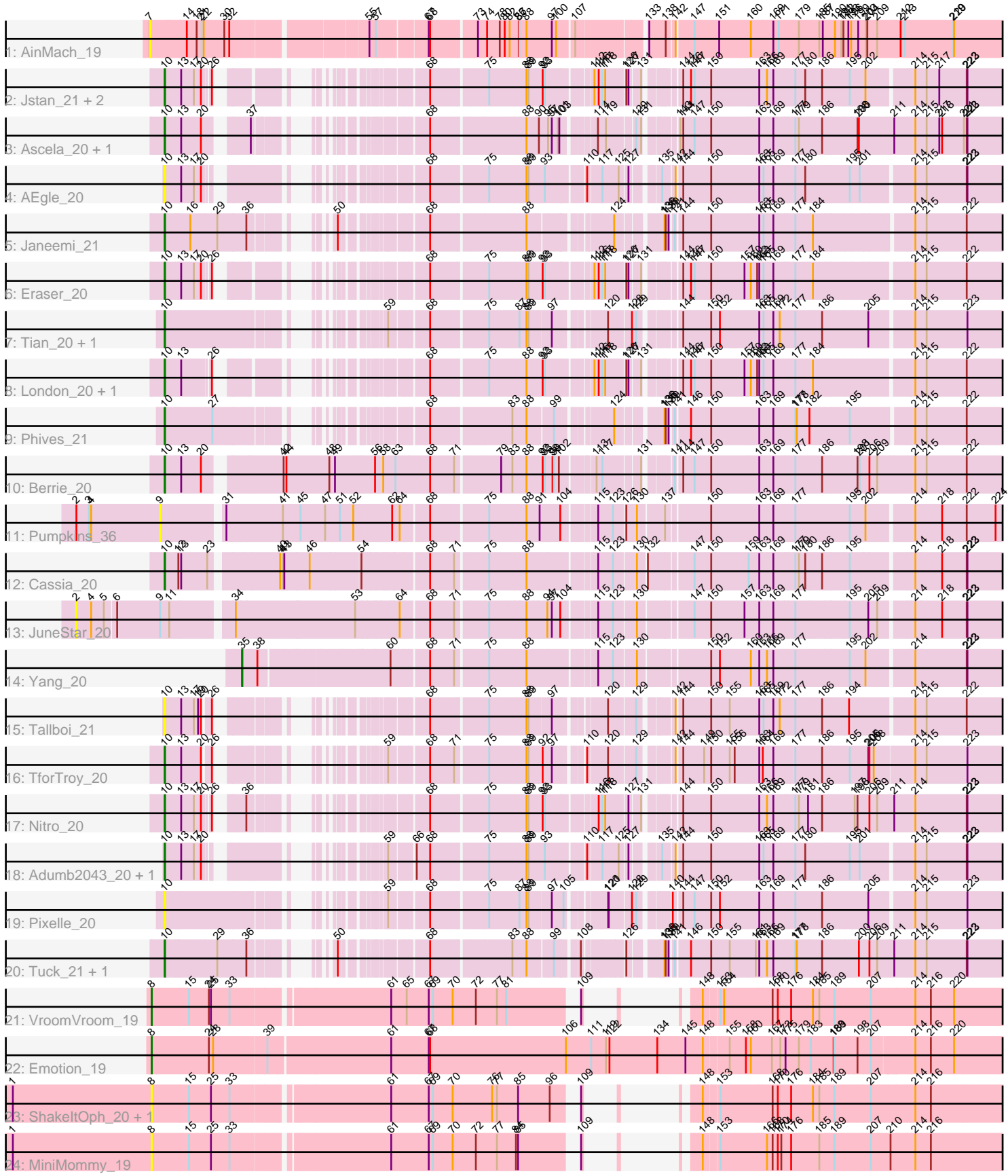


Pham 163813



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 163813 Report

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

Pham number 163813 has 32 members, 13 are drafts.

Phages represented in each track:

- Track 1 : AinMach_19
- Track 2 : Jstan_21, Asa16_20, Niobe_20
- Track 3 : Ascela_20, Iter_20
- Track 4 : AEgle_20
- Track 5 : Janeemi_21
- Track 6 : Eraser_20
- Track 7 : Tian_20, Amyev_20
- Track 8 : London_20, Elezi_20
- Track 9 : Phives_21
- Track 10 : Berrie_20
- Track 11 : Pumpkins_36
- Track 12 : Cassia_20
- Track 13 : JuneStar_20
- Track 14 : Yang_20
- Track 15 : Tallboi_21
- Track 16 : TforTroy_20
- Track 17 : Nitro_20
- Track 18 : Adumb2043_20, Turab_20
- Track 19 : Pixelle_20
- Track 20 : Tuck_21, Community_20
- Track 21 : VroomVroom_19
- Track 22 : Emotion_19
- Track 23 : ShakeltOph_20, JasmineDragon_20
- Track 24 : MiniMommy_19

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

The start number called the most often in the published annotations is 10, it was called in 16 of the 19 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle_20, Adumb2043_20, Amyev_20, Asa16_20, Ascela_20, Berrie_20, Cassia_20, Community_20, Elezi_20, Eraser_20, Iter_20, Janeemi_21, Jstan_21, London_20, Niobe_20, Nitro_20, Phives_21, Pixelle_20, Tallboi_21, TforTroy_20,

Tian_20, Tuck_21, Turab_20,

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

-

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

- AinMach_19, Emotion_19, JasmineDragon_20, JuneStar_20, MiniMommy_19, Pumpkins_36, ShakeltOph_20, VroomVroom_19, Yang_20,

Summary by start number:

Start 2:

- Found in 2 of 32 (6.2%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: JuneStar_20 (AZ1),

Start 7:

- Found in 1 of 32 (3.1%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AinMach_19 (AZ),

Start 8:

- Found in 5 of 32 (15.6%) of genes in pham
- Manual Annotations of this start: 2 of 19
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emotion_19 (AZ4), JasmineDragon_20 (AZ4), MiniMommy_19 (AZ4), ShakeltOph_20 (AZ4), VroomVroom_19 (AZ4),

Start 9:

- Found in 2 of 32 (6.2%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Pumpkins_36 (AZ1),

Start 10:

- Found in 23 of 32 (71.9%) of genes in pham
- Manual Annotations of this start: 16 of 19
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AEgle_20 (AZ1), Adumb2043_20 (AZ1), Amyev_20 (AZ1), Asa16_20 (AZ1), Ascela_20 (AZ1), Berrie_20 (AZ1), Cassia_20 (AZ1), Community_20 (AZ1), Elezi_20 (AZ1), Eraser_20 (AZ1), Iter_20 (AZ1), Janeemi_21 (AZ1), Jstan_21 (AZ1), London_20 (AZ1), Niobe_20 (AZ1), Nitro_20 (AZ1), Phives_21 (AZ1), Pixelle_20 (AZ1), Tallboi_21 (AZ1), TforTroy_20 (AZ1), Tian_20 (AZ1), Tuck_21 (AZ1), Turab_20 (AZ1),

Start 35:

- Found in 1 of 32 (3.1%) of genes in pham
- Manual Annotations of this start: 1 of 19
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yang_20 (AZ1),

Summary by clusters:

There are 3 clusters represented in this pham: AZ1, AZ, AZ4,

Info for manual annotations of cluster AZ1:

- Start number 10 was manually annotated 16 times for cluster AZ1.
- Start number 35 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster AZ4:

- Start number 8 was manually annotated 2 times for cluster AZ4.

Gene Information:

Gene: AEgle_20 Start: 16059, Stop: 18917, Start Num: 10

Candidate Starts for AEgle_20:

(Start: 10 @16059 has 16 MA's), (13, 16122), (17, 16176), (20, 16206), (68, 16749), (75, 16968), (88, 17115), (89, 17124), (93, 17184), (110, 17334), (117, 17388), (125, 17457), (127, 17487), (135, 17577), (142, 17619), (144, 17637), (150, 17742), (163, 17943), (165, 17958), (169, 17994), (177, 18078), (180, 18120), (195, 18294), (201, 18333), (214, 18528), (215, 18573), (222, 18741), (223, 18744),

Gene: Adumb2043_20 Start: 16058, Stop: 18916, Start Num: 10

Candidate Starts for Adumb2043_20:

(Start: 10 @16058 has 16 MA's), (13, 16121), (17, 16175), (20, 16205), (59, 16610), (66, 16691), (68, 16748), (75, 16967), (88, 17114), (89, 17123), (93, 17183), (110, 17333), (117, 17387), (125, 17456), (127, 17486), (135, 17576), (142, 17618), (144, 17636), (150, 17741), (163, 17942), (165, 17957), (169, 17993), (177, 18077), (180, 18119), (195, 18293), (201, 18332), (214, 18527), (215, 18572), (222, 18740), (223, 18743),

Gene: AinMach_19 Start: 15227, Stop: 18562, Start Num: 7

Candidate Starts for AinMach_19:

(7, 15227), (14, 15374), (18, 15416), (21, 15437), (22, 15446), (30, 15533), (32, 15554), (55, 16064), (57, 16091), (67, 16292), (68, 16298), (73, 16472), (74, 16508), (78, 16562), (80, 16583), (82, 16598), (86, 16634), (87, 16637), (88, 16664), (97, 16757), (100, 16775), (107, 16841), (133, 17096), (138, 17153), (142, 17183), (147, 17243), (151, 17348), (160, 17480), (169, 17573), (171, 17594), (179, 17678), (185, 17765), (187, 17780), (190, 17831), (191, 17858), (192, 17867), (193, 17885), (196, 17897), (199, 17927), (203, 17960), (204, 17966), (209, 18008), (212, 18104), (213, 18122), (219, 18326), (220, 18329),

Gene: Amyev_20 Start: 16398, Stop: 19307, Start Num: 10

Candidate Starts for Amyev_20:

(Start: 10 @16398 has 16 MA's), (59, 17013), (68, 17151), (75, 17370), (87, 17490), (88, 17517), (89, 17526), (97, 17607), (120, 17787), (128, 17877), (129, 17895), (144, 18027), (150, 18132), (152, 18168), (163, 18333), (165, 18348), (169, 18384), (172, 18408), (177, 18468), (186, 18579), (205, 18759), (214, 18918), (215, 18963), (223, 19134),

Gene: Asa16_20 Start: 16027, Stop: 18864, Start Num: 10

Candidate Starts for Asa16_20:

(Start: 10 @16027 has 16 MA's), (13, 16090), (17, 16144), (20, 16174), (26, 16198), (68, 16696), (75, 16915), (88, 17062), (89, 17071), (92, 17122), (93, 17131), (112, 17302), (116, 17320), (117, 17335),

(118, 17347), (126, 17425), (127, 17434), (131, 17476), (144, 17584), (146, 17614), (147, 17629), (150, 17689), (163, 17890), (166, 17920), (169, 17941), (177, 18022), (180, 18064), (186, 18133), (195, 18238), (202, 18301), (214, 18475), (215, 18520), (217, 18574), (222, 18688), (223, 18691),

Gene: Ascela_20 Start: 16055, Stop: 18919, Start Num: 10

Candidate Starts for Ascela_20:

(Start: 10 @16055 has 16 MA's), (13, 16118), (20, 16202), (37, 16346), (68, 16748), (88, 17114), (90, 17159), (95, 17198), (97, 17213), (101, 17237), (103, 17243), (114, 17354), (119, 17387), (129, 17480), (131, 17501), (143, 17600), (144, 17612), (147, 17657), (150, 17717), (163, 17918), (169, 17969), (177, 18053), (179, 18068), (186, 18164), (198, 18299), (200, 18305), (211, 18443), (214, 18527), (215, 18572), (217, 18626), (218, 18638), (221, 18731), (222, 18743), (223, 18746),

Gene: Berrie_20 Start: 16192, Stop: 19419, Start Num: 10

Candidate Starts for Berrie_20:

(Start: 10 @16192 has 16 MA's), (13, 16255), (20, 16339), (42, 16615), (44, 16627), (48, 16810), (49, 16831), (56, 16996), (58, 17029), (63, 17080), (68, 17227), (71, 17329), (79, 17497), (83, 17539), (88, 17593), (92, 17653), (93, 17662), (98, 17695), (99, 17701), (102, 17722), (113, 17842), (117, 17866), (131, 18007), (141, 18094), (144, 18115), (147, 18160), (150, 18220), (163, 18421), (169, 18472), (177, 18556), (186, 18667), (198, 18802), (201, 18811), (206, 18850), (209, 18883), (214, 19030), (215, 19075), (222, 19243),

Gene: Cassia_20 Start: 16153, Stop: 19350, Start Num: 10

Candidate Starts for Cassia_20:

(Start: 10 @16153 has 16 MA's), (12, 16207), (13, 16216), (23, 16321), (40, 16573), (41, 16585), (43, 16591), (46, 16690), (54, 16894), (68, 17137), (71, 17239), (75, 17356), (88, 17503), (115, 17767), (123, 17830), (130, 17920), (132, 17953), (147, 18115), (150, 18175), (159, 18331), (163, 18376), (169, 18427), (177, 18508), (179, 18523), (180, 18550), (186, 18619), (195, 18724), (214, 18961), (218, 19072), (222, 19174), (223, 19177),

Gene: Community_20 Start: 17595, Stop: 20501, Start Num: 10

Candidate Starts for Community_20:

(Start: 10 @17595 has 16 MA's), (29, 17808), (36, 17931), (50, 18093), (68, 18348), (83, 18660), (88, 18714), (99, 18810), (108, 18891), (126, 19035), (136, 19149), (138, 19152), (139, 19164), (141, 19176), (146, 19227), (150, 19302), (155, 19380), (161, 19488), (163, 19503), (166, 19533), (169, 19554), (177, 19638), (178, 19644), (186, 19749), (200, 19890), (206, 19932), (209, 19965), (211, 20028), (214, 20112), (215, 20157), (222, 20325), (223, 20328),

Gene: Elezi_20 Start: 16028, Stop: 18865, Start Num: 10

Candidate Starts for Elezi_20:

(Start: 10 @16028 has 16 MA's), (13, 16091), (26, 16199), (68, 16697), (75, 16916), (88, 17063), (92, 17123), (93, 17132), (112, 17303), (116, 17321), (117, 17336), (118, 17348), (126, 17426), (127, 17435), (131, 17477), (144, 17585), (146, 17615), (147, 17630), (150, 17690), (157, 17831), (160, 17855), (162, 17882), (163, 17891), (165, 17906), (169, 17942), (177, 18026), (184, 18098), (214, 18476), (215, 18521), (222, 18689),

Gene: Emotion_19 Start: 14446, Stop: 17979, Start Num: 8

Candidate Starts for Emotion_19:

(Start: 8 @14446 has 2 MA's), (24, 14686), (28, 14704), (39, 14923), (61, 15427), (67, 15586), (68, 15592), (106, 16171), (111, 16279), (119, 16342), (122, 16357), (134, 16561), (145, 16681), (148, 16750), (155, 16843), (158, 16912), (160, 16933), (167, 17023), (173, 17056), (175, 17077), (179, 17134), (183, 17185), (188, 17275), (189, 17278), (198, 17368), (207, 17422), (214, 17587), (216, 17647), (220, 17746),

Gene: Eraser_20 Start: 16028, Stop: 18865, Start Num: 10

Candidate Starts for Eraser_20:

(Start: 10 @16028 has 16 MA's), (13, 16091), (17, 16145), (20, 16175), (26, 16199), (68, 16697), (75, 16916), (88, 17063), (89, 17072), (92, 17123), (93, 17132), (112, 17303), (116, 17321), (117, 17336), (118, 17348), (126, 17426), (127, 17435), (131, 17477), (144, 17585), (146, 17615), (147, 17630), (150, 17690), (157, 17831), (160, 17855), (162, 17882), (163, 17891), (165, 17906), (169, 17942), (177, 18026), (184, 18098), (214, 18476), (215, 18521), (222, 18689),

Gene: Iter_20 Start: 16055, Stop: 18919, Start Num: 10

Candidate Starts for Iter_20:

(Start: 10 @16055 has 16 MA's), (13, 16118), (20, 16202), (37, 16346), (68, 16748), (88, 17114), (90, 17159), (95, 17198), (97, 17213), (101, 17237), (103, 17243), (114, 17354), (119, 17387), (129, 17480), (131, 17501), (143, 17600), (144, 17612), (147, 17657), (150, 17717), (163, 17918), (169, 17969), (177, 18053), (179, 18068), (186, 18164), (198, 18299), (200, 18305), (211, 18443), (214, 18527), (215, 18572), (217, 18626), (218, 18638), (221, 18731), (222, 18743), (223, 18746),

Gene: Janeemi_21 Start: 17623, Stop: 20508, Start Num: 10

Candidate Starts for Janeemi_21:

(Start: 10 @17623 has 16 MA's), (16, 17725), (29, 17836), (36, 17959), (50, 18121), (68, 18376), (88, 18742), (124, 19030), (136, 19180), (138, 19183), (139, 19195), (141, 19207), (144, 19228), (150, 19333), (163, 19534), (165, 19549), (169, 19585), (177, 19669), (184, 19741), (214, 20119), (215, 20164), (222, 20332),

Gene: JasmineDragon_20 Start: 14321, Stop: 17332, Start Num: 8

Candidate Starts for JasmineDragon_20:

(1, 13733), (Start: 8 @14321 has 2 MA's), (15, 14477), (25, 14570), (33, 14648), (61, 15269), (67, 15428), (69, 15446), (70, 15530), (76, 15698), (77, 15719), (85, 15809), (96, 15944), (109, 16010), (148, 16079), (153, 16133), (168, 16352), (170, 16373), (176, 16430), (184, 16523), (185, 16550), (189, 16610), (207, 16763), (214, 16940), (216, 17000),

Gene: Jstan_21 Start: 16028, Stop: 18865, Start Num: 10

Candidate Starts for Jstan_21:

(Start: 10 @16028 has 16 MA's), (13, 16091), (17, 16145), (20, 16175), (26, 16199), (68, 16697), (75, 16916), (88, 17063), (89, 17072), (92, 17123), (93, 17132), (112, 17303), (116, 17321), (117, 17336), (118, 17348), (126, 17426), (127, 17435), (131, 17477), (144, 17585), (146, 17615), (147, 17630), (150, 17690), (163, 17891), (166, 17921), (169, 17942), (177, 18023), (180, 18065), (186, 18134), (195, 18239), (202, 18302), (214, 18476), (215, 18521), (217, 18575), (222, 18689), (223, 18692),

Gene: JuneStar_20 Start: 16151, Stop: 19756, Start Num: 2

Candidate Starts for JuneStar_20:

(2, 16151), (4, 16214), (5, 16268), (6, 16313), (9, 16496), (11, 16532), (34, 16763), (53, 17255), (64, 17435), (68, 17546), (71, 17648), (75, 17765), (88, 17912), (94, 17996), (97, 18011), (104, 18047), (115, 18173), (123, 18236), (130, 18326), (147, 18521), (150, 18581), (157, 18722), (163, 18782), (169, 18833), (177, 18917), (195, 19133), (205, 19208), (209, 19244), (214, 19367), (218, 19478), (222, 19580), (223, 19583),

Gene: London_20 Start: 16028, Stop: 18865, Start Num: 10

Candidate Starts for London_20:

(Start: 10 @16028 has 16 MA's), (13, 16091), (26, 16199), (68, 16697), (75, 16916), (88, 17063), (92, 17123), (93, 17132), (112, 17303), (116, 17321), (117, 17336), (118, 17348), (126, 17426), (127, 17435), (131, 17477), (144, 17585), (146, 17615), (147, 17630), (150, 17690), (157, 17831), (160, 17855), (162, 17882), (163, 17891), (165, 17906), (169, 17942), (177, 18026), (184, 18098), (214, 18476), (215, 18521), (222, 18689),

Gene: MiniMommy_19 Start: 14322, Stop: 17333, Start Num: 8

Candidate Starts for MiniMommy_19:

(1, 13734), (Start: 8 @14322 has 2 MA's), (15, 14478), (25, 14571), (33, 14649), (61, 15270), (67, 15429), (69, 15447), (70, 15531), (72, 15630), (77, 15720), (84, 15801), (85, 15810), (109, 16011), (148, 16080), (153, 16134), (166, 16329), (168, 16353), (170, 16374), (174, 16389), (176, 16431), (185, 16551), (189, 16611), (207, 16764), (210, 16842), (214, 16941), (216, 17001),

Gene: Niobe_20 Start: 16028, Stop: 18865, Start Num: 10

Candidate Starts for Niobe_20:

(Start: 10 @16028 has 16 MA's), (13, 16091), (17, 16145), (20, 16175), (26, 16199), (68, 16697), (75, 16916), (88, 17063), (89, 17072), (92, 17123), (93, 17132), (112, 17303), (116, 17321), (117, 17336), (118, 17348), (126, 17426), (127, 17435), (131, 17477), (144, 17585), (146, 17615), (147, 17630), (150, 17690), (163, 17891), (166, 17921), (169, 17942), (177, 18023), (180, 18065), (186, 18134), (195, 18239), (202, 18302), (214, 18476), (215, 18521), (217, 18575), (222, 18689), (223, 18692),

Gene: Nitro_20 Start: 16056, Stop: 18917, Start Num: 10

Candidate Starts for Nitro_20:

(Start: 10 @16056 has 16 MA's), (13, 16119), (17, 16173), (20, 16203), (26, 16227), (36, 16308), (68, 16725), (75, 16944), (88, 17091), (89, 17100), (92, 17151), (93, 17160), (116, 17349), (117, 17364), (118, 17376), (127, 17463), (131, 17505), (144, 17613), (150, 17718), (163, 17919), (166, 17949), (169, 17970), (177, 18054), (179, 18069), (181, 18108), (186, 18165), (197, 18288), (198, 18300), (206, 18348), (209, 18381), (211, 18444), (214, 18528), (222, 18741), (223, 18744),

Gene: Phives_21 Start: 17458, Stop: 20337, Start Num: 10

Candidate Starts for Phives_21:

(Start: 10 @17458 has 16 MA's), (27, 17650), (68, 18211), (83, 18523), (88, 18577), (99, 18673), (124, 18862), (136, 19012), (138, 19015), (139, 19027), (141, 19039), (146, 19090), (150, 19165), (163, 19366), (169, 19417), (177, 19498), (178, 19504), (182, 19558), (195, 19714), (214, 19948), (215, 19993), (222, 20161),

Gene: Pixelle_20 Start: 16401, Stop: 19310, Start Num: 10

Candidate Starts for Pixelle_20:

(Start: 10 @16401 has 16 MA's), (59, 17016), (68, 17154), (75, 17373), (87, 17493), (88, 17520), (89, 17529), (97, 17610), (105, 17658), (120, 17790), (121, 17793), (128, 17880), (129, 17898), (140, 18000), (144, 18030), (147, 18075), (150, 18135), (152, 18171), (163, 18336), (169, 18387), (177, 18471), (186, 18582), (205, 18762), (214, 18921), (215, 18966), (223, 19137),

Gene: Pumpkins_36 Start: 16520, Stop: 19783, Start Num: 9

Candidate Starts for Pumpkins_36:

(2, 16163), (3, 16217), (4, 16226), (9, 16520), (31, 16748), (41, 16976), (45, 17048), (47, 17153), (51, 17216), (52, 17273), (62, 17432), (64, 17459), (68, 17570), (75, 17789), (88, 17936), (91, 17987), (104, 18074), (115, 18200), (123, 18263), (126, 18308), (130, 18353), (137, 18452), (150, 18608), (163, 18809), (169, 18860), (177, 18941), (195, 19157), (202, 19220), (214, 19394), (218, 19505), (222, 19607), (224, 19730),

Gene: ShakeltOph_20 Start: 14321, Stop: 17332, Start Num: 8

Candidate Starts for ShakeltOph_20:

(1, 13733), (Start: 8 @14321 has 2 MA's), (15, 14477), (25, 14570), (33, 14648), (61, 15269), (67, 15428), (69, 15446), (70, 15530), (76, 15698), (77, 15719), (85, 15809), (96, 15944), (109, 16010), (148, 16079), (153, 16133), (168, 16352), (170, 16373), (176, 16430), (184, 16523), (185, 16550), (189, 16610), (207, 16763), (214, 16940), (216, 17000),

Gene: Tallboi_21 Start: 16061, Stop: 18886, Start Num: 10

Candidate Starts for Tallboi_21:

(Start: 10 @16061 has 16 MA's), (13, 16124), (17, 16178), (19, 16196), (20, 16208), (26, 16232), (68, 16730), (75, 16949), (88, 17096), (89, 17105), (97, 17186), (120, 17366), (129, 17474), (142, 17588), (144, 17606), (150, 17711), (155, 17789), (163, 17912), (165, 17927), (169, 17963), (172, 17987), (177, 18047), (186, 18158), (194, 18260), (214, 18497), (215, 18542), (222, 18710),

Gene: TforTroy_20 Start: 16181, Stop: 19015, Start Num: 10

Candidate Starts for TforTroy_20:

(Start: 10 @16181 has 16 MA's), (13, 16244), (20, 16328), (26, 16352), (59, 16712), (68, 16850), (71, 16952), (75, 17069), (88, 17216), (89, 17225), (92, 17270), (97, 17306), (110, 17408), (120, 17486), (129, 17594), (142, 17708), (144, 17726), (149, 17807), (150, 17831), (155, 17909), (156, 17930), (163, 18032), (164, 18044), (169, 18083), (177, 18164), (186, 18275), (195, 18377), (205, 18449), (206, 18452), (208, 18470), (214, 18626), (215, 18671), (223, 18842),

Gene: Tian_20 Start: 16398, Stop: 19307, Start Num: 10

Candidate Starts for Tian_20:

(Start: 10 @16398 has 16 MA's), (59, 17013), (68, 17151), (75, 17370), (87, 17490), (88, 17517), (89, 17526), (97, 17607), (120, 17787), (128, 17877), (129, 17895), (144, 18027), (150, 18132), (152, 18168), (163, 18333), (165, 18348), (169, 18384), (172, 18408), (177, 18468), (186, 18579), (205, 18759), (214, 18918), (215, 18963), (223, 19134),

Gene: Tuck_21 Start: 17575, Stop: 20481, Start Num: 10

Candidate Starts for Tuck_21:

(Start: 10 @17575 has 16 MA's), (29, 17788), (36, 17911), (50, 18073), (68, 18328), (83, 18640), (88, 18694), (99, 18790), (108, 18871), (126, 19015), (136, 19129), (138, 19132), (139, 19144), (141, 19156), (146, 19207), (150, 19282), (155, 19360), (161, 19468), (163, 19483), (166, 19513), (169, 19534), (177, 19618), (178, 19624), (186, 19729), (200, 19870), (206, 19912), (209, 19945), (211, 20008), (214, 20092), (215, 20137), (222, 20305), (223, 20308),

Gene: Turab_20 Start: 16058, Stop: 18916, Start Num: 10

Candidate Starts for Turab_20:

(Start: 10 @16058 has 16 MA's), (13, 16121), (17, 16175), (20, 16205), (59, 16610), (66, 16691), (68, 16748), (75, 16967), (88, 17114), (89, 17123), (93, 17183), (110, 17333), (117, 17387), (125, 17456), (127, 17486), (135, 17576), (142, 17618), (144, 17636), (150, 17741), (163, 17942), (165, 17957), (169, 17993), (177, 18077), (180, 18119), (195, 18293), (201, 18332), (214, 18527), (215, 18572), (222, 18740), (223, 18743),

Gene: VroomVroom_19 Start: 14338, Stop: 17349, Start Num: 8

Candidate Starts for VroomVroom_19:

(Start: 8 @14338 has 2 MA's), (15, 14494), (24, 14578), (25, 14587), (33, 14665), (61, 15286), (65, 15352), (67, 15445), (69, 15463), (70, 15547), (72, 15646), (77, 15736), (81, 15775), (109, 16027), (148, 16096), (153, 16150), (154, 16165), (168, 16369), (170, 16390), (176, 16447), (184, 16540), (185, 16567), (189, 16627), (207, 16780), (214, 16957), (216, 17017), (220, 17116),

Gene: Yang_20 Start: 16153, Stop: 19056, Start Num: 35

Candidate Starts for Yang_20:

(Start: 35 @16153 has 1 MA's), (38, 16216), (60, 16705), (68, 16843), (71, 16945), (75, 17062), (88, 17209), (115, 17473), (123, 17536), (130, 17626), (150, 17881), (152, 17917), (160, 18046), (163, 18082), (166, 18112), (169, 18133), (177, 18214), (195, 18430), (202, 18493), (214, 18667), (222, 18880), (223, 18883),