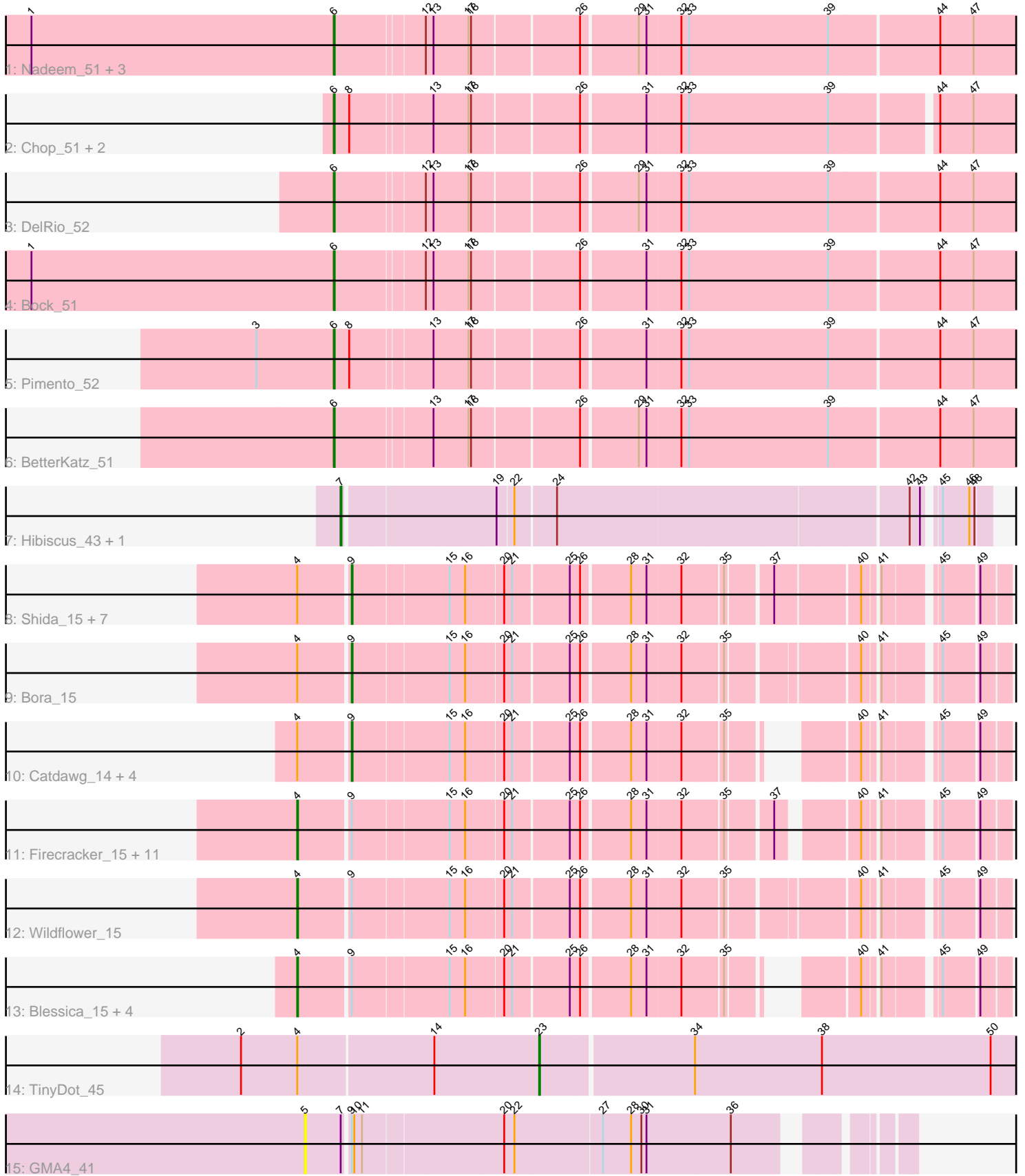


Pham 224675



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 224675 Report

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

Pham number 224675 has 47 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Nadeem_51, WheatThin_50, Ayotoya_51, NancyRae_50
- Track 2 : Chop_51, Hamood_51, GrandSlam_51
- Track 3 : DelRio_52
- Track 4 : Bock_51
- Track 5 : Pimento_52
- Track 6 : BetterKatz_51
- Track 7 : Hibiscus_43, Heinz_43
- Track 8 : Shida_15, Corndog_17, Wogge42_15, Vorrps_15, Alkhayr_15, Schuy_16, Mori_15, NiebruSaylor_15
- Track 9 : Bora_15
- Track 10 : Catdawg_14, KingPhillip3_14, JangDynasty_14, FoulBall_14, Zebo_14
- Track 11 : Firecracker_15, Ashwin_16, Dylan_15, Krili_15, YungJamal_16, Murai_15, Ryadel_17, Zakhe101_16, Smooch_16, MadKillah_16, Winget_15, Vagabond_15
- Track 12 : Wildflower_15
- Track 13 : Blessica_15, Familton_15, TelAviv_14, SchoolBus_14, Idergollasper_14
- Track 14 : TinyDot_45
- Track 15 : GMA4_41

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 18 of the 41 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ashwin_16, Blessica_15, Dylan_15, Familton_15, Firecracker_15, Idergollasper_14, Krili_15, MadKillah_16, Murai_15, Ryadel_17, SchoolBus_14, Smooch_16, TelAviv_14, Vagabond_15, Wildflower_15, Winget_15, YungJamal_16, Zakhe101_16,

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

- Alkhayr_15, Bora_15, Catdawg_14, Corndog_17, FoulBall_14, JangDynasty_14, KingPhillip3_14, Mori_15, NiebruSaylor_15, Schuy_16, Shida_15, TinyDot_45, Vorrps_15, Wogge42_15, Zebo_14,

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

- Ayotoya_51, BetterKatz_51, Bock_51, Chop_51, DelRio_52, GMA4_41, GrandSlam_51, Hamood_51, Heinz_43, Hibiscus_43, Nadeem_51, NancyRae_50, Pimento_52, WheatThin_50,

Summary by start number:

Start 4:

- Found in 33 of 47 (70.2%) of genes in pham
- Manual Annotations of this start: 18 of 41
- Called 54.5% of time when present
- Phage (with cluster) where this start called: Ashwin_16 (O), Blessica_15 (O), Dylan_15 (O), Familton_15 (O), Firecracker_15 (O), Idergollasper_14 (O), Krili_15 (O), MadKillah_16 (O), Murai_15 (O), Ryadel_17 (O), SchoolBus_14 (O), Smooch_16 (O), TelAviv_14 (O), Vagabond_15 (O), Wildflower_15 (O), Winget_15 (O), YungJamal_16 (O), Zakhe101_16 (O),

Start 5:

- Found in 1 of 47 (2.1%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4_41 (singleton),

Start 6:

- Found in 11 of 47 (23.4%) of genes in pham
- Manual Annotations of this start: 11 of 41
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya_51 (DI), BetterKatz_51 (DI), Bock_51 (DI), Chop_51 (DI), DelRio_52 (DI), GrandSlam_51 (DI), Hamood_51 (DI), Nadeem_51 (DI), NancyRae_50 (DI), Pimento_52 (DI), WheatThin_50 (DI),

Start 7:

- Found in 3 of 47 (6.4%) of genes in pham
- Manual Annotations of this start: 1 of 41
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Heinz_43 (DY), Hibiscus_43 (DY),

Start 9:

- Found in 33 of 47 (70.2%) of genes in pham
- Manual Annotations of this start: 10 of 41
- Called 42.4% of time when present
- Phage (with cluster) where this start called: Alkhayr_15 (O), Bora_15 (O), Catdawg_14 (O), Corndog_17 (O), FoulBall_14 (O), JangDynasty_14 (O), KingPhillip3_14 (O), Mori_15 (O), NiebruSaylor_15 (O), Schuy_16 (O), Shida_15 (O), Vorrrps_15 (O), Wogge42_15 (O), Zebo_14 (O),

Start 23:

- Found in 1 of 47 (2.1%) of genes in pham
- Manual Annotations of this start: 1 of 41
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TinyDot_45 (singleton),

Summary by clusters:

There are 4 clusters represented in this pham: singleton, DY, O, DI,

Info for manual annotations of cluster DI:

- Start number 6 was manually annotated 11 times for cluster DI.

Info for manual annotations of cluster DY:

- Start number 7 was manually annotated 1 time for cluster DY.

Info for manual annotations of cluster O:

- Start number 4 was manually annotated 18 times for cluster O.
- Start number 9 was manually annotated 10 times for cluster O.

Gene Information:

Gene: Alkhayr_15 Start: 6062, Stop: 6742, Start Num: 9

Candidate Starts for Alkhayr_15:

(Start: 4 @6005 has 18 MA's), (Start: 9 @6062 has 10 MA's), (15, 6167), (16, 6185), (20, 6227), (21, 6236), (25, 6299), (26, 6311), (28, 6365), (31, 6383), (32, 6422), (35, 6467), (37, 6515), (40, 6605), (41, 6620), (45, 6674), (49, 6710),

Gene: Ashwin_16 Start: 6240, Stop: 6962, Start Num: 4

Candidate Starts for Ashwin_16:

(Start: 4 @6240 has 18 MA's), (Start: 9 @6297 has 10 MA's), (15, 6402), (16, 6420), (20, 6462), (21, 6471), (25, 6534), (26, 6546), (28, 6600), (31, 6618), (32, 6657), (35, 6702), (37, 6750), (40, 6825), (41, 6840), (45, 6894), (49, 6930),

Gene: Ayotoya_51 Start: 37282, Stop: 38049, Start Num: 6

Candidate Starts for Ayotoya_51:

(1, 36928), (Start: 6 @37282 has 11 MA's), (12, 37381), (13, 37390), (17, 37429), (18, 37432), (26, 37549), (29, 37612), (31, 37621), (32, 37660), (33, 37669), (39, 37831), (44, 37942), (47, 37978),

Gene: BetterKatz_51 Start: 36768, Stop: 37547, Start Num: 6

Candidate Starts for BetterKatz_51:

(Start: 6 @36768 has 11 MA's), (13, 36876), (17, 36915), (18, 36918), (26, 37035), (29, 37098), (31, 37107), (32, 37146), (33, 37155), (39, 37317), (44, 37440), (47, 37476),

Gene: Blessica_15 Start: 6070, Stop: 6765, Start Num: 4

Candidate Starts for Blessica_15:

(Start: 4 @6070 has 18 MA's), (Start: 9 @6127 has 10 MA's), (15, 6232), (16, 6250), (20, 6292), (21, 6301), (25, 6364), (26, 6376), (28, 6430), (31, 6448), (32, 6487), (35, 6532), (40, 6628), (41, 6643), (45, 6697), (49, 6733),

Gene: Bock_51 Start: 36502, Stop: 37281, Start Num: 6

Candidate Starts for Bock_51:

(1, 36148), (Start: 6 @36502 has 11 MA's), (12, 36601), (13, 36610), (17, 36649), (18, 36652), (26, 36769), (31, 36841), (32, 36880), (33, 36889), (39, 37051), (44, 37174), (47, 37210),

Gene: Bora_15 Start: 6095, Stop: 6772, Start Num: 9

Candidate Starts for Bora_15:

(Start: 4 @6038 has 18 MA's), (Start: 9 @6095 has 10 MA's), (15, 6200), (16, 6218), (20, 6260), (21, 6269), (25, 6332), (26, 6344), (28, 6398), (31, 6416), (32, 6455), (35, 6500), (40, 6635), (41, 6650), (45, 6704), (49, 6740),

Gene: Catdawg_14 Start: 5733, Stop: 6371, Start Num: 9

Candidate Starts for Catdawg_14:

(Start: 4 @5676 has 18 MA's), (Start: 9 @5733 has 10 MA's), (15, 5838), (16, 5856), (20, 5898), (21, 5907), (25, 5970), (26, 5982), (28, 6036), (31, 6054), (32, 6093), (35, 6138), (40, 6234), (41, 6249), (45, 6303), (49, 6339),

Gene: Chop_51 Start: 37033, Stop: 37800, Start Num: 6

Candidate Starts for Chop_51:

(Start: 6 @37033 has 11 MA's), (8, 37051), (13, 37141), (17, 37180), (18, 37183), (26, 37300), (31, 37372), (32, 37411), (33, 37420), (39, 37582), (44, 37693), (47, 37729),

Gene: Corndog_17 Start: 6409, Stop: 7074, Start Num: 9

Candidate Starts for Corndog_17:

(Start: 4 @6352 has 18 MA's), (Start: 9 @6409 has 10 MA's), (15, 6514), (16, 6532), (20, 6574), (21, 6583), (25, 6646), (26, 6658), (28, 6712), (31, 6730), (32, 6769), (35, 6814), (37, 6862), (40, 6937), (41, 6952), (45, 7006), (49, 7042),

Gene: DelRio_52 Start: 37746, Stop: 38525, Start Num: 6

Candidate Starts for DelRio_52:

(Start: 6 @37746 has 11 MA's), (12, 37845), (13, 37854), (17, 37893), (18, 37896), (26, 38013), (29, 38076), (31, 38085), (32, 38124), (33, 38133), (39, 38295), (44, 38418), (47, 38454),

Gene: Dylan_15 Start: 6240, Stop: 6962, Start Num: 4

Candidate Starts for Dylan_15:

(Start: 4 @6240 has 18 MA's), (Start: 9 @6297 has 10 MA's), (15, 6402), (16, 6420), (20, 6462), (21, 6471), (25, 6534), (26, 6546), (28, 6600), (31, 6618), (32, 6657), (35, 6702), (37, 6750), (40, 6825), (41, 6840), (45, 6894), (49, 6930),

Gene: Familton_15 Start: 5677, Stop: 6372, Start Num: 4

Candidate Starts for Familton_15:

(Start: 4 @5677 has 18 MA's), (Start: 9 @5734 has 10 MA's), (15, 5839), (16, 5857), (20, 5899), (21, 5908), (25, 5971), (26, 5983), (28, 6037), (31, 6055), (32, 6094), (35, 6139), (40, 6235), (41, 6250), (45, 6304), (49, 6340),

Gene: Firecracker_15 Start: 5973, Stop: 6695, Start Num: 4

Candidate Starts for Firecracker_15:

(Start: 4 @5973 has 18 MA's), (Start: 9 @6030 has 10 MA's), (15, 6135), (16, 6153), (20, 6195), (21, 6204), (25, 6267), (26, 6279), (28, 6333), (31, 6351), (32, 6390), (35, 6435), (37, 6483), (40, 6558), (41, 6573), (45, 6627), (49, 6663),

Gene: FoulBall_14 Start: 5734, Stop: 6372, Start Num: 9

Candidate Starts for FoulBall_14:

(Start: 4 @5677 has 18 MA's), (Start: 9 @5734 has 10 MA's), (15, 5839), (16, 5857), (20, 5899), (21, 5908), (25, 5971), (26, 5983), (28, 6037), (31, 6055), (32, 6094), (35, 6139), (40, 6235), (41, 6250), (45, 6304), (49, 6340),

Gene: GMA4_41 Start: 30857, Stop: 31489, Start Num: 5

Candidate Starts for GMA4_41:

(5, 30857), (Start: 7 @30899 has 1 MA's), (Start: 9 @30905 has 10 MA's), (10, 30908), (11, 30917), (20, 31070), (22, 31082), (27, 31181), (28, 31214), (30, 31226), (31, 31232), (36, 31328),

Gene: GrandSlam_51 Start: 37033, Stop: 37800, Start Num: 6

Candidate Starts for GrandSlam_51:

(Start: 6 @37033 has 11 MA's), (8, 37051), (13, 37141), (17, 37180), (18, 37183), (26, 37300), (31, 37372), (32, 37411), (33, 37420), (39, 37582), (44, 37693), (47, 37729),

Gene: Hamood_51 Start: 37033, Stop: 37800, Start Num: 6

Candidate Starts for Hamood_51:

(Start: 6 @37033 has 11 MA's), (8, 37051), (13, 37141), (17, 37180), (18, 37183), (26, 37300), (31, 37372), (32, 37411), (33, 37420), (39, 37582), (44, 37693), (47, 37729),

Gene: Heinz_43 Start: 28349, Stop: 29047, Start Num: 7

Candidate Starts for Heinz_43:

(Start: 7 @28349 has 1 MA's), (19, 28511), (22, 28529), (24, 28574), (42, 28973), (43, 28985), (45, 28997), (46, 29024), (48, 29030),

Gene: Hibiscus_43 Start: 28298, Stop: 28996, Start Num: 7

Candidate Starts for Hibiscus_43:

(Start: 7 @28298 has 1 MA's), (19, 28460), (22, 28478), (24, 28523), (42, 28922), (43, 28934), (45, 28946), (46, 28973), (48, 28979),

Gene: Idergollasper_14 Start: 5677, Stop: 6372, Start Num: 4

Candidate Starts for Idergollasper_14:

(Start: 4 @5677 has 18 MA's), (Start: 9 @5734 has 10 MA's), (15, 5839), (16, 5857), (20, 5899), (21, 5908), (25, 5971), (26, 5983), (28, 6037), (31, 6055), (32, 6094), (35, 6139), (40, 6235), (41, 6250), (45, 6304), (49, 6340),

Gene: JangDynasty_14 Start: 5823, Stop: 6461, Start Num: 9

Candidate Starts for JangDynasty_14:

(Start: 4 @5766 has 18 MA's), (Start: 9 @5823 has 10 MA's), (15, 5928), (16, 5946), (20, 5988), (21, 5997), (25, 6060), (26, 6072), (28, 6126), (31, 6144), (32, 6183), (35, 6228), (40, 6324), (41, 6339), (45, 6393), (49, 6429),

Gene: KingPhillip3_14 Start: 5734, Stop: 6372, Start Num: 9

Candidate Starts for KingPhillip3_14:

(Start: 4 @5677 has 18 MA's), (Start: 9 @5734 has 10 MA's), (15, 5839), (16, 5857), (20, 5899), (21, 5908), (25, 5971), (26, 5983), (28, 6037), (31, 6055), (32, 6094), (35, 6139), (40, 6235), (41, 6250), (45, 6304), (49, 6340),

Gene: Krili_15 Start: 6006, Stop: 6731, Start Num: 4

Candidate Starts for Krili_15:

(Start: 4 @6006 has 18 MA's), (Start: 9 @6063 has 10 MA's), (15, 6168), (16, 6186), (20, 6228), (21, 6237), (25, 6300), (26, 6312), (28, 6366), (31, 6384), (32, 6423), (35, 6468), (37, 6507), (40, 6594), (41, 6609), (45, 6663), (49, 6699),

Gene: MadKillah_16 Start: 6027, Stop: 6764, Start Num: 4

Candidate Starts for MadKillah_16:

(Start: 4 @6027 has 18 MA's), (Start: 9 @6084 has 10 MA's), (15, 6189), (16, 6207), (20, 6249), (21, 6258), (25, 6321), (26, 6333), (28, 6387), (31, 6405), (32, 6444), (35, 6489), (37, 6537), (40, 6627), (41, 6642), (45, 6696), (49, 6732),

Gene: Mori_15 Start: 5923, Stop: 6603, Start Num: 9

Candidate Starts for Mori_15:

(Start: 4 @5866 has 18 MA's), (Start: 9 @5923 has 10 MA's), (15, 6028), (16, 6046), (20, 6088), (21, 6097), (25, 6160), (26, 6172), (28, 6226), (31, 6244), (32, 6283), (35, 6328), (37, 6376), (40, 6466), (41, 6481), (45, 6535), (49, 6571),

Gene: Murai_15 Start: 5866, Stop: 6603, Start Num: 4

Candidate Starts for Murai_15:

(Start: 4 @5866 has 18 MA's), (Start: 9 @5923 has 10 MA's), (15, 6028), (16, 6046), (20, 6088), (21, 6097), (25, 6160), (26, 6172), (28, 6226), (31, 6244), (32, 6283), (35, 6328), (37, 6376), (40, 6466), (41, 6481), (45, 6535), (49, 6571),

Gene: Nadeem_51 Start: 36552, Stop: 37331, Start Num: 6

Candidate Starts for Nadeem_51:

(1, 36198), (Start: 6 @36552 has 11 MA's), (12, 36651), (13, 36660), (17, 36699), (18, 36702), (26, 36819), (29, 36882), (31, 36891), (32, 36930), (33, 36939), (39, 37101), (44, 37224), (47, 37260),

Gene: NancyRae_50 Start: 36571, Stop: 37350, Start Num: 6

Candidate Starts for NancyRae_50:

(1, 36217), (Start: 6 @36571 has 11 MA's), (12, 36670), (13, 36679), (17, 36718), (18, 36721), (26, 36838), (29, 36901), (31, 36910), (32, 36949), (33, 36958), (39, 37120), (44, 37243), (47, 37279),

Gene: NiebruSaylor_15 Start: 5923, Stop: 6603, Start Num: 9

Candidate Starts for NiebruSaylor_15:

(Start: 4 @5866 has 18 MA's), (Start: 9 @5923 has 10 MA's), (15, 6028), (16, 6046), (20, 6088), (21, 6097), (25, 6160), (26, 6172), (28, 6226), (31, 6244), (32, 6283), (35, 6328), (37, 6376), (40, 6466), (41, 6481), (45, 6535), (49, 6571),

Gene: Pimento_52 Start: 36149, Stop: 36928, Start Num: 6

Candidate Starts for Pimento_52:

(3, 36059), (Start: 6 @36149 has 11 MA's), (8, 36167), (13, 36257), (17, 36296), (18, 36299), (26, 36416), (31, 36488), (32, 36527), (33, 36536), (39, 36698), (44, 36821), (47, 36857),

Gene: Ryadel_17 Start: 6460, Stop: 7185, Start Num: 4

Candidate Starts for Ryadel_17:

(Start: 4 @6460 has 18 MA's), (Start: 9 @6517 has 10 MA's), (15, 6622), (16, 6640), (20, 6682), (21, 6691), (25, 6754), (26, 6766), (28, 6820), (31, 6838), (32, 6877), (35, 6922), (37, 6961), (40, 7048), (41, 7063), (45, 7117), (49, 7153),

Gene: SchoolBus_14 Start: 5677, Stop: 6372, Start Num: 4

Candidate Starts for SchoolBus_14:

(Start: 4 @5677 has 18 MA's), (Start: 9 @5734 has 10 MA's), (15, 5839), (16, 5857), (20, 5899), (21, 5908), (25, 5971), (26, 5983), (28, 6037), (31, 6055), (32, 6094), (35, 6139), (40, 6235), (41, 6250), (45, 6304), (49, 6340),

Gene: Schuy_16 Start: 6084, Stop: 6764, Start Num: 9

Candidate Starts for Schuy_16:

(Start: 4 @6027 has 18 MA's), (Start: 9 @6084 has 10 MA's), (15, 6189), (16, 6207), (20, 6249), (21, 6258), (25, 6321), (26, 6333), (28, 6387), (31, 6405), (32, 6444), (35, 6489), (37, 6537), (40, 6627), (41, 6642), (45, 6696), (49, 6732),

Gene: Shida_15 Start: 5989, Stop: 6669, Start Num: 9

Candidate Starts for Shida_15:

(Start: 4 @5932 has 18 MA's), (Start: 9 @5989 has 10 MA's), (15, 6094), (16, 6112), (20, 6154), (21, 6163), (25, 6226), (26, 6238), (28, 6292), (31, 6310), (32, 6349), (35, 6394), (37, 6442), (40, 6532), (41, 6547), (45, 6601), (49, 6637),

Gene: Smooch_16 Start: 6196, Stop: 6918, Start Num: 4

Candidate Starts for Smooch_16:

(Start: 4 @6196 has 18 MA's), (Start: 9 @6253 has 10 MA's), (15, 6358), (16, 6376), (20, 6418), (21, 6427), (25, 6490), (26, 6502), (28, 6556), (31, 6574), (32, 6613), (35, 6658), (37, 6706), (40, 6781), (41, 6796), (45, 6850), (49, 6886),

Gene: TelAviv_14 Start: 5674, Stop: 6369, Start Num: 4

Candidate Starts for TelAviv_14:

(Start: 4 @5674 has 18 MA's), (Start: 9 @5731 has 10 MA's), (15, 5836), (16, 5854), (20, 5896), (21, 5905), (25, 5968), (26, 5980), (28, 6034), (31, 6052), (32, 6091), (35, 6136), (40, 6232), (41, 6247), (45, 6301), (49, 6337),

Gene: TinyDot_45 Start: 30672, Stop: 31235, Start Num: 23

Candidate Starts for TinyDot_45:

(2, 30327), (Start: 4 @30393 has 18 MA's), (14, 30549), (Start: 23 @30672 has 1 MA's), (34, 30846), (38, 30993), (50, 31191),

Gene: Vagabond_15 Start: 5932, Stop: 6645, Start Num: 4

Candidate Starts for Vagabond_15:

(Start: 4 @5932 has 18 MA's), (Start: 9 @5989 has 10 MA's), (15, 6094), (16, 6112), (20, 6154), (21, 6163), (25, 6226), (26, 6238), (28, 6292), (31, 6310), (32, 6349), (35, 6394), (37, 6442), (40, 6508), (41, 6523), (45, 6577), (49, 6613),

Gene: Vorrps_15 Start: 5923, Stop: 6603, Start Num: 9

Candidate Starts for Vorrps_15:

(Start: 4 @5866 has 18 MA's), (Start: 9 @5923 has 10 MA's), (15, 6028), (16, 6046), (20, 6088), (21, 6097), (25, 6160), (26, 6172), (28, 6226), (31, 6244), (32, 6283), (35, 6328), (37, 6376), (40, 6466), (41, 6481), (45, 6535), (49, 6571),

Gene: WheatThin_50 Start: 36552, Stop: 37331, Start Num: 6

Candidate Starts for WheatThin_50:

(1, 36198), (Start: 6 @36552 has 11 MA's), (12, 36651), (13, 36660), (17, 36699), (18, 36702), (26, 36819), (29, 36882), (31, 36891), (32, 36930), (33, 36939), (39, 37101), (44, 37224), (47, 37260),

Gene: Wildflower_15 Start: 5892, Stop: 6626, Start Num: 4

Candidate Starts for Wildflower_15:

(Start: 4 @5892 has 18 MA's), (Start: 9 @5949 has 10 MA's), (15, 6054), (16, 6072), (20, 6114), (21, 6123), (25, 6186), (26, 6198), (28, 6252), (31, 6270), (32, 6309), (35, 6354), (40, 6489), (41, 6504), (45, 6558), (49, 6594),

Gene: Winget_15 Start: 5931, Stop: 6644, Start Num: 4

Candidate Starts for Winget_15:

(Start: 4 @5931 has 18 MA's), (Start: 9 @5988 has 10 MA's), (15, 6093), (16, 6111), (20, 6153), (21, 6162), (25, 6225), (26, 6237), (28, 6291), (31, 6309), (32, 6348), (35, 6393), (37, 6441), (40, 6507), (41, 6522), (45, 6576), (49, 6612),

Gene: Wogge42_15 Start: 6078, Stop: 6734, Start Num: 9

Candidate Starts for Wogge42_15:

(Start: 4 @6021 has 18 MA's), (Start: 9 @6078 has 10 MA's), (15, 6183), (16, 6201), (20, 6243), (21, 6252), (25, 6315), (26, 6327), (28, 6381), (31, 6399), (32, 6438), (35, 6483), (37, 6531), (40, 6597), (41, 6612), (45, 6666), (49, 6702),

Gene: YungJamal_16 Start: 6232, Stop: 6954, Start Num: 4

Candidate Starts for YungJamal_16:

(Start: 4 @6232 has 18 MA's), (Start: 9 @6289 has 10 MA's), (15, 6394), (16, 6412), (20, 6454), (21, 6463), (25, 6526), (26, 6538), (28, 6592), (31, 6610), (32, 6649), (35, 6694), (37, 6742), (40, 6817), (41, 6832), (45, 6886), (49, 6922),

Gene: Zakhe101_16 Start: 6244, Stop: 6966, Start Num: 4

Candidate Starts for Zakhe101_16:

(Start: 4 @6244 has 18 MA's), (Start: 9 @6301 has 10 MA's), (15, 6406), (16, 6424), (20, 6466), (21, 6475), (25, 6538), (26, 6550), (28, 6604), (31, 6622), (32, 6661), (35, 6706), (37, 6754), (40, 6829), (41, 6844), (45, 6898), (49, 6934),

Gene: Zebo_14 Start: 5734, Stop: 6372, Start Num: 9

Candidate Starts for Zebo_14:

(Start: 4 @5677 has 18 MA's), (Start: 9 @5734 has 10 MA's), (15, 5839), (16, 5857), (20, 5899), (21, 5908), (25, 5971), (26, 5983), (28, 6037), (31, 6055), (32, 6094), (35, 6139), (40, 6235), (41, 6250), (45, 6304), (49, 6340),