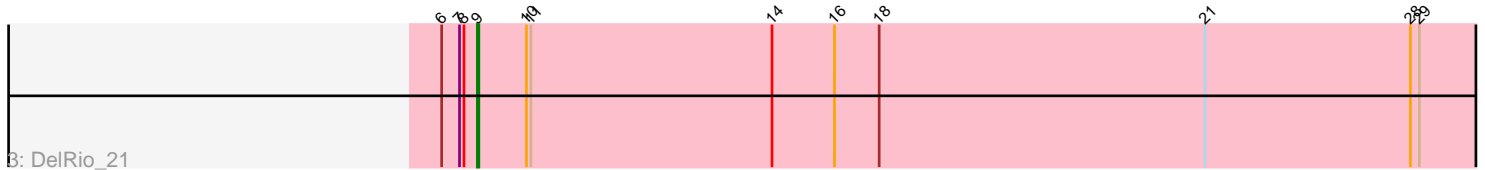
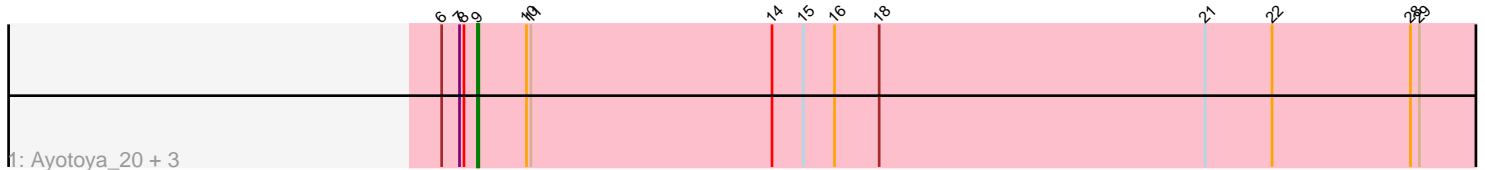


Zoomed Pham 180848



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 180848 Report

This analysis was run 11/02/24 on database version 579.

Pham number 180848 has 17 members, 0 are drafts.

Phages represented in each track:

- Track 1 : Ayotoya_20, Chop_20, GrandSlam_20, Hamood_20
- Track 2 : Francois_20
- Track 3 : DelRio_21
- Track 4 : Bock_20
- Track 5 : Nadeem_20, WheatThin_20, BetterKatz_20, Parada_20, Mulch_20, Brylie_20
- Track 6 : NancyRae_20
- Track 7 : Pimento_21
- Track 8 : DumpsterDude_17
- Track 9 : Ruthy_17

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

The start number called the most often in the published annotations is 9, it was called in 15 of the 17 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ayotoya_20, BetterKatz_20, Bock_20, Brylie_20, Chop_20, DelRio_21, Francois_20, GrandSlam_20, Hamood_20, Mulch_20, Nadeem_20, NancyRae_20, Parada_20, Pimento_21, WheatThin_20,

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

-

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

- DumpsterDude_17, Ruthy_17,

Summary by start number:

Start 8:

- Found in 17 of 17 (100.0%) of genes in pham
- Manual Annotations of this start: 2 of 17
- Called 11.8% of time when present

- Phage (with cluster) where this start called: DumpsterDude_17 (DW), Ruthy_17 (DW),

Start 9:

- Found in 15 of 17 (88.2%) of genes in pham
- Manual Annotations of this start: 15 of 17
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ayotoya_20 (DI), BetterKatz_20 (DI), Bock_20 (DI), Brylie_20 (DI), Chop_20 (DI), DelRio_21 (DI), Francois_20 (DI), GrandSlam_20 (DI), Hamood_20 (DI), Mulch_20 (DI), Nadeem_20 (DI), NancyRae_20 (DI), Parada_20 (DI), Pimento_21 (DI), WheatThin_20 (DI),

Summary by clusters:

There are 2 clusters represented in this pham: DW, DI,

Info for manual annotations of cluster DI:

- Start number 9 was manually annotated 15 times for cluster DI.

Info for manual annotations of cluster DW:

- Start number 8 was manually annotated 2 times for cluster DW.

Gene Information:

Gene: Ayotoya_20 Start: 11819, Stop: 17074, Start Num: 9

Candidate Starts for Ayotoya_20:

(6, 11795), (7, 11807), (Start: 8 @11810 has 2 MA's), (Start: 9 @11819 has 15 MA's), (10, 11852), (11, 11855), (14, 12017), (15, 12038), (16, 12059), (18, 12089), (21, 12308), (22, 12353), (28, 12446), (29, 12452), (31, 12539), (32, 12572), (35, 12656), (38, 12701), (39, 12713), (40, 12728), (41, 12743), (46, 12797), (53, 12875), (57, 12920), (58, 12944), (61, 13052), (62, 13094), (64, 13133), (70, 13196), (71, 13214), (76, 13274), (81, 13409), (84, 13517), (85, 13529), (87, 13550), (92, 13631), (97, 13673), (99, 13691), (101, 13721), (103, 13745), (106, 13793), (109, 13811), (110, 13826), (111, 13829), (117, 13910), (119, 13985), (121, 14021), (125, 14147), (126, 14168), (128, 14192), (129, 14204), (132, 14279), (133, 14300), (138, 14444), (140, 14477), (141, 14504), (142, 14510), (144, 14564), (145, 14600), (146, 14657), (148, 14687), (150, 14738), (154, 14795), (157, 14885), (159, 14912), (160, 14915), (162, 14993), (163, 15002), (168, 15281), (171, 15410), (175, 15620), (176, 15713), (178, 15845), (179, 15866), (180, 15974), (182, 16073), (184, 16157), (189, 16703), (191, 16736), (192, 16781), (194, 16847), (197, 16937), (198, 17012), (200, 17057),

Gene: BetterKatz_20 Start: 11757, Stop: 16547, Start Num: 9

Candidate Starts for BetterKatz_20:

(7, 11745), (Start: 8 @11748 has 2 MA's), (Start: 9 @11757 has 15 MA's), (10, 11790), (13, 11850), (17, 12018), (22, 12291), (24, 12333), (30, 12414), (34, 12480), (44, 12606), (48, 12639), (52, 12684), (58, 12744), (59, 12777), (65, 12918), (66, 12927), (78, 13059), (79, 13104), (83, 13215), (85, 13266), (91, 13323), (94, 13365), (95, 13371), (107, 13485), (108, 13488), (117, 13593), (119, 13668), (120, 13680), (121, 13704), (129, 13887), (132, 13962), (133, 13983), (134, 14019), (138, 14127), (140, 14160), (141, 14187), (142, 14193), (143, 14205), (144, 14247), (145, 14283), (146, 14340), (148, 14370), (152, 14445), (154, 14478), (157, 14568), (160, 14598), (162, 14676), (163, 14685), (165, 14793), (168, 14964), (171, 15093), (173, 15231), (178, 15540), (179, 15561), (180, 15669), (181, 15765), (186, 16077), (187, 16080), (191, 16209), (192, 16254), (194, 16320), (195, 16359), (197, 16410), (198, 16485), (200, 16530),

Gene: Bock_20 Start: 11507, Stop: 16297, Start Num: 9

Candidate Starts for Bock_20:

(7, 11495), (Start: 8 @11498 has 2 MA's), (Start: 9 @11507 has 15 MA's), (10, 11540), (13, 11600), (17, 11768), (22, 12041), (24, 12083), (30, 12164), (34, 12230), (44, 12356), (48, 12389), (52, 12434), (58, 12494), (59, 12527), (65, 12668), (66, 12677), (78, 12809), (79, 12854), (83, 12965), (85, 13016), (91, 13073), (94, 13115), (95, 13121), (107, 13235), (108, 13238), (117, 13343), (119, 13418), (120, 13430), (121, 13454), (125, 13580), (126, 13601), (129, 13637), (132, 13712), (133, 13733), (134, 13769), (138, 13877), (140, 13910), (141, 13937), (142, 13943), (143, 13955), (144, 13997), (145, 14033), (146, 14090), (148, 14120), (152, 14195), (154, 14228), (157, 14318), (160, 14348), (162, 14426), (163, 14435), (165, 14543), (168, 14714), (171, 14843), (173, 14981), (178, 15290), (179, 15311), (180, 15419), (181, 15515), (186, 15827), (187, 15830), (191, 15959), (192, 16004), (194, 16070), (195, 16109), (197, 16160), (198, 16235), (200, 16280),

Gene: Brylie_20 Start: 11504, Stop: 16288, Start Num: 9

Candidate Starts for Brylie_20:

(7, 11492), (Start: 8 @11495 has 2 MA's), (Start: 9 @11504 has 15 MA's), (10, 11537), (13, 11597), (17, 11765), (22, 12038), (24, 12080), (30, 12161), (34, 12227), (44, 12353), (48, 12386), (52, 12431), (58, 12491), (59, 12524), (65, 12665), (66, 12674), (78, 12806), (79, 12851), (83, 12962), (85, 13013), (91, 13070), (94, 13112), (95, 13118), (107, 13232), (108, 13235), (117, 13340), (119, 13415), (120, 13427), (121, 13451), (129, 13634), (132, 13709), (133, 13730), (134, 13766), (138, 13874), (140, 13907), (141, 13934), (142, 13940), (143, 13952), (144, 13994), (145, 14030), (146, 14087), (148, 14117), (152, 14192), (154, 14225), (157, 14315), (160, 14345), (162, 14423), (163, 14432), (165, 14540), (168, 14711), (171, 14840), (173, 14978), (178, 15287), (179, 15308), (180, 15416), (181, 15506), (186, 15818), (187, 15821), (191, 15950), (192, 15995), (194, 16061), (195, 16100), (197, 16151), (198, 16226), (200, 16271),

Gene: Chop_20 Start: 11567, Stop: 16822, Start Num: 9

Candidate Starts for Chop_20:

(6, 11543), (7, 11555), (Start: 8 @11558 has 2 MA's), (Start: 9 @11567 has 15 MA's), (10, 11600), (11, 11603), (14, 11765), (15, 11786), (16, 11807), (18, 11837), (21, 12056), (22, 12101), (28, 12194), (29, 12200), (31, 12287), (32, 12320), (35, 12404), (38, 12449), (39, 12461), (40, 12476), (41, 12491), (46, 12545), (53, 12623), (57, 12668), (58, 12692), (61, 12800), (62, 12842), (64, 12881), (70, 12944), (71, 12962), (76, 13022), (81, 13157), (84, 13265), (85, 13277), (87, 13298), (92, 13379), (97, 13421), (99, 13439), (101, 13469), (103, 13493), (106, 13541), (109, 13559), (110, 13574), (111, 13577), (117, 13658), (119, 13733), (121, 13769), (125, 13895), (126, 13916), (128, 13940), (129, 13952), (132, 14027), (133, 14048), (138, 14192), (140, 14225), (141, 14252), (142, 14258), (144, 14312), (145, 14348), (146, 14405), (148, 14435), (150, 14486), (154, 14543), (157, 14633), (159, 14660), (160, 14663), (162, 14741), (163, 14750), (168, 15029), (171, 15158), (175, 15368), (176, 15461), (178, 15593), (179, 15614), (180, 15722), (182, 15821), (184, 15905), (189, 16451), (191, 16484), (192, 16529), (194, 16595), (197, 16685), (198, 16760), (200, 16805),

Gene: DelRio_21 Start: 12041, Stop: 17296, Start Num: 9

Candidate Starts for DelRio_21:

(6, 12017), (7, 12029), (Start: 8 @12032 has 2 MA's), (Start: 9 @12041 has 15 MA's), (10, 12074), (11, 12077), (14, 12239), (16, 12281), (18, 12311), (21, 12530), (28, 12668), (29, 12674), (31, 12761), (32, 12794), (33, 12824), (35, 12878), (38, 12923), (39, 12935), (40, 12950), (41, 12965), (46, 13019), (53, 13097), (57, 13142), (58, 13166), (61, 13274), (62, 13316), (64, 13355), (70, 13418), (71, 13436), (74, 13460), (75, 13475), (76, 13496), (81, 13631), (84, 13739), (85, 13751), (87, 13772), (92, 13853), (97, 13895), (99, 13913), (101, 13943), (103, 13967), (106, 14015), (110, 14048), (111, 14051), (117, 14132), (119, 14207), (121, 14243), (125, 14369), (126, 14390), (128, 14414), (129, 14426), (132, 14501), (133, 14522), (138, 14666), (140, 14699), (141, 14726), (142, 14732), (144, 14786), (145, 14822), (146, 14879), (148, 14909), (150, 14960), (154, 15017), (157, 15107), (159, 15134), (160,

15137), (162, 15215), (163, 15224), (168, 15503), (171, 15632), (175, 15842), (176, 15935), (178, 16067), (179, 16088), (180, 16196), (182, 16295), (189, 16925), (191, 16958), (192, 17003), (194, 17069), (197, 17159), (198, 17234), (200, 17279),

Gene: DumpsterDude_17 Start: 10190, Stop: 15148, Start Num: 8

Candidate Starts for DumpsterDude_17:

(Start: 8 @10190 has 2 MA's), (10, 10229), (12, 10238), (17, 10457), (26, 10793), (29, 10829), (31, 10916), (32, 10949), (35, 11033), (36, 11036), (39, 11090), (41, 11120), (42, 11141), (43, 11150), (45, 11168), (47, 11192), (50, 11225), (51, 11231), (54, 11255), (56, 11282), (58, 11321), (63, 11495), (67, 11546), (70, 11573), (71, 11591), (72, 11594), (75, 11630), (76, 11651), (81, 11786), (82, 11831), (86, 11918), (87, 11927), (88, 11930), (90, 11975), (96, 12047), (102, 12107), (103, 12122), (104, 12146), (110, 12203), (111, 12206), (113, 12242), (116, 12278), (117, 12287), (118, 12329), (119, 12362), (125, 12524), (132, 12656), (133, 12677), (134, 12713), (136, 12767), (138, 12821), (139, 12845), (141, 12881), (144, 12941), (147, 13043), (151, 13136), (152, 13139), (153, 13169), (155, 13184), (156, 13238), (157, 13262), (158, 13268), (159, 13289), (161, 13346), (162, 13370), (166, 13547), (169, 13694), (171, 13790), (172, 13880), (174, 13937), (177, 14075), (182, 14369), (185, 14477), (188, 14714), (190, 14807), (191, 14813), (192, 14858), (193, 14903), (194, 14924), (195, 14963), (196, 14984), (199, 15098), (200, 15131), (201, 15137),

Gene: Francois_20 Start: 11521, Stop: 16311, Start Num: 9

Candidate Starts for Francois_20:

(1, 11356), (2, 11398), (3, 11410), (4, 11434), (5, 11473), (7, 11509), (Start: 8 @11512 has 2 MA's), (Start: 9 @11521 has 15 MA's), (10, 11554), (13, 11614), (17, 11782), (22, 12055), (24, 12097), (30, 12178), (34, 12244), (44, 12370), (48, 12403), (52, 12448), (58, 12508), (59, 12541), (65, 12682), (66, 12691), (78, 12823), (79, 12868), (83, 12979), (85, 13030), (91, 13087), (94, 13129), (95, 13135), (105, 13234), (107, 13249), (108, 13252), (117, 13357), (119, 13432), (120, 13444), (121, 13468), (125, 13594), (126, 13615), (128, 13639), (129, 13651), (132, 13726), (133, 13747), (134, 13783), (138, 13891), (140, 13924), (141, 13951), (142, 13957), (143, 13969), (144, 14011), (145, 14047), (146, 14104), (152, 14209), (154, 14242), (157, 14332), (159, 14359), (160, 14362), (162, 14440), (163, 14449), (165, 14557), (168, 14728), (171, 14857), (173, 14995), (178, 15304), (179, 15325), (180, 15433), (183, 15544), (186, 15841), (187, 15844), (191, 15973), (192, 16018), (194, 16084), (195, 16123), (197, 16174), (198, 16249), (200, 16294),

Gene: GrandSlam_20 Start: 11567, Stop: 16822, Start Num: 9

Candidate Starts for GrandSlam_20:

(6, 11543), (7, 11555), (Start: 8 @11558 has 2 MA's), (Start: 9 @11567 has 15 MA's), (10, 11600), (11, 11603), (14, 11765), (15, 11786), (16, 11807), (18, 11837), (21, 12056), (22, 12101), (28, 12194), (29, 12200), (31, 12287), (32, 12320), (35, 12404), (38, 12449), (39, 12461), (40, 12476), (41, 12491), (46, 12545), (53, 12623), (57, 12668), (58, 12692), (61, 12800), (62, 12842), (64, 12881), (70, 12944), (71, 12962), (76, 13022), (81, 13157), (84, 13265), (85, 13277), (87, 13298), (92, 13379), (97, 13421), (99, 13439), (101, 13469), (103, 13493), (106, 13541), (109, 13559), (110, 13574), (111, 13577), (117, 13658), (119, 13733), (121, 13769), (125, 13895), (126, 13916), (128, 13940), (129, 13952), (132, 14027), (133, 14048), (138, 14192), (140, 14225), (141, 14252), (142, 14258), (144, 14312), (145, 14348), (146, 14405), (148, 14435), (150, 14486), (154, 14543), (157, 14633), (159, 14660), (160, 14663), (162, 14741), (163, 14750), (168, 15029), (171, 15158), (175, 15368), (176, 15461), (178, 15593), (179, 15614), (180, 15722), (182, 15821), (184, 15905), (189, 16451), (191, 16484), (192, 16529), (194, 16595), (197, 16685), (198, 16760), (200, 16805),

Gene: Hamood_20 Start: 11567, Stop: 16822, Start Num: 9

Candidate Starts for Hamood_20:

(6, 11543), (7, 11555), (Start: 8 @11558 has 2 MA's), (Start: 9 @11567 has 15 MA's), (10, 11600), (11, 11603), (14, 11765), (15, 11786), (16, 11807), (18, 11837), (21, 12056), (22, 12101), (28, 12194), (29, 12200), (31, 12287), (32, 12320), (35, 12404), (38, 12449), (39, 12461), (40, 12476), (41, 12491),

(46, 12545), (53, 12623), (57, 12668), (58, 12692), (61, 12800), (62, 12842), (64, 12881), (70, 12944), (71, 12962), (76, 13022), (81, 13157), (84, 13265), (85, 13277), (87, 13298), (92, 13379), (97, 13421), (99, 13439), (101, 13469), (103, 13493), (106, 13541), (109, 13559), (110, 13574), (111, 13577), (117, 13658), (119, 13733), (121, 13769), (125, 13895), (126, 13916), (128, 13940), (129, 13952), (132, 14027), (133, 14048), (138, 14192), (140, 14225), (141, 14252), (142, 14258), (144, 14312), (145, 14348), (146, 14405), (148, 14435), (150, 14486), (154, 14543), (157, 14633), (159, 14660), (160, 14663), (162, 14741), (163, 14750), (168, 15029), (171, 15158), (175, 15368), (176, 15461), (178, 15593), (179, 15614), (180, 15722), (182, 15821), (184, 15905), (189, 16451), (191, 16484), (192, 16529), (194, 16595), (197, 16685), (198, 16760), (200, 16805),

Gene: Mulch_20 Start: 11504, Stop: 16288, Start Num: 9

Candidate Starts for Mulch_20:

(7, 11492), (Start: 8 @11495 has 2 MA's), (Start: 9 @11504 has 15 MA's), (10, 11537), (13, 11597), (17, 11765), (22, 12038), (24, 12080), (30, 12161), (34, 12227), (44, 12353), (48, 12386), (52, 12431), (58, 12491), (59, 12524), (65, 12665), (66, 12674), (78, 12806), (79, 12851), (83, 12962), (85, 13013), (91, 13070), (94, 13112), (95, 13118), (107, 13232), (108, 13235), (117, 13340), (119, 13415), (120, 13427), (121, 13451), (129, 13634), (132, 13709), (133, 13730), (134, 13766), (138, 13874), (140, 13907), (141, 13934), (142, 13940), (143, 13952), (144, 13994), (145, 14030), (146, 14087), (148, 14117), (152, 14192), (154, 14225), (157, 14315), (160, 14345), (162, 14423), (163, 14432), (165, 14540), (168, 14711), (171, 14840), (173, 14978), (178, 15287), (179, 15308), (180, 15416), (181, 15506), (186, 15818), (187, 15821), (191, 15950), (192, 15995), (194, 16061), (195, 16100), (197, 16151), (198, 16226), (200, 16271),

Gene: Nadeem_20 Start: 11504, Stop: 16288, Start Num: 9

Candidate Starts for Nadeem_20:

(7, 11492), (Start: 8 @11495 has 2 MA's), (Start: 9 @11504 has 15 MA's), (10, 11537), (13, 11597), (17, 11765), (22, 12038), (24, 12080), (30, 12161), (34, 12227), (44, 12353), (48, 12386), (52, 12431), (58, 12491), (59, 12524), (65, 12665), (66, 12674), (78, 12806), (79, 12851), (83, 12962), (85, 13013), (91, 13070), (94, 13112), (95, 13118), (107, 13232), (108, 13235), (117, 13340), (119, 13415), (120, 13427), (121, 13451), (129, 13634), (132, 13709), (133, 13730), (134, 13766), (138, 13874), (140, 13907), (141, 13934), (142, 13940), (143, 13952), (144, 13994), (145, 14030), (146, 14087), (148, 14117), (152, 14192), (154, 14225), (157, 14315), (160, 14345), (162, 14423), (163, 14432), (165, 14540), (168, 14711), (171, 14840), (173, 14978), (178, 15287), (179, 15308), (180, 15416), (181, 15506), (186, 15818), (187, 15821), (191, 15950), (192, 15995), (194, 16061), (195, 16100), (197, 16151), (198, 16226), (200, 16271),

Gene: NancyRae_20 Start: 11504, Stop: 16294, Start Num: 9

Candidate Starts for NancyRae_20:

(7, 11492), (Start: 8 @11495 has 2 MA's), (Start: 9 @11504 has 15 MA's), (10, 11537), (13, 11597), (17, 11765), (22, 12038), (24, 12080), (30, 12161), (34, 12227), (44, 12353), (48, 12386), (52, 12431), (58, 12491), (59, 12524), (65, 12665), (66, 12674), (78, 12806), (79, 12851), (83, 12962), (85, 13013), (91, 13070), (94, 13112), (95, 13118), (107, 13232), (108, 13235), (117, 13340), (119, 13415), (120, 13427), (121, 13451), (125, 13577), (129, 13634), (132, 13709), (133, 13730), (134, 13766), (138, 13874), (140, 13907), (141, 13934), (142, 13940), (144, 13994), (145, 14030), (146, 14087), (148, 14117), (152, 14192), (154, 14225), (157, 14315), (160, 14345), (162, 14423), (163, 14432), (165, 14540), (168, 14711), (171, 14840), (173, 14978), (178, 15287), (179, 15308), (180, 15416), (181, 15512), (186, 15824), (187, 15827), (191, 15956), (192, 16001), (194, 16067), (195, 16106), (197, 16157), (198, 16232), (200, 16277),

Gene: Parada_20 Start: 11504, Stop: 16288, Start Num: 9

Candidate Starts for Parada_20:

(7, 11492), (Start: 8 @11495 has 2 MA's), (Start: 9 @11504 has 15 MA's), (10, 11537), (13, 11597), (17, 11765), (22, 12038), (24, 12080), (30, 12161), (34, 12227), (44, 12353), (48, 12386), (52, 12431),

(58, 12491), (59, 12524), (65, 12665), (66, 12674), (78, 12806), (79, 12851), (83, 12962), (85, 13013), (91, 13070), (94, 13112), (95, 13118), (107, 13232), (108, 13235), (117, 13340), (119, 13415), (120, 13427), (121, 13451), (129, 13634), (132, 13709), (133, 13730), (134, 13766), (138, 13874), (140, 13907), (141, 13934), (142, 13940), (143, 13952), (144, 13994), (145, 14030), (146, 14087), (148, 14117), (152, 14192), (154, 14225), (157, 14315), (160, 14345), (162, 14423), (163, 14432), (165, 14540), (168, 14711), (171, 14840), (173, 14978), (178, 15287), (179, 15308), (180, 15416), (181, 15506), (186, 15818), (187, 15821), (191, 15950), (192, 15995), (194, 16061), (195, 16100), (197, 16151), (198, 16226), (200, 16271),

Gene: Pimento_21 Start: 11708, Stop: 15985, Start Num: 9

Candidate Starts for Pimento_21:

(7, 11696), (Start: 8 @11699 has 2 MA's), (Start: 9 @11708 has 15 MA's), (10, 11741), (17, 11969), (19, 12053), (20, 12116), (23, 12242), (25, 12275), (27, 12290), (30, 12323), (37, 12413), (49, 12488), (52, 12512), (55, 12527), (60, 12611), (65, 12632), (66, 12641), (68, 12653), (69, 12665), (73, 12692), (76, 12713), (77, 12731), (79, 12743), (80, 12749), (89, 12878), (93, 12923), (112, 13073), (115, 13103), (122, 13268), (123, 13271), (124, 13274), (129, 13361), (130, 13364), (131, 13370), (135, 13481), (140, 13604), (144, 13691), (149, 13820), (152, 13889), (154, 13922), (160, 14042), (162, 14120), (163, 14129), (165, 14237), (168, 14408), (171, 14537), (173, 14675), (178, 14984), (179, 15005), (180, 15113), (181, 15203), (186, 15515), (187, 15518), (191, 15647), (192, 15692), (194, 15758), (195, 15797), (197, 15848), (198, 15923), (200, 15968),

Gene: Ruthy_17 Start: 10300, Stop: 15261, Start Num: 8

Candidate Starts for Ruthy_17:

(Start: 8 @10300 has 2 MA's), (10, 10339), (12, 10348), (17, 10567), (26, 10903), (29, 10939), (32, 11059), (35, 11143), (36, 11146), (39, 11200), (41, 11230), (43, 11260), (45, 11278), (47, 11302), (50, 11335), (51, 11341), (54, 11365), (56, 11392), (58, 11431), (63, 11605), (67, 11656), (70, 11683), (71, 11701), (72, 11704), (75, 11740), (76, 11761), (81, 11896), (82, 11941), (86, 12028), (87, 12037), (88, 12040), (90, 12085), (96, 12157), (98, 12175), (100, 12184), (105, 12274), (111, 12316), (113, 12352), (114, 12355), (116, 12388), (117, 12397), (118, 12439), (119, 12472), (125, 12634), (127, 12667), (132, 12766), (133, 12787), (134, 12823), (136, 12877), (137, 12901), (138, 12931), (139, 12955), (141, 12991), (144, 13051), (145, 13087), (147, 13153), (151, 13246), (152, 13249), (153, 13279), (155, 13294), (156, 13348), (157, 13372), (158, 13378), (159, 13399), (161, 13456), (162, 13480), (164, 13516), (165, 13597), (166, 13657), (167, 13702), (168, 13768), (170, 13837), (171, 13903), (172, 13993), (174, 14050), (177, 14188), (182, 14482), (185, 14590), (188, 14827), (190, 14920), (191, 14926), (192, 14971), (193, 15016), (194, 15037), (195, 15076), (199, 15211), (200, 15244), (201, 15250),

Gene: WheatThin_20 Start: 11504, Stop: 16288, Start Num: 9

Candidate Starts for WheatThin_20:

(7, 11492), (Start: 8 @11495 has 2 MA's), (Start: 9 @11504 has 15 MA's), (10, 11537), (13, 11597), (17, 11765), (22, 12038), (24, 12080), (30, 12161), (34, 12227), (44, 12353), (48, 12386), (52, 12431), (58, 12491), (59, 12524), (65, 12665), (66, 12674), (78, 12806), (79, 12851), (83, 12962), (85, 13013), (91, 13070), (94, 13112), (95, 13118), (107, 13232), (108, 13235), (117, 13340), (119, 13415), (120, 13427), (121, 13451), (129, 13634), (132, 13709), (133, 13730), (134, 13766), (138, 13874), (140, 13907), (141, 13934), (142, 13940), (143, 13952), (144, 13994), (145, 14030), (146, 14087), (148, 14117), (152, 14192), (154, 14225), (157, 14315), (160, 14345), (162, 14423), (163, 14432), (165, 14540), (168, 14711), (171, 14840), (173, 14978), (178, 15287), (179, 15308), (180, 15416), (181, 15506), (186, 15818), (187, 15821), (191, 15950), (192, 15995), (194, 16061), (195, 16100), (197, 16151), (198, 16226), (200, 16271),