Pham 224453


1: Shuckle_12 + 1
2: Riptide_13 + 3
3: Sushi23_262 + 29
4: Samisti12_10 + 1
5: Bordeaux_13 + 29
6: Yaboi_275 + 3
7: Wofford_270 + 1
8: Genie2_14 + 5
9: Amabiko_13 + 11
10: Tomas_15 + 1
11: Enygma_279 + 1
12: LukeCage_275 + 1
13: Elmer_12 + 1
14: StarPlatinum_282 + 1
15: Mugiwara_283 + 1

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 224453 Report

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

Pham number 224453 has 104 members, 12 are drafts.

Phages represented in each track:
• Track 1 : Shuckle_12, Shuckle_265
• Track 2 : Riptide_13, Riptide_270, Anedea_11, Anedea_276
• Track 3 : Sushi23_262, Cursive_263, Watermoore_258, Larnav_11, HangryHippo_259, Scheme_265, Peebs_258, Lululemon_257, Pepperwood_12, PacManQ_257, Tribute_11, Cursive_9, Cross_259, PacManQ_10, Peebs_11, Sushi23_12, EGole_265, Larnav_261, Teutsch_11, Pepperwood_261, Watermoore_11, Tribute_257, Teutsch_258, EGole_11, BlueOtter_259, Cross_11, Scheme_12, HangryHippo_11, BlueOtter_11, Lululemon_10
• Track 4 : Samisti12_10, Samisti12_261
• Track 5 : Bordeaux_13, MindFlayer_264, Jollison_270, MindFlayer_12, IchabodCrane_12, Spelly_13, Quaran19_13, TomSawyer_278, Wipeout_265, Battuta_13, PumpkinSpice_277, CeilingFan_12, Quaran19_274, Spelly_279, CeilingFan_278, Karimac_271, SaltySpitoon_13, Wipeout_12, Gibbi_283, Rikishi_12, PumpkinSpice_13, TomSawyer_13, Gibbi_12, Battuta_270, Karimac_13, Jollison_13, Bordeaux_270, Birchlyn_10, IchabodCrane_265, Rikishi_282
• Track 6 : Yaboi_275, Sollertia_14, Yaboi_14, Sollertia_270
• Track 7 : Wofford_270, Wofford_12
• Track 8 : Genie2_14, BoomerJR_14, Stanimal_269, Stanimal_14, Genie2_269, BoomerJR_269
• Track 9 : Amabiko_13, KentuckyRacer_280, JimJam_281, Starbow_13, Spilled_12, Spilled_280, Starbow_270, Birchlyn_270, SaltySpitoon_273, Amabiko_277, KentuckyRacer_12, JimJam_13
• Track 10 : Tomas_15, Tomas_271
• Track 11 : Enygma_279, Enygma_11
• Track 12 : LukeCage_275, LukeCage_12
• Track 13 : Elmer_12, Elmer_279
• Track 14 : StarPlatinum_282, StarPlatinum_12
• Track 15 : Mugiwara_283, Mugiwara_11

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

The start number called the most often in the published annotations is 2, it was called in 52 of the 92 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Amabiko_13, Amabiko_277, Anedea_11, Anedea_276, Birchlyn_270, BlueOtter_11, BlueOtter_259, BoomerJR_14, BoomerJR_269, Cross_11, Cross_259, Cursive_263, Cursive_9, EGole_11, EGole_265, Genie2_14, Genie2_269, HangryHippo_11, HangryHippo_259, JimJam_13, JimJam_281, KentuckyRacer_12, KentuckyRacer_280, Larnav_11, Larnav_261, LukeCage_12, LukeCage_275, Lululemon_10, Lululemon_257, PacManQ_10, PacManQ_257, Peebs_11, Peebs_258, Pepperwood_12, Pepperwood_261, Riptide_13, Riptide_270, SaltySpitoon_273, Samisti12_10, Samisti12_261, Scheme_12, Scheme_265, Shuckle_12, Shuckle_265, Spilled_12, Spilled_280, Stanimal_14, Stanimal_269, Starbow_13, Starbow_270, Sushi23_12, Sushi23_262, Teutsch_11, Teutsch_258, Tribute_11, Tribute_257, Watermoore_11, Watermoore_258,

Genes that have the "Most Annotated" start but do not call it:
• Battuta_13, Battuta_270, Birchlyn_10, Bordeaux_13, Bordeaux_270, CeilingFan_12, CeilingFan_278, Elmer_12, Elmer_279, Enygma_11, Enygma_279, Gibbi_12, Gibbi_283, IchabodCrane_12, IchabodCrane_265, Jollison_13, Jollison_270, Karimac_13, Karimac_271, MindFlayer_12, MindFlayer_264, Mugiwara_11, Mugiwara_283, PumpkinSpice_13, PumpkinSpice_277, Quaran19_13, Quaran19_274, Rikishi_12, Rikishi_282, SaltySpitoon_13, Sollertia_14, Sollertia_270, Spelly_13, Spelly_279, TomSawyer_13, TomSawyer_278, Wipeout_12, Wipeout_265, Wofford_12, Wofford_270, Yaboi_14, Yaboi_275,

Genes that do not have the "Most Annotated" start:
• StarPlatinum_12, StarPlatinum_282, Tomas_15, Tomas_271,

Summary by start number:

Start 1:
• Found in 2 of 104 (1.9%) of genes in pham
• Manual Annotations of this start: 2 of 92
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Tomas_15 (BE2), Tomas_271 (BE2),

Start 2:
• Found in 100 of 104 (96.2%) of genes in pham
• Manual Annotations of this start: 52 of 92
• Called 58.0% of time when present
• Phage (with cluster) where this start called: Amabiko_13 (BE2), Amabiko_277 (BE2), Anedea_11 (BE1), Anedea_276 (BE1), Birchlyn_270 (BE2), BlueOtter_11 (BE1), BlueOtter_259 (BE1), BoomerJR_14 (BE2), BoomerJR_269 (BE2), Cross_11 (BE1), Cross_259 (BE1), Cursive_263 (BE1), Cursive_9 (BE1), EGole_11 (BE1), EGole_265 (BE1), Genie2_14 (BE2), Genie2_269 (BE2), HangryHippo_11 (BE1), HangryHippo_259 (BE1), JimJam_13 (BE2), JimJam_281 (BE2), KentuckyRacer_12 (BE2), KentuckyRacer_280 (BE2), Larnav_11 (BE1), Larnav_261 (BE1), LukeCage_12 (BE2), LukeCage_275 (BE2), Lululemon_10 (BE1), Lululemon_257 (BE1), PacManQ_10 (BE1), PacManQ_257 (BE1), Peebs_11 (BE1), Peebs_258 (BE1), Pepperwood_12 (BE1), Pepperwood_261 (BE1), Riptide_13 (BE1), Riptide_270 (BE1), SaltySpitoon_273 (BE2), Samisti12_10 (BE1), Samisti12_261 (BE1), Scheme_12 (BE1), Scheme_265 (BE1), Shuckle_12 (BE1), Shuckle_265 (BE1), Spilled_12 (BE2), Spilled_280 (BE2), Stanimal_14 (BE2), Stanimal_269 (BE2), Starbow_13 (BE2), Starbow_270 (BE2), Sushi23_12 (BE1), Sushi23_262 (BE1), Teutsch_11 (BE1), Teutsch_258 (BE1), Tribute_11 (BE1), Tribute_257 (BE1),

Watermoore_11 (BE1), Watermoore_258 (BE1),

Start 3:
• Found in 104 of 104 (100.0%) of genes in pham
• Manual Annotations of this start: 38 of 92
• Called 42.3% of time when present
• Phage (with cluster) where this start called: Battuta_13 (BE2), Battuta_270 (BE2), Birchlyn_10 (BE2), Bordeaux_13 (BE2), Bordeaux_270 (BE2), CeilingFan_12 (BE2), CeilingFan_278 (BE2), Elmer_12 (BE2), Elmer_279 (BE2), Enygma_11 (BE2), Enygma_279 (BE2), Gibbi_12 (BE2), Gibbi_283 (BE2), IchabodCrane_12 (BE2), IchabodCrane_265 (BE2), Jollison_13 (BE2), Jollison_270 (BE2), Karimac_13 (BE2), Karimac_271 (BE2), MindFlayer_12 (BE2), MindFlayer_264 (BE2), Mugiwara_11 (BE2), Mugiwara_283 (BE2), PumpkinSpice_13 (BE2), PumpkinSpice_277 (BE2), Quaran19_13 (BE2), Quaran19_274 (BE2), Rikishi_12 (BE2), Rikishi_282 (BE2), SaltySpitoon_13 (BE2), Sollertia_14 (BE2), Sollertia_270 (BE2), Spelly_13 (BE2), Spelly_279 (BE2), StarPlatinum_12 (BE2), StarPlatinum_282 (BE2), TomSawyer_13 (BE2), TomSawyer_278 (BE2), Wipeout_12 (BE2), Wipeout_265 (BE2), Wofford_12 (BE2), Wofford_270 (BE2), Yaboi_14 (BE2), Yaboi_275 (BE2),

Summary by clusters:

There are 2 clusters represented in this pham: BE2, BE1,

Info for manual annotations of cluster BE1:
•Start number 2 was manually annotated 32 times for cluster BE1.

Info for manual annotations of cluster BE2:
•Start number 1 was manually annotated 2 times for cluster BE2.
•Start number 2 was manually annotated 20 times for cluster BE2.
•Start number 3 was manually annotated 38 times for cluster BE2.

Gene Information:

Gene: Amabiko_13 Start: 7147, Stop: 6788, Start Num: 2
Candidate Starts for Amabiko_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Amabiko_277 Start: 125973, Stop: 125614, Start Num: 2
Candidate Starts for Amabiko_277:
(Start: 2 @125973 has 52 MA's), (Start: 3 @125967 has 38 MA's), (6, 125952), (7, 125877), (8, 125856), (13, 125757), (25, 125628),

Gene: Anedea_11 Start: 6493, Stop: 6170, Start Num: 2
Candidate Starts for Anedea_11:
(Start: 2 @6493 has 52 MA's), (Start: 3 @6487 has 38 MA's), (9, 6406), (10, 6373), (12, 6313), (16, 6283), (17, 6274), (20, 6253), (24, 6196),

Gene: Anedea_276 Start: 129542, Stop: 129219, Start Num: 2
Candidate Starts for Anedea_276:

(Start: 2 @129542 has 52 MA's), (Start: 3 @129536 has 38 MA's), (9, 129455), (10, 129422), (12, 129362), (16, 129332), (17, 129323), (20, 129302), (24, 129245),

Gene: Battuta_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for Battuta_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Battuta_270 Start: 125296, Stop: 124943, Start Num: 3
Candidate Starts for Battuta_270:
(Start: 2 @125302 has 52 MA's), (Start: 3 @125296 has 38 MA's), (6, 125281), (7, 125206), (8, 125185), (13, 125086), (25, 124957),

Gene: Birchlyn_270 Start: 121091, Stop: 120732, Start Num: 2
Candidate Starts for Birchlyn_270:
(Start: 2 @121091 has 52 MA's), (Start: 3 @121085 has 38 MA's), (6, 121070), (7, 120995), (8, 120974), (13, 120875), (25, 120746),

Gene: Birchlyn_10 Start: 4994, Stop: 4641, Start Num: 3
Candidate Starts for Birchlyn_10:
(Start: 2 @5000 has 52 MA's), (Start: 3 @4994 has 38 MA's), (6, 4979), (7, 4904), (8, 4883), (13, 4784), (25, 4655),

Gene: BlueOtter_259 Start: 127448, Stop: 127125, Start Num: 2
Candidate Starts for BlueOtter_259:
(Start: 2 @127448 has 52 MA's), (Start: 3 @127442 has 38 MA's), (5, 127433), (9, 127361), (10, 127328), (12, 127268), (16, 127238), (17, 127229), (23, 127163), (24, 127151),

Gene: BlueOtter_11 Start: 6361, Stop: 6038, Start Num: 2
Candidate Starts for BlueOtter_11:
(Start: 2 @6361 has 52 MA's), (Start: 3 @6355 has 38 MA's), (5, 6346), (9, 6274), (10, 6241), (12, 6181), (16, 6151), (17, 6142), (23, 6076), (24, 6064),

Gene: BoomerJR_14 Start: 7130, Stop: 6768, Start Num: 2
Candidate Starts for BoomerJR_14:
(Start: 2 @7130 has 52 MA's), (Start: 3 @7124 has 38 MA's), (7, 7031), (8, 7010), (12, 6914), (13, 6911), (19, 6857), (25, 6782),

Gene: BoomerJR_269 Start: 125918, Stop: 125556, Start Num: 2
Candidate Starts for BoomerJR_269:
(Start: 2 @125918 has 52 MA's), (Start: 3 @125912 has 38 MA's), (7, 125819), (8, 125798), (12, 125702), (13, 125699), (19, 125645), (25, 125570),

Gene: Bordeaux_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for Bordeaux_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Bordeaux_270 Start: 125879, Stop: 125526, Start Num: 3
Candidate Starts for Bordeaux_270:
(Start: 2 @125885 has 52 MA's), (Start: 3 @125879 has 38 MA's), (6, 125864), (7, 125789), (8, 125768), (13, 125669), (25, 125540),

Gene: CeilingFan_12 Start: 6752, Stop: 6399, Start Num: 3
Candidate Starts for CeilingFan_12:
(Start: 2 @6758 has 52 MA's), (Start: 3 @6752 has 38 MA's), (6, 6737), (7, 6662), (8, 6641), (13, 6542), (25, 6413),

Gene: CeilingFan_278 Start: 127359, Stop: 127006, Start Num: 3
Candidate Starts for CeilingFan_278:
(Start: 2 @127365 has 52 MA's), (Start: 3 @127359 has 38 MA's), (6, 127344), (7, 127269), (8, 127248), (13, 127149), (25, 127020),

Gene: Cross_259 Start: 128093, Stop: 127770, Start Num: 2
Candidate Starts for Cross_259:
(Start: 2 @128093 has 52 MA's), (Start: 3 @128087 has 38 MA's), (5, 128078), (9, 128006), (10, 127973), (12, 127913), (16, 127883), (17, 127874), (23, 127808), (24, 127796),

Gene: Cross_11 Start: 6361, Stop: 6038, Start Num: 2
Candidate Starts for Cross_11:
(Start: 2 @6361 has 52 MA's), (Start: 3 @6355 has 38 MA's), (5, 6346), (9, 6274), (10, 6241), (12, 6181), (16, 6151), (17, 6142), (23, 6076), (24, 6064),

Gene: Cursive_263 Start: 127188, Stop: 126865, Start Num: 2
Candidate Starts for Cursive_263:
(Start: 2 @127188 has 52 MA's), (Start: 3 @127182 has 38 MA's), (5, 127173), (9, 127101), (10, 127068), (12, 127008), (16, 126978), (17, 126969), (23, 126903), (24, 126891),

Gene: Cursive_9 Start: 5179, Stop: 4856, Start Num: 2
Candidate Starts for Cursive_9:
(Start: 2 @5179 has 52 MA's), (Start: 3 @5173 has 38 MA's), (5, 5164), (9, 5092), (10, 5059), (12, 4999), (16, 4969), (17, 4960), (23, 4894), (24, 4882),

Gene: EGole_265 Start: 131094, Stop: 130771, Start Num: 2
Candidate Starts for EGole_265:
(Start: 2 @131094 has 52 MA's), (Start: 3 @131088 has 38 MA's), (5, 131079), (9, 131007), (10, 130974), (12, 130914), (16, 130884), (17, 130875), (23, 130809), (24, 130797),

Gene: EGole_11 Start: 6782, Stop: 6459, Start Num: 2
Candidate Starts for EGole_11:
(Start: 2 @6782 has 52 MA's), (Start: 3 @6776 has 38 MA's), (5, 6767), (9, 6695), (10, 6662), (12, 6602), (16, 6572), (17, 6563), (23, 6497), (24, 6485),

Gene: Elmer_12 Start: 6271, Stop: 5918, Start Num: 3
Candidate Starts for Elmer_12:
(Start: 2 @6277 has 52 MA's), (Start: 3 @6271 has 38 MA's), (7, 6181), (8, 6160), (11, 6085), (12, 6064), (15, 6037), (25, 5932),

Gene: Elmer_279 Start: 128639, Stop: 128286, Start Num: 3
Candidate Starts for Elmer_279:
(Start: 2 @128645 has 52 MA's), (Start: 3 @128639 has 38 MA's), (7, 128549), (8, 128528), (11, 128453), (12, 128432), (15, 128405), (25, 128300),

Gene: Enygma_279 Start: 128827, Stop: 128474, Start Num: 3
Candidate Starts for Enygma_279:

(Start: 2 @128833 has 52 MA's), (Start: 3 @128827 has 38 MA's), (6, 128812), (7, 128737), (8, 128716), (13, 128617), (14, 128596), (25, 128488),

Gene: Enygma_11 Start: 6403, Stop: 6050, Start Num: 3
Candidate Starts for Enygma_11:
(Start: 2 @6409 has 52 MA's), (Start: 3 @6403 has 38 MA's), (6, 6388), (7, 6313), (8, 6292), (13, 6193), (14, 6172), (25, 6064),

Gene: Genie2_14 Start: 7130, Stop: 6768, Start Num: 2
Candidate Starts for Genie2_14:
(Start: 2 @7130 has 52 MA's), (Start: 3 @7124 has 38 MA's), (7, 7031), (8, 7010), (12, 6914), (13, 6911), (19, 6857), (25, 6782),

Gene: Genie2_269 Start: 126031, Stop: 125669, Start Num: 2
Candidate Starts for Genie2_269:
(Start: 2 @126031 has 52 MA's), (Start: 3 @126025 has 38 MA's), (7, 125932), (8, 125911), (12, 125815), (13, 125812), (19, 125758), (25, 125683),

Gene: Gibbi_283 Start: 126852, Stop: 126499, Start Num: 3
Candidate Starts for Gibbi_283:
(Start: 2 @126858 has 52 MA's), (Start: 3 @126852 has 38 MA's), (6, 126837), (7, 126762), (8, 126741), (13, 126642), (25, 126513),

Gene: Gibbi_12 Start: 6752, Stop: 6399, Start Num: 3
Candidate Starts for Gibbi_12:
(Start: 2 @6758 has 52 MA's), (Start: 3 @6752 has 38 MA's), (6, 6737), (7, 6662), (8, 6641), (13, 6542), (25, 6413),

Gene: HangryHippo_259 Start: 127448, Stop: 127125, Start Num: 2
Candidate Starts for HangryHippo_259:
(Start: 2 @127448 has 52 MA's), (Start: 3 @127442 has 38 MA's), (5, 127433), (9, 127361), (10, 127328), (12, 127268), (16, 127238), (17, 127229), (23, 127163), (24, 127151),

Gene: HangryHippo_11 Start: 6361, Stop: 6038, Start Num: 2
Candidate Starts for HangryHippo_11:
(Start: 2 @6361 has 52 MA's), (Start: 3 @6355 has 38 MA's), (5, 6346), (9, 6274), (10, 6241), (12, 6181), (16, 6151), (17, 6142), (23, 6076), (24, 6064),

Gene: IchabodCrane_12 Start: 6749, Stop: 6396, Start Num: 3
Candidate Starts for IchabodCrane_12:
(Start: 2 @6755 has 52 MA's), (Start: 3 @6749 has 38 MA's), (6, 6734), (7, 6659), (8, 6638), (13, 6539), (25, 6410),

Gene: IchabodCrane_265 Start: 125292, Stop: 124939, Start Num: 3
Candidate Starts for IchabodCrane_265:
(Start: 2 @125298 has 52 MA's), (Start: 3 @125292 has 38 MA's), (6, 125277), (7, 125202), (8, 125181), (13, 125082), (25, 124953),

Gene: JimJam_281 Start: 128682, Stop: 128323, Start Num: 2
Candidate Starts for JimJam_281:
(Start: 2 @128682 has 52 MA's), (Start: 3 @128676 has 38 MA's), (6, 128661), (7, 128586), (8, 128565), (13, 128466), (25, 128337),

Gene: JimJam_13 Start: 7146, Stop: 6787, Start Num: 2
Candidate Starts for JimJam_13:
(Start: 2 @7146 has 52 MA's), (Start: 3 @7140 has 38 MA's), (6, 7125), (7, 7050), (8, 7029), (13, 6930), (25, 6801),

Gene: Jollison_270 Start: 125816, Stop: 125463, Start Num: 3
Candidate Starts for Jollison_270:
(Start: 2 @125822 has 52 MA's), (Start: 3 @125816 has 38 MA's), (6, 125801), (7, 125726), (8, 125705), (13, 125606), (25, 125477),

Gene: Jollison_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for Jollison_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Karimac_271 Start: 126462, Stop: 126109, Start Num: 3
Candidate Starts for Karimac_271:
(Start: 2 @126468 has 52 MA's), (Start: 3 @126462 has 38 MA's), (6, 126447), (7, 126372), (8, 126351), (13, 126252), (25, 126123),

Gene: Karimac_13 Start: 7143, Stop: 6790, Start Num: 3
Candidate Starts for Karimac_13:
(Start: 2 @7149 has 52 MA's), (Start: 3 @7143 has 38 MA's), (6, 7128), (7, 7053), (8, 7032), (13, 6933), (25, 6804),

Gene: KentuckyRacer_280 Start: 128210, Stop: 127851, Start Num: 2
Candidate Starts for KentuckyRacer_280:
(Start: 2 @128210 has 52 MA's), (Start: 3 @128204 has 38 MA's), (6, 128189), (7, 128114), (8, 128093), (13, 127994), (25, 127865),

Gene: KentuckyRacer_12 Start: 6759, Stop: 6400, Start Num: 2
Candidate Starts for KentuckyRacer_12:
(Start: 2 @6759 has 52 MA's), (Start: 3 @6753 has 38 MA's), (6, 6738), (7, 6663), (8, 6642), (13, 6543), (25, 6414),

Gene: Larnav_11 Start: 6361, Stop: 6038, Start Num: 2
Candidate Starts for Larnav_11:
(Start: 2 @6361 has 52 MA's), (Start: 3 @6355 has 38 MA's), (5, 6346), (9, 6274), (10, 6241), (12, 6181), (16, 6151), (17, 6142), (23, 6076), (24, 6064),

Gene: Larnav_261 Start: 128366, Stop: 128043, Start Num: 2
Candidate Starts for Larnav_261:
(Start: 2 @128366 has 52 MA's), (Start: 3 @128360 has 38 MA's), (5, 128351), (9, 128279), (10, 128246), (12, 128186), (16, 128156), (17, 128147), (23, 128081), (24, 128069),

Gene: LukeCage_275 Start: 127593, Stop: 127234, Start Num: 2
Candidate Starts for LukeCage_275:
(Start: 2 @127593 has 52 MA's), (Start: 3 @127587 has 38 MA's), (6, 127572), (7, 127497), (8, 127476), (11, 127401), (13, 127377), (25, 127248),

Gene: LukeCage_12 Start: 6689, Stop: 6330, Start Num: 2
Candidate Starts for LukeCage_12:

(Start: 2 @6689 has 52 MA's), (Start: 3 @6683 has 38 MA's), (6, 6668), (7, 6593), (8, 6572), (11, 6497), (13, 6473), (25, 6344),

Gene: Lululemon_257 Start: 126633, Stop: 126310, Start Num: 2
Candidate Starts for Lululemon_257:
(Start: 2 @126633 has 52 MA's), (Start: 3 @126627 has 38 MA's), (5, 126618), (9, 126546), (10, 126513), (12, 126453), (16, 126423), (17, 126414), (23, 126348), (24, 126336),

Gene: Lululemon_10 Start: 5741, Stop: 5418, Start Num: 2
Candidate Starts for Lululemon_10:
(Start: 2 @5741 has 52 MA's), (Start: 3 @5735 has 38 MA's), (5, 5726), (9, 5654), (10, 5621), (12, 5561), (16, 5531), (17, 5522), (23, 5456), (24, 5444),

Gene: MindFlayer_264 Start: 124811, Stop: 124458, Start Num: 3
Candidate Starts for MindFlayer_264:
(Start: 2 @124817 has 52 MA's), (Start: 3 @124811 has 38 MA's), (6, 124796), (7, 124721), (8, 124700), (13, 124601), (25, 124472),

Gene: MindFlayer_12 Start: 6751, Stop: 6398, Start Num: 3
Candidate Starts for MindFlayer_12:
(Start: 2 @6757 has 52 MA's), (Start: 3 @6751 has 38 MA's), (6, 6736), (7, 6661), (8, 6640), (13, 6541), (25, 6412),

Gene: Mugiwara_283 Start: 127795, Stop: 127442, Start Num: 3
Candidate Starts for Mugiwara_283:
(Start: 2 @127801 has 52 MA's), (Start: 3 @127795 has 38 MA's), (6, 127780), (7, 127705), (8, 127684), (13, 127585), (22, 127489), (25, 127456),

Gene: Mugiwara_11 Start: 6410, Stop: 6057, Start Num: 3
Candidate Starts for Mugiwara_11:
(Start: 2 @6416 has 52 MA's), (Start: 3 @6410 has 38 MA's), (6, 6395), (7, 6320), (8, 6299), (13, 6200), (22, 6104), (25, 6071),

Gene: PacManQ_257 Start: 126633, Stop: 126310, Start Num: 2
Candidate Starts for PacManQ_257:
(Start: 2 @126633 has 52 MA's), (Start: 3 @126627 has 38 MA's), (5, 126618), (9, 126546), (10, 126513), (12, 126453), (16, 126423), (17, 126414), (23, 126348), (24, 126336),

Gene: PacManQ_10 Start: 5741, Stop: 5418, Start Num: 2
Candidate Starts for PacManQ_10:
(Start: 2 @5741 has 52 MA's), (Start: 3 @5735 has 38 MA's), (5, 5726), (9, 5654), (10, 5621), (12, 5561), (16, 5531), (17, 5522), (23, 5456), (24, 5444),

Gene: Peebs_258 Start: 128335, Stop: 128012, Start Num: 2
Candidate Starts for Peebs_258:
(Start: 2 @128335 has 52 MA's), (Start: 3 @128329 has 38 MA's), (5, 128320), (9, 128248), (10, 128215), (12, 128155), (16, 128125), (17, 128116), (23, 128050), (24, 128038),

Gene: Peebs_11 Start: 6360, Stop: 6037, Start Num: 2
Candidate Starts for Peebs_11:
(Start: 2 @6360 has 52 MA's), (Start: 3 @6354 has 38 MA's), (5, 6345), (9, 6273), (10, 6240), (12, 6180), (16, 6150), (17, 6141), (23, 6075), (24, 6063),

Gene: Pepperwood_12 Start: 6515, Stop: 6192, Start Num: 2
Candidate Starts for Pepperwood_12:
(Start: 2 @6515 has 52 MA's), (Start: 3 @6509 has 38 MA's), (5, 6500), (9, 6428), (10, 6395), (12, 6335), (16, 6305), (17, 6296), (23, 6230), (24, 6218),

Gene: Pepperwood_261 Start: 128300, Stop: 127977, Start Num: 2
Candidate Starts for Pepperwood_261:
(Start: 2 @128300 has 52 MA's), (Start: 3 @128294 has 38 MA's), (5, 128285), (9, 128213), (10, 128180), (12, 128120), (16, 128090), (17, 128081), (23, 128015), (24, 128003),

Gene: PumpkinSpice_277 Start: 127033, Stop: 126680, Start Num: 3
Candidate Starts for PumpkinSpice_277:
(Start: 2 @127039 has 52 MA's), (Start: 3 @127033 has 38 MA's), (6, 127018), (7, 126943), (8, 126922), (13, 126823), (25, 126694),

Gene: PumpkinSpice_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for PumpkinSpice_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Quaran19_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for Quaran19_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Quaran19_274 Start: 126323, Stop: 125970, Start Num: 3
Candidate Starts for Quaran19_274:
(Start: 2 @126329 has 52 MA's), (Start: 3 @126323 has 38 MA's), (6, 126308), (7, 126233), (8, 126212), (13, 126113), (25, 125984),

Gene: Rikishi_12 Start: 6751, Stop: 6398, Start Num: 3
Candidate Starts for Rikishi_12:
(Start: 2 @6757 has 52 MA's), (Start: 3 @6751 has 38 MA's), (6, 6736), (7, 6661), (8, 6640), (13, 6541), (25, 6412),

Gene: Rikishi_282 Start: 126824, Stop: 126471, Start Num: 3
Candidate Starts for Rikishi_282:
(Start: 2 @126830 has 52 MA's), (Start: 3 @126824 has 38 MA's), (6, 126809), (7, 126734), (8, 126713), (13, 126614), (25, 126485),

Gene: Riptide_13 Start: 6772, Stop: 6449, Start Num: 2
Candidate Starts for Riptide_13:
(Start: 2 @6772 has 52 MA's), (Start: 3 @6766 has 38 MA's), (9, 6685), (10, 6652), (12, 6592), (16, 6562), (17, 6553), (20, 6532), (24, 6475),

Gene: Riptide_270 Start: 128224, Stop: 127901, Start Num: 2
Candidate Starts for Riptide_270:
(Start: 2 @128224 has 52 MA's), (Start: 3 @128218 has 38 MA's), (9, 128137), (10, 128104), (12, 128044), (16, 128014), (17, 128005), (20, 127984), (24, 127927),

Gene: SaltySpitoon_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for SaltySpitoon_13:

(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: SaltySpitoon_273 Start: 125411, Stop: 125052, Start Num: 2
Candidate Starts for SaltySpitoon_273:
(Start: 2 @125411 has 52 MA's), (Start: 3 @125405 has 38 MA's), (6, 125390), (7, 125315), (8, 125294), (13, 125195), (25, 125066),

Gene: Samisti12_10 Start: 6360, Stop: 6037, Start Num: 2
Candidate Starts for Samisti12_10:
(Start: 2 @6360 has 52 MA's), (Start: 3 @6354 has 38 MA's), (5, 6345), (9, 6273), (10, 6240), (12, 6180), (16, 6150), (17, 6141), (23, 6075), (24, 6063),

Gene: Samisti12_261 Start: 129404, Stop: 129081, Start Num: 2
Candidate Starts for Samisti12_261:
(Start: 2 @129404 has 52 MA's), (Start: 3 @129398 has 38 MA's), (5, 129389), (9, 129317), (10, 129284), (12, 129224), (16, 129194), (17, 129185), (23, 129119), (24, 129107),

Gene: Scheme_265 Start: 129710, Stop: 129387, Start Num: 2
Candidate Starts for Scheme_265:
(Start: 2 @129710 has 52 MA's), (Start: 3 @129704 has 38 MA's), (5, 129695), (9, 129623), (10, 129590), (12, 129530), (16, 129500), (17, 129491), (23, 129425), (24, 129413),

Gene: Scheme_12 Start: 6515, Stop: 6192, Start Num: 2
Candidate Starts for Scheme_12:
(Start: 2 @6515 has 52 MA's), (Start: 3 @6509 has 38 MA's), (5, 6500), (9, 6428), (10, 6395), (12, 6335), (16, 6305), (17, 6296), (23, 6230), (24, 6218),

Gene: Shuckle_12 Start: 6805, Stop: 6482, Start Num: 2
Candidate Starts for Shuckle_12:
(Start: 2 @6805 has 52 MA's), (Start: 3 @6799 has 38 MA's), (5, 6790), (9, 6718), (10, 6685), (12, 6625), (16, 6595), (17, 6586), (23, 6520), (24, 6508),

Gene: Shuckle_265 Start: 129438, Stop: 129115, Start Num: 2
Candidate Starts for Shuckle_265:
(Start: 2 @129438 has 52 MA's), (Start: 3 @129432 has 38 MA's), (5, 129423), (9, 129351), (10, 129318), (12, 129258), (16, 129228), (17, 129219), (23, 129153), (24, 129141),

Gene: Sollertia_14 Start: 7124, Stop: 6768, Start Num: 3
Candidate Starts for Sollertia_14:
(Start: 2 @7130 has 52 MA's), (Start: 3 @7124 has 38 MA's), (7, 7031), (8, 7010), (12, 6914), (13, 6911), (19, 6857), (25, 6782),

Gene: Sollertia_270 Start: 126014, Stop: 125658, Start Num: 3
Candidate Starts for Sollertia_270:
(Start: 2 @126020 has 52 MA's), (Start: 3 @126014 has 38 MA's), (7, 125921), (8, 125900), (12, 125804), (13, 125801), (19, 125747), (25, 125672),

Gene: Spelly_13 Start: 7141, Stop: 6788, Start Num: 3
Candidate Starts for Spelly_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Spelly_279 Start: 125945, Stop: 125592, Start Num: 3
Candidate Starts for Spelly_279:
(Start: 2 @125951 has 52 MA's), (Start: 3 @125945 has 38 MA's), (6, 125930), (7, 125855), (8, 125834), (13, 125735), (25, 125606),

Gene: Spilled_12 Start: 6757, Stop: 6398, Start Num: 2
Candidate Starts for Spilled_12:
(Start: 2 @6757 has 52 MA's), (Start: 3 @6751 has 38 MA's), (6, 6736), (7, 6661), (8, 6640), (13, 6541), (25, 6412),

Gene: Spilled_280 Start: 127226, Stop: 126867, Start Num: 2
Candidate Starts for Spilled_280:
(Start: 2 @127226 has 52 MA's), (Start: 3 @127220 has 38 MA's), (6, 127205), (7, 127130), (8, 127109), (13, 127010), (25, 126881),

Gene: Stanimal_269 Start: 126404, Stop: 126042, Start Num: 2
Candidate Starts for Stanimal_269:
(Start: 2 @126404 has 52 MA's), (Start: 3 @126398 has 38 MA's), (7, 126305), (8, 126284), (12, 126188), (13, 126185), (19, 126131), (25, 126056),

Gene: Stanimal_14 Start: 7130, Stop: 6768, Start Num: 2
Candidate Starts for Stanimal_14:
(Start: 2 @7130 has 52 MA's), (Start: 3 @7124 has 38 MA's), (7, 7031), (8, 7010), (12, 6914), (13, 6911), (19, 6857), (25, 6782),

Gene: StarPlatinum_282 Start: 128529, Stop: 128176, Start Num: 3
Candidate Starts for StarPlatinum_282:
(Start: 3 @128529 has 38 MA's), (4, 128523), (6, 128514), (7, 128439), (8, 128418), (13, 128319), (22, 128223), (25, 128190),

Gene: StarPlatinum_12 Start: 6842, Stop: 6489, Start Num: 3
Candidate Starts for StarPlatinum_12:
(Start: 3 @6842 has 38 MA's), (4, 6836), (6, 6827), (7, 6752), (8, 6731), (13, 6632), (22, 6536), (25, 6503),

Gene: Starbow_13 Start: 7147, Stop: 6788, Start Num: 2
Candidate Starts for Starbow_13:
(Start: 2 @7147 has 52 MA's), (Start: 3 @7141 has 38 MA's), (6, 7126), (7, 7051), (8, 7030), (13, 6931), (25, 6802),

Gene: Starbow_270 Start: 125995, Stop: 125636, Start Num: 2
Candidate Starts for Starbow_270:
(Start: 2 @125995 has 52 MA's), (Start: 3 @125989 has 38 MA's), (6, 125974), (7, 125899), (8, 125878), (13, 125779), (25, 125650),

Gene: Sushi23_262 Start: 129204, Stop: 128881, Start Num: 2
Candidate Starts for Sushi23_262:
(Start: 2 @129204 has 52 MA's), (Start: 3 @129198 has 38 MA's), (5, 129189), (9, 129117), (10, 129084), (12, 129024), (16, 128994), (17, 128985), (23, 128919), (24, 128907),

Gene: Sushi23_12 Start: 6361, Stop: 6038, Start Num: 2
Candidate Starts for Sushi23_12:

(Start: 2 @6361 has 52 MA's), (Start: 3 @6355 has 38 MA's), (5, 6346), (9, 6274), (10, 6241), (12, 6181), (16, 6151), (17, 6142), (23, 6076), (24, 6064),

Gene: Teutsch_11 Start: 6362, Stop: 6039, Start Num: 2
Candidate Starts for Teutsch_11:
(Start: 2 @6362 has 52 MA's), (Start: 3 @6356 has 38 MA's), (5, 6347), (9, 6275), (10, 6242), (12, 6182), (16, 6152), (17, 6143), (23, 6077), (24, 6065),

Gene: Teutsch_258 Start: 128571, Stop: 128248, Start Num: 2
Candidate Starts for Teutsch_258:
(Start: 2 @128571 has 52 MA's), (Start: 3 @128565 has 38 MA's), (5, 128556), (9, 128484), (10, 128451), (12, 128391), (16, 128361), (17, 128352), (23, 128286), (24, 128274),

Gene: TomSawyer_278 Start: 128513, Stop: 128160, Start Num: 3
Candidate Starts for TomSawyer_278:
(Start: 2 @128519 has 52 MA's), (Start: 3 @128513 has 38 MA's), (6, 128498), (7, 128423), (8, 128402), (13, 128303), (25, 128174),

Gene: TomSawyer_13 Start: 6734, Stop: 6381, Start Num: 3
Candidate Starts for TomSawyer_13:
(Start: 2 @6740 has 52 MA's), (Start: 3 @6734 has 38 MA's), (6, 6719), (7, 6644), (8, 6623), (13, 6524), (25, 6395),

Gene: Tomas_15 Start: 7771, Stop: 7403, Start Num: 1
Candidate Starts for Tomas_15:
(Start: 1 @7771 has 2 MA's), (Start: 3 @7720 has 38 MA's), (8, 7633), (13, 7534), (15, 7510), (18, 7486), (21, 7471),

Gene: Tomas_271 Start: 129478, Stop: 129110, Start Num: 1
Candidate Starts for Tomas_271:
(Start: 1 @129478 has 2 MA's), (Start: 3 @129427 has 38 MA's), (8, 129340), (13, 129241), (15, 129217), (18, 129193), (21, 129178),

Gene: Tribute_11 Start: 6361, Stop: 6038, Start Num: 2
Candidate Starts for Tribute_11:
(Start: 2 @6361 has 52 MA's), (Start: 3 @6355 has 38 MA's), (5, 6346), (9, 6274), (10, 6241), (12, 6181), (16, 6151), (17, 6142), (23, 6076), (24, 6064),

Gene: Tribute_257 Start: 128905, Stop: 128582, Start Num: 2
Candidate Starts for Tribute_257:
(Start: 2 @128905 has 52 MA's), (Start: 3 @128899 has 38 MA's), (5, 128890), (9, 128818), (10, 128785), (12, 128725), (16, 128695), (17, 128686), (23, 128620), (24, 128608),

Gene: Watermoore_258 Start: 128958, Stop: 128635, Start Num: 2
Candidate Starts for Watermoore_258:
(Start: 2 @128958 has 52 MA's), (Start: 3 @128952 has 38 MA's), (5, 128943), (9, 128871), (10, 128838), (12, 128778), (16, 128748), (17, 128739), (23, 128673), (24, 128661),

Gene: Watermoore_11 Start: 6362, Stop: 6039, Start Num: 2
Candidate Starts for Watermoore_11:
(Start: 2 @6362 has 52 MA's), (Start: 3 @6356 has 38 MA's), (5, 6347), (9, 6275), (10, 6242), (12, 6182), (16, 6152), (17, 6143), (23, 6077), (24, 6065),

Gene: Wipeout_265 Start: 127487, Stop: 127134, Start Num: 3
Candidate Starts for Wipeout_265:
(Start: 2 @127493 has 52 MA's), (Start: 3 @127487 has 38 MA's), (6, 127472), (7, 127397), (8, 127376), (13, 127277), (25, 127148),

Gene: Wipeout_12 Start: 6756, Stop: 6403, Start Num: 3
Candidate Starts for Wipeout_12:
(Start: 2 @6762 has 52 MA's), (Start: 3 @6756 has 38 MA's), (6, 6741), (7, 6666), (8, 6645), (13, 6546), (25, 6417),

Gene: Wofford_270 Start: 128069, Stop: 127716, Start Num: 3
Candidate Starts for Wofford_270:
(Start: 2 @128075 has 52 MA's), (Start: 3 @128069 has 38 MA's), (7, 127979), (8, 127958), (11, 127883), (12, 127862), (25, 127730),

Gene: Wofford_12 Start: 6276, Stop: 5923, Start Num: 3
Candidate Starts for Wofford_12:
(Start: 2 @6282 has 52 MA's), (Start: 3 @6276 has 38 MA's), (7, 6186), (8, 6165), (11, 6090), (12, 6069), (25, 5937),

Gene: Yaboi_275 Start: 125942, Stop: 125586, Start Num: 3
Candidate Starts for Yaboi_275:
(Start: 2 @125948 has 52 MA's), (Start: 3 @125942 has 38 MA's), (7, 125849), (8, 125828), (12, 125732), (13, 125729), (19, 125675), (25, 125600),

Gene: Yaboi_14 Start: 7124, Stop: 6768, Start Num: 3
Candidate Starts for Yaboi_14:
(Start: 2 @7130 has 52 MA's), (Start: 3 @7124 has 38 MA's), (7, 7031), (8, 7010), (12, 6914), (13, 6911), (19, 6857), (25, 6782),