

Pham 163860



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 163860 Report

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

Pham number 163860 has 27 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi_27
- Track 2 : Fowlmouth_24
- Track 3 : MrMiyagi_24
- Track 4 : Damien_29, Beckerton_29, Cborch11_30, Megatron06_32
- Track 5 : Puissant_28
- Track 6 : Thumb_29
- Track 7 : Phreeze_29, Konstantine_34
- Track 8 : Oaker_29
- Track 9 : Barnyard_36
- Track 10 : DrLupo_38
- Track 11 : Nilo_31
- Track 12 : Rope_30, Send513_30, Candle_30
- Track 13 : Yelo_30
- Track 14 : Papyrus_30
- Track 15 : Zenon_31
- Track 16 : Weiss13_30
- Track 17 : MontyDev_30
- Track 18 : Riparian_30
- Track 19 : Patience_37
- Track 20 : Labelle_36
- Track 21 : Madruga_35

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

The start number called the most often in the published annotations is 1, it was called in 8 of the 23 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Candle_30, Nilo_31, Papyrus_30, Riparian_30, Rope_30, Send513_30, Weiss13_30, Yelo_30, Zenon_31,

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

- MontyDev_30,

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

- Barnyard_36, Beckerton_29, Cborch11_30, Damien_29, DrLupo_38, Fowlmouth_24, Indlulamithi_27, Konstantine_34, Labelle_36, Madruga_35, Megatron06_32, MrMiyagi_24, Oaker_29, Patience_37, Phreeze_29, Puissant_28, Thumb_29,

Summary by start number:

Start 1:

- Found in 10 of 27 (37.0%) of genes in pham
- Manual Annotations of this start: 8 of 23
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Candle_30 (R), Nilo_31 (R), Papyrus_30 (R), Riparian_30 (R), Rope_30 (R), Send513_30 (R), Weiss13_30 (R), Yelo_30 (R), Zenon_31 (R),

Start 2:

- Found in 2 of 27 (7.4%) of genes in pham
- Manual Annotations of this start: 2 of 23
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fowlmouth_24 (AC), MrMiyagi_24 (AC),

Start 3:

- Found in 1 of 27 (3.7%) of genes in pham
- Manual Annotations of this start: 1 of 23
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi_27 (AC),

Start 5:

- Found in 10 of 27 (37.0%) of genes in pham
- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: MontyDev_30 (R),

Start 13:

- Found in 5 of 27 (18.5%) of genes in pham
- Manual Annotations of this start: 5 of 23
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnyard_36 (H2), DrLupo_38 (H2), Labelle_36 (U), Madruga_35 (U), Patience_37 (U),

Start 30:

- Found in 9 of 27 (33.3%) of genes in pham
- Manual Annotations of this start: 7 of 23
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton_29 (H1), Cborch11_30 (H1), Damien_29 (H1), Konstantine_34 (H1), Megatron06_32 (H1), Oaker_29 (H1), Phreeze_29 (H1), Puissant_28 (H1), Thumb_29 (H1),

Summary by clusters:

There are 5 clusters represented in this pham: H2, R, H1, U, AC,

Info for manual annotations of cluster AC:

- Start number 2 was manually annotated 2 times for cluster AC.
- Start number 3 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster H1:

- Start number 30 was manually annotated 7 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 13 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 1 was manually annotated 8 times for cluster R.

Info for manual annotations of cluster U:

- Start number 13 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Barnyard_36 Start: 26772, Stop: 29858, Start Num: 13

Candidate Starts for Barnyard_36:

(10, 26745), (Start: 13 @26772 has 5 MA's), (14, 26775), (20, 26895), (21, 26907), (23, 26925), (24, 26928), (28, 26982), (29, 26991), (32, 27012), (36, 27084), (42, 27120), (50, 27195), (54, 27273), (56, 27282), (57, 27288), (59, 27315), (72, 27432), (79, 27483), (80, 27486), (82, 27516), (85, 27540), (87, 27558), (97, 27690), (99, 27702), (108, 27783), (118, 27933), (123, 28017), (127, 28053), (134, 28107), (136, 28110), (138, 28128), (140, 28146), (143, 28182), (151, 28263), (159, 28323), (161, 28341), (166, 28377), (170, 28419), (171, 28431), (173, 28461), (175, 28473), (176, 28482), (185, 28557), (197, 28644), (206, 28752), (212, 28797), (214, 28818), (220, 28866), (223, 28905), (225, 28917), (229, 28941), (230, 28947), (233, 28977), (236, 29019), (239, 29037), (243, 29058), (247, 29079), (250, 29100), (252, 29118), (253, 29127), (256, 29181), (258, 29190), (261, 29232), (267, 29325), (272, 29358), (278, 29478), (280, 29505), (283, 29598), (289, 29652), (302, 29796),

Gene: Beckerton_29 Start: 26219, Stop: 29062, Start Num: 30

Candidate Starts for Beckerton_29:

(Start: 30 @26219 has 7 MA's), (45, 26351), (47, 26363), (48, 26372), (52, 26441), (53, 26447), (62, 26507), (64, 26528), (68, 26576), (73, 26618), (76, 26642), (81, 26675), (84, 26711), (86, 26723), (93, 26816), (100, 26873), (105, 26912), (117, 27038), (122, 27107), (125, 27137), (129, 27179), (137, 27230), (145, 27320), (146, 27338), (158, 27419), (165, 27458), (166, 27479), (182, 27617), (184, 27656), (191, 27719), (202, 27821), (231, 28046), (265, 28409), (270, 28436), (282, 28679), (286, 28712), (287, 28736), (298, 28856), (307, 28934), (310, 29021), (311, 29036), (312, 29042),

Gene: Candle_30 Start: 24637, Stop: 28131, Start Num: 1

Candidate Starts for Candle_30:

(Start: 1 @24637 has 8 MA's), (4, 24649), (5, 24661), (8, 24844), (11, 24925), (18, 25024), (19, 25048), (20, 25066), (34, 25225), (35, 25258), (42, 25306), (47, 25345), (55, 25471), (58, 25480), (77, 25666), (94, 25867), (111, 26044), (120, 26143), (122, 26176), (126, 26221), (127, 26233), (131, 26275), (132, 26281), (133, 26284), (142, 26353), (148, 26431), (149, 26437), (156, 26482), (157, 26485), (167, 26569), (196, 26824), (199, 26863), (215, 27010), (216, 27016), (235, 27190), (238, 27223), (242, 27244), (245, 27253), (249, 27280), (268, 27523), (279, 27667), (292, 27865), (294, 27895), (299, 27952), (301, 27988), (304, 28015), (307, 28027),

Gene: Cborch11_30 Start: 25681, Stop: 28524, Start Num: 30

Candidate Starts for Cborch11_30:

(Start: 30 @25681 has 7 MA's), (45, 25813), (47, 25825), (48, 25834), (52, 25903), (53, 25909), (62, 25969), (64, 25990), (68, 26038), (73, 26080), (76, 26104), (81, 26137), (84, 26173), (86, 26185), (93, 26278), (100, 26335), (105, 26374), (117, 26500), (122, 26569), (125, 26599), (129, 26641), (137, 26692), (145, 26782), (146, 26800), (158, 26881), (165, 26920), (166, 26941), (182, 27079), (184, 27118), (191, 27181), (202, 27283), (231, 27508), (265, 27871), (270, 27898), (282, 28141), (286, 28174), (287, 28198), (298, 28318), (307, 28396), (310, 28483), (311, 28498), (312, 28504),

Gene: Damien_29 Start: 25682, Stop: 28525, Start Num: 30

Candidate Starts for Damien_29:

(Start: 30 @25682 has 7 MA's), (45, 25814), (47, 25826), (48, 25835), (52, 25904), (53, 25910), (62, 25970), (64, 25991), (68, 26039), (73, 26081), (76, 26105), (81, 26138), (84, 26174), (86, 26186), (93, 26279), (100, 26336), (105, 26375), (117, 26501), (122, 26570), (125, 26600), (129, 26642), (137, 26693), (145, 26783), (146, 26801), (158, 26882), (165, 26921), (166, 26942), (182, 27080), (184, 27119), (191, 27182), (202, 27284), (231, 27509), (265, 27872), (270, 27899), (282, 28142), (286, 28175), (287, 28199), (298, 28319), (307, 28397), (310, 28484), (311, 28499), (312, 28505),

Gene: DrLupo_38 Start: 27172, Stop: 30258, Start Num: 13

Candidate Starts for DrLupo_38:

(10, 27145), (Start: 13 @27172 has 5 MA's), (14, 27175), (23, 27325), (24, 27328), (31, 27403), (32, 27412), (33, 27415), (36, 27484), (42, 27520), (50, 27595), (56, 27682), (61, 27718), (63, 27727), (65, 27748), (70, 27817), (74, 27841), (79, 27883), (80, 27886), (82, 27916), (87, 27958), (90, 28009), (97, 28090), (99, 28102), (106, 28162), (108, 28183), (110, 28222), (116, 28303), (119, 28336), (130, 28468), (134, 28507), (139, 28531), (140, 28546), (147, 28648), (150, 28660), (153, 28672), (154, 28675), (172, 28852), (178, 28885), (180, 28909), (186, 28966), (206, 29152), (214, 29218), (220, 29266), (225, 29317), (229, 29341), (230, 29347), (236, 29419), (240, 29443), (243, 29458), (253, 29527), (283, 29998), (289, 30052), (302, 30196),

Gene: Fowlmouth_24 Start: 20553, Stop: 24044, Start Num: 2

Candidate Starts for Fowlmouth_24:

(Start: 2 @20553 has 2 MA's), (9, 20778), (12, 20847), (16, 20880), (29, 21075), (36, 21171), (37, 21174), (38, 21180), (42, 21207), (46, 21225), (88, 21675), (89, 21696), (107, 21879), (109, 21882), (113, 21951), (114, 21957), (121, 22053), (122, 22077), (124, 22101), (131, 22176), (141, 22251), (149, 22338), (155, 22374), (161, 22425), (162, 22428), (169, 22488), (177, 22566), (182, 22599), (184, 22638), (192, 22710), (237, 23100), (244, 23136), (254, 23211), (263, 23334), (293, 23790), (309, 23973),

Gene: Indlulamithi_27 Start: 22936, Stop: 26442, Start Num: 3

Candidate Starts for Indlulamithi_27:

(Start: 3 @22936 has 1 MA's), (6, 23059), (7, 23110), (17, 23290), (25, 23401), (26, 23425), (27, 23434), (36, 23551), (37, 23554), (38, 23560), (40, 23572), (42, 23587), (43, 23596), (49, 23641), (83, 24019), (89, 24088), (94, 24154), (96, 24175), (98, 24181), (101, 24205), (116, 24430), (122, 24535), (129, 24619), (147, 24799), (149, 24808), (152, 24820), (157, 24853), (164, 24904), (168, 24940), (172, 25003), (177, 25045), (181, 25072), (185, 25126), (186, 25135), (188, 25180), (201, 25300), (207, 25330), (208, 25339), (210, 25342), (222, 25486), (227, 25522), (228, 25531), (232, 25558), (234, 25579), (241, 25639), (248, 25678), (251, 25702), (257, 25780), (285, 26194), (291, 26251), (294, 26293), (300, 26371),

Gene: Konstantine_34 Start: 26883, Stop: 29726, Start Num: 30

Candidate Starts for Konstantine_34:

(Start: 30 @26883 has 7 MA's), (45, 27015), (47, 27027), (48, 27036), (52, 27105), (62, 27171), (64, 27192), (68, 27240), (73, 27282), (76, 27306), (81, 27339), (84, 27375), (86, 27387), (93, 27480), (100, 27537), (105, 27576), (122, 27771), (125, 27801), (129, 27843), (145, 27984), (146, 28002),

(158, 28083), (165, 28122), (166, 28143), (182, 28281), (184, 28320), (191, 28383), (202, 28485), (231, 28710), (265, 29073), (270, 29100), (282, 29343), (286, 29376), (287, 29400), (298, 29520), (307, 29598), (310, 29685), (311, 29700), (312, 29706),

Gene: Labelle_36 Start: 28741, Stop: 32043, Start Num: 13

Candidate Starts for Labelle_36:

(Start: 13 @28741 has 5 MA's), (15, 28753), (22, 28882), (23, 28891), (25, 28903), (41, 29071), (42, 29077), (51, 29161), (66, 29314), (69, 29356), (71, 29389), (75, 29416), (78, 29428), (95, 29644), (104, 29701), (106, 29722), (115, 29827), (116, 29863), (126, 30001), (134, 30070), (139, 30094), (150, 30220), (154, 30235), (157, 30262), (159, 30283), (160, 30298), (163, 30307), (189, 30613), (190, 30616), (194, 30637), (198, 30694), (200, 30730), (202, 30748), (203, 30751), (205, 30760), (209, 30775), (220, 30883), (226, 30946), (235, 31021), (239, 31063), (255, 31216), (260, 31255), (266, 31360), (269, 31378), (274, 31408), (275, 31420), (276, 31432), (281, 31621), (290, 31711), (295, 31771), (297, 31789), (303, 31864), (306, 31885), (308, 31921), (313, 32026), (314, 32032), (315, 32035),

Gene: Madruga_35 Start: 28410, Stop: 31712, Start Num: 13

Candidate Starts for Madruga_35:

(Start: 13 @28410 has 5 MA's), (15, 28422), (22, 28551), (23, 28560), (25, 28572), (42, 28746), (51, 28830), (65, 28974), (66, 28983), (69, 29025), (71, 29058), (78, 29097), (95, 29313), (104, 29370), (106, 29391), (115, 29496), (116, 29532), (126, 29670), (134, 29739), (139, 29763), (150, 29889), (154, 29904), (157, 29931), (159, 29952), (160, 29967), (163, 29976), (189, 30282), (190, 30285), (194, 30306), (198, 30363), (200, 30399), (204, 30423), (205, 30429), (209, 30444), (218, 30546), (220, 30552), (226, 30615), (235, 30690), (239, 30732), (255, 30885), (260, 30924), (262, 30951), (266, 31029), (269, 31047), (274, 31077), (275, 31089), (276, 31101), (281, 31290), (290, 31380), (295, 31440), (296, 31449), (305, 31548), (313, 31695), (314, 31701), (315, 31704),

Gene: Megatron06_32 Start: 26215, Stop: 29058, Start Num: 30

Candidate Starts for Megatron06_32:

(Start: 30 @26215 has 7 MA's), (45, 26347), (47, 26359), (48, 26368), (52, 26437), (53, 26443), (62, 26503), (64, 26524), (68, 26572), (73, 26614), (76, 26638), (81, 26671), (84, 26707), (86, 26719), (93, 26812), (100, 26869), (105, 26908), (117, 27034), (122, 27103), (125, 27133), (129, 27175), (137, 27226), (145, 27316), (146, 27334), (158, 27415), (165, 27454), (166, 27475), (182, 27613), (184, 27652), (191, 27715), (202, 27817), (231, 28042), (265, 28405), (270, 28432), (282, 28675), (286, 28708), (287, 28732), (298, 28852), (307, 28930), (310, 29017), (311, 29032), (312, 29038),

Gene: MontyDev_30 Start: 24302, Stop: 27778, Start Num: 5

Candidate Starts for MontyDev_30:

(Start: 1 @24278 has 8 MA's), (4, 24290), (5, 24302), (8, 24485), (11, 24566), (18, 24665), (19, 24689), (20, 24707), (34, 24866), (35, 24899), (42, 24947), (47, 24986), (55, 25112), (58, 25121), (77, 25307), (94, 25508), (111, 25685), (120, 25784), (122, 25817), (126, 25862), (127, 25874), (131, 25916), (132, 25922), (133, 25925), (142, 25994), (148, 26072), (149, 26078), (156, 26123), (157, 26126), (167, 26210), (174, 26279), (179, 26324), (183, 26369), (187, 26414), (188, 26435), (192, 26453), (193, 26456), (195, 26462), (196, 26465), (211, 26603), (215, 26651), (216, 26657), (224, 26738), (235, 26831), (242, 26891), (245, 26900), (246, 26906), (249, 26927), (263, 27092), (267, 27158), (268, 27170), (271, 27188), (273, 27194), (284, 27428), (287, 27467), (292, 27512), (294, 27542), (301, 27635), (304, 27662),

Gene: MrMiyagi_24 Start: 20573, Stop: 24064, Start Num: 2

Candidate Starts for MrMiyagi_24:

(Start: 2 @20573 has 2 MA's), (9, 20798), (12, 20867), (16, 20900), (29, 21095), (36, 21191), (37, 21194), (38, 21200), (42, 21227), (46, 21245), (88, 21695), (89, 21716), (94, 21782), (109, 21902), (113, 21971), (114, 21977), (124, 22121), (127, 22154), (131, 22196), (141, 22271), (149, 22358),

(161, 22445), (162, 22448), (165, 22460), (177, 22586), (182, 22619), (187, 22691), (192, 22730), (228, 23030), (237, 23120), (244, 23156), (293, 23810),

Gene: Nilo_31 Start: 24634, Stop: 28134, Start Num: 1

Candidate Starts for Nilo_31:

(Start: 1 @24634 has 8 MA's), (4, 24646), (5, 24658), (8, 24841), (11, 24922), (18, 25021), (19, 25045), (20, 25063), (34, 25222), (35, 25255), (42, 25303), (47, 25342), (55, 25468), (58, 25477), (77, 25663), (94, 25864), (111, 26041), (120, 26140), (122, 26173), (126, 26218), (127, 26230), (131, 26272), (135, 26284), (142, 26350), (149, 26434), (152, 26449), (156, 26479), (169, 26584), (174, 26635), (179, 26680), (183, 26725), (187, 26770), (188, 26791), (192, 26809), (193, 26812), (195, 26818), (196, 26821), (211, 26959), (215, 27007), (216, 27013), (224, 27094), (235, 27187), (242, 27247), (245, 27256), (246, 27262), (249, 27283), (263, 27448), (267, 27514), (268, 27526), (271, 27544), (273, 27550), (284, 27784), (287, 27823), (292, 27868), (294, 27898), (301, 27991), (304, 28018),

Gene: Oaker_29 Start: 25939, Stop: 28782, Start Num: 30

Candidate Starts for Oaker_29:

(Start: 30 @25939 has 7 MA's), (45, 26071), (47, 26083), (48, 26092), (52, 26161), (53, 26167), (62, 26227), (64, 26248), (68, 26296), (73, 26338), (76, 26362), (81, 26395), (84, 26431), (86, 26443), (93, 26536), (100, 26593), (105, 26632), (122, 26827), (125, 26857), (129, 26899), (137, 26950), (145, 27040), (146, 27058), (158, 27139), (165, 27178), (166, 27199), (182, 27337), (184, 27376), (191, 27439), (202, 27541), (231, 27766), (265, 28129), (270, 28156), (282, 28399), (286, 28432), (287, 28456), (298, 28576), (307, 28654), (310, 28741), (311, 28756), (312, 28762),

Gene: Papyrus_30 Start: 24299, Stop: 27793, Start Num: 1

Candidate Starts for Papyrus_30:

(Start: 1 @24299 has 8 MA's), (4, 24311), (5, 24323), (8, 24506), (11, 24587), (18, 24686), (19, 24710), (20, 24728), (34, 24887), (35, 24920), (42, 24968), (47, 25007), (55, 25133), (58, 25142), (77, 25328), (94, 25529), (111, 25706), (120, 25805), (122, 25838), (126, 25883), (133, 25946), (142, 26015), (148, 26093), (149, 26099), (156, 26144), (157, 26147), (167, 26231), (196, 26486), (199, 26525), (215, 26672), (216, 26678), (235, 26852), (238, 26885), (242, 26906), (245, 26915), (249, 26942), (268, 27185), (279, 27329), (292, 27527), (294, 27557), (299, 27614), (301, 27650), (304, 27677), (307, 27689),

Gene: Patience_37 Start: 29291, Stop: 32593, Start Num: 13

Candidate Starts for Patience_37:

(Start: 13 @29291 has 5 MA's), (15, 29303), (22, 29432), (23, 29441), (25, 29453), (42, 29627), (51, 29711), (65, 29855), (66, 29864), (69, 29906), (71, 29939), (75, 29966), (78, 29978), (95, 30194), (104, 30251), (106, 30272), (115, 30377), (116, 30413), (126, 30551), (134, 30620), (139, 30644), (150, 30770), (154, 30785), (157, 30812), (159, 30833), (160, 30848), (163, 30857), (189, 31163), (190, 31166), (194, 31187), (198, 31244), (200, 31280), (204, 31304), (205, 31310), (220, 31433), (226, 31496), (235, 31571), (239, 31613), (255, 31766), (260, 31805), (266, 31910), (269, 31928), (274, 31958), (275, 31970), (276, 31982), (281, 32171), (290, 32261), (295, 32321), (296, 32330), (305, 32429), (313, 32576), (314, 32582), (315, 32585),

Gene: Phreeze_29 Start: 25682, Stop: 28525, Start Num: 30

Candidate Starts for Phreeze_29:

(Start: 30 @25682 has 7 MA's), (45, 25814), (47, 25826), (48, 25835), (52, 25904), (62, 25970), (64, 25991), (68, 26039), (73, 26081), (76, 26105), (81, 26138), (84, 26174), (86, 26186), (93, 26279), (100, 26336), (105, 26375), (122, 26570), (125, 26600), (129, 26642), (145, 26783), (146, 26801), (158, 26882), (165, 26921), (166, 26942), (182, 27080), (184, 27119), (191, 27182), (202, 27284), (231, 27509), (265, 27872), (270, 27899), (282, 28142), (286, 28175), (287, 28199), (298, 28319), (307, 28397), (310, 28484), (311, 28499), (312, 28505),

Gene: Puissant_28 Start: 26145, Stop: 28988, Start Num: 30

Candidate Starts for Puissant_28:

(Start: 30 @26145 has 7 MA's), (39, 26247), (45, 26277), (47, 26289), (48, 26298), (53, 26373), (60, 26427), (62, 26433), (64, 26454), (67, 26475), (68, 26502), (91, 26715), (92, 26727), (102, 26808), (103, 26817), (112, 26904), (113, 26910), (117, 26964), (128, 27093), (129, 27105), (144, 27225), (145, 27246), (165, 27384), (177, 27510), (202, 27747), (213, 27819), (217, 27861), (219, 27873), (231, 27972), (241, 28068), (264, 28308), (277, 28416), (282, 28608), (286, 28641), (287, 28665), (288, 28683), (298, 28785), (307, 28863), (309, 28920), (310, 28950), (311, 28965),

Gene: Riparian_30 Start: 24095, Stop: 27595, Start Num: 1

Candidate Starts for Riparian_30:

(Start: 1 @24095 has 8 MA's), (4, 24107), (5, 24119), (8, 24302), (11, 24383), (18, 24482), (19, 24506), (20, 24524), (34, 24683), (35, 24716), (42, 24764), (47, 24803), (55, 24929), (58, 24938), (77, 25124), (94, 25325), (111, 25502), (120, 25601), (122, 25634), (126, 25679), (131, 25733), (135, 25745), (142, 25811), (149, 25895), (152, 25910), (156, 25940), (169, 26045), (174, 26096), (179, 26141), (183, 26186), (187, 26231), (188, 26252), (192, 26270), (193, 26273), (195, 26279), (196, 26282), (211, 26420), (215, 26468), (216, 26474), (221, 26534), (224, 26555), (235, 26648), (242, 26708), (245, 26717), (246, 26723), (249, 26744), (263, 26909), (267, 26975), (268, 26987), (271, 27005), (273, 27011), (284, 27245), (287, 27284), (292, 27329), (294, 27359), (301, 27452), (304, 27479),

Gene: Rope_30 Start: 24281, Stop: 27775, Start Num: 1

Candidate Starts for Rope_30:

(Start: 1 @24281 has 8 MA's), (4, 24293), (5, 24305), (8, 24488), (11, 24569), (18, 24668), (19, 24692), (20, 24710), (34, 24869), (35, 24902), (42, 24950), (47, 24989), (55, 25115), (58, 25124), (77, 25310), (94, 25511), (111, 25688), (120, 25787), (122, 25820), (126, 25865), (127, 25877), (131, 25919), (132, 25925), (133, 25928), (142, 25997), (148, 26075), (149, 26081), (156, 26126), (157, 26129), (167, 26213), (196, 26468), (199, 26507), (215, 26654), (216, 26660), (235, 26834), (238, 26867), (242, 26888), (245, 26897), (249, 26924), (268, 27167), (279, 27311), (292, 27509), (294, 27539), (299, 27596), (301, 27632), (304, 27659), (307, 27671),

Gene: Send513_30 Start: 24637, Stop: 28131, Start Num: 1

Candidate Starts for Send513_30:

(Start: 1 @24637 has 8 MA's), (4, 24649), (5, 24661), (8, 24844), (11, 24925), (18, 25024), (19, 25048), (20, 25066), (34, 25225), (35, 25258), (42, 25306), (47, 25345), (55, 25471), (58, 25480), (77, 25666), (94, 25867), (111, 26044), (120, 26143), (122, 26176), (126, 26221), (127, 26233), (131, 26275), (132, 26281), (133, 26284), (142, 26353), (148, 26431), (149, 26437), (156, 26482), (157, 26485), (167, 26569), (196, 26824), (199, 26863), (215, 27010), (216, 27016), (235, 27190), (238, 27223), (242, 27244), (245, 27253), (249, 27280), (268, 27523), (279, 27667), (292, 27865), (294, 27895), (299, 27952), (301, 27988), (304, 28015), (307, 28027),

Gene: Thumb_29 Start: 25682, Stop: 28525, Start Num: 30

Candidate Starts for Thumb_29:

(Start: 30 @25682 has 7 MA's), (45, 25814), (47, 25826), (48, 25835), (52, 25904), (62, 25970), (64, 25991), (68, 26039), (73, 26081), (76, 26105), (81, 26138), (84, 26174), (86, 26186), (93, 26279), (100, 26336), (105, 26375), (122, 26570), (125, 26600), (129, 26642), (145, 26783), (146, 26801), (158, 26882), (165, 26921), (166, 26942), (182, 27080), (184, 27119), (202, 27284), (213, 27356), (217, 27398), (219, 27410), (231, 27509), (265, 27872), (282, 28142), (286, 28175), (287, 28199), (298, 28319), (307, 28397), (310, 28484), (311, 28499), (312, 28505),

Gene: Weiss13_30 Start: 24327, Stop: 27827, Start Num: 1

Candidate Starts for Weiss13_30:

(Start: 1 @24327 has 8 MA's), (4, 24339), (5, 24351), (8, 24534), (11, 24615), (18, 24714), (19, 24738), (20, 24756), (34, 24915), (35, 24948), (42, 24996), (44, 25011), (47, 25035), (55, 25161), (58, 25170), (77, 25356), (94, 25557), (111, 25734), (120, 25833), (122, 25866), (126, 25911), (127, 25923), (131, 25965), (135, 25977), (142, 26043), (149, 26127), (152, 26142), (156, 26172), (169, 26277), (174, 26328), (179, 26373), (183, 26418), (187, 26463), (188, 26484), (192, 26502), (193, 26505), (195, 26511), (196, 26514), (211, 26652), (215, 26700), (216, 26706), (221, 26766), (224, 26787), (235, 26880), (242, 26940), (245, 26949), (246, 26955), (249, 26976), (259, 27081), (263, 27141), (267, 27207), (268, 27219), (271, 27237), (273, 27243), (284, 27477), (287, 27516), (292, 27561), (294, 27591), (301, 27684), (304, 27711),

Gene: Yelo_30 Start: 24620, Stop: 28120, Start Num: 1

Candidate Starts for Yelo_30:

(Start: 1 @24620 has 8 MA's), (4, 24632), (5, 24644), (8, 24827), (11, 24908), (18, 25007), (19, 25031), (20, 25049), (34, 25208), (35, 25241), (42, 25289), (47, 25328), (55, 25454), (58, 25463), (77, 25649), (94, 25850), (111, 26027), (120, 26126), (122, 26159), (126, 26204), (131, 26258), (133, 26267), (135, 26270), (142, 26336), (149, 26420), (152, 26435), (156, 26465), (169, 26570), (174, 26621), (179, 26666), (183, 26711), (187, 26756), (188, 26777), (192, 26795), (193, 26798), (195, 26804), (196, 26807), (211, 26945), (215, 26993), (216, 26999), (221, 27059), (224, 27080), (235, 27173), (242, 27233), (245, 27242), (246, 27248), (249, 27269), (263, 27434), (267, 27500), (268, 27512), (271, 27530), (273, 27536), (284, 27770), (287, 27809), (292, 27854), (294, 27884), (301, 27977), (304, 28004),

Gene: Zenon_31 Start: 24639, Stop: 28139, Start Num: 1

Candidate Starts for Zenon_31:

(Start: 1 @24639 has 8 MA's), (4, 24651), (5, 24663), (8, 24846), (11, 24927), (18, 25026), (19, 25050), (20, 25068), (34, 25227), (35, 25260), (42, 25308), (47, 25347), (55, 25473), (58, 25482), (77, 25668), (94, 25869), (111, 26046), (120, 26145), (122, 26178), (126, 26223), (127, 26235), (131, 26277), (135, 26289), (142, 26355), (149, 26439), (152, 26454), (156, 26484), (169, 26589), (174, 26640), (179, 26685), (183, 26730), (187, 26775), (188, 26796), (192, 26814), (193, 26817), (195, 26823), (196, 26826), (211, 26964), (215, 27012), (216, 27018), (221, 27078), (224, 27099), (235, 27192), (242, 27252), (245, 27261), (246, 27267), (249, 27288), (263, 27453), (267, 27519), (268, 27531), (271, 27549), (273, 27555), (284, 27789), (287, 27828), (292, 27873), (294, 27903), (301, 27996), (304, 28023),