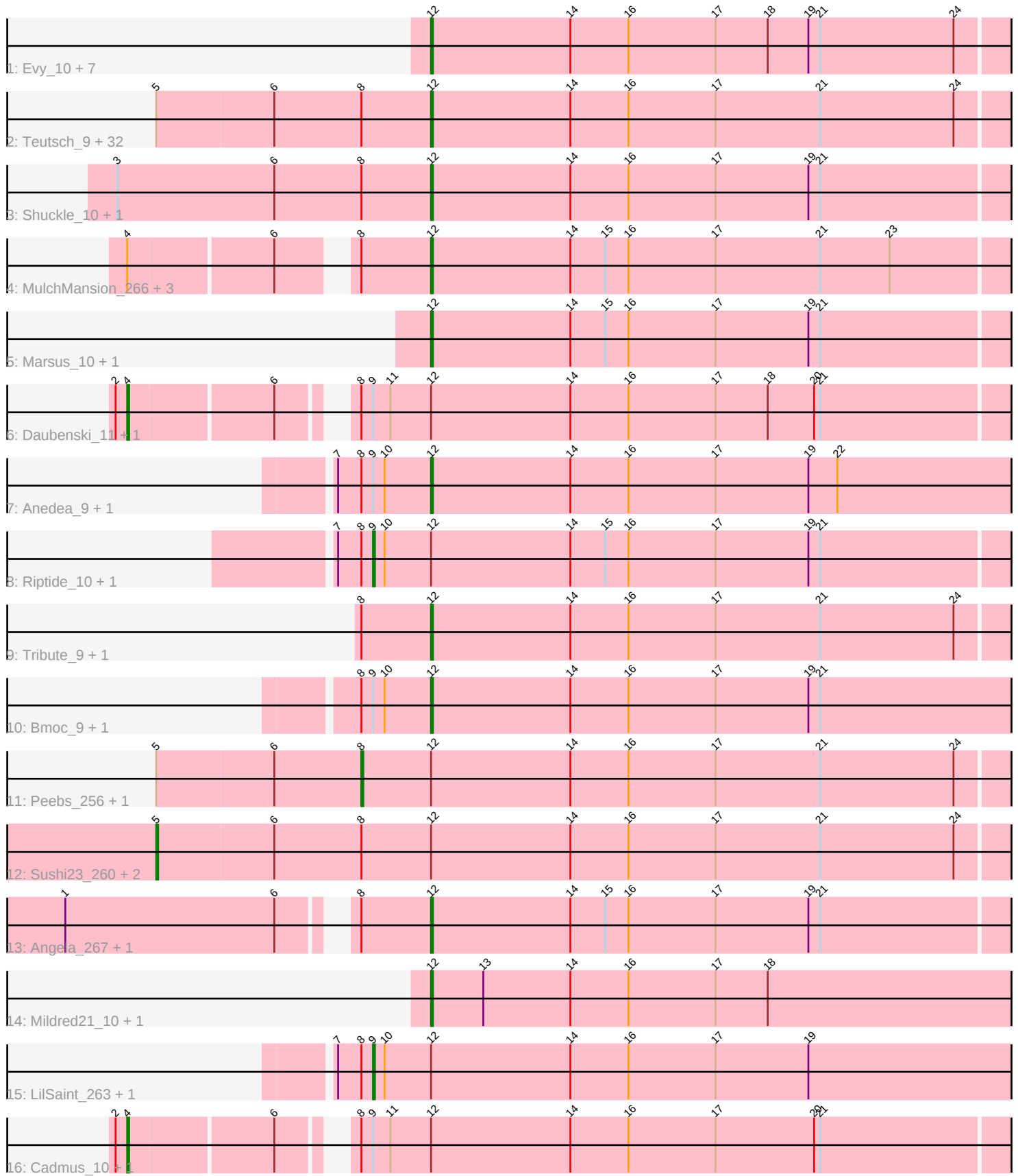


Pham 329003



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 329003 Report

This analysis was run 09/05/26 on database version 662.

Pham number 329003 has 72 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Evy_10, Warpy_11, Jay2Jay_266, Evy_248, Targaryen_260, Warpy_263, Targaryen_9, Jay2Jay_11
- Track 2 : Teutsch_9, HangryHippo_257, Sushi23_10, WashU_10, Coogler_255, Lululemon_255, ArianaSWT_270, EGole_263, Lululemon_8, Teutsch_256, Cursive_261, Larnav_259, EGole_9, Leo04_9, Larnav_9, WashU_254, Coogler_9, Scheme_10, BlueOtter_9, PacManQ_255, BlueOtter_257, Pepperwood_259, Cross_9, HangryHippo_9, Cursive_7, Leo04_260, Cross_257, Pepperwood_10, Watermoore_9, PacManQ_8, ArianaSWT_9, Watermoore_256, Scheme_263
- Track 3 : Shuckle_10, Shuckle_258
- Track 4 : MulchMansion_266, LilMartin_10, MulchMansion_10, LilMartin_262
- Track 5 : Marsus_10, Marsus_267
- Track 6 : Daubenski_11, Daubenski_255
- Track 7 : Anedea_9, Anedea_274
- Track 8 : Riptide_10, Riptide_265
- Track 9 : Tribute_9, Tribute_255
- Track 10 : Bmoc_9, Bmoc_265
- Track 11 : Peebs_256, Peebs_9
- Track 12 : Sushi23_260, Samisti12_260, Samisti12_9
- Track 13 : Angela_267, Angela_10
- Track 14 : Mildred21_10, Mildred21_273
- Track 15 : LilSaint_263, LilSaint_10
- Track 16 : Cadmus_10, Cadmus_258

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

The start number called the most often in the published annotations is 12, it was called in 57 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anedea_274, Anedea_9, Angela_10, Angela_267, ArianaSWT_270, ArianaSWT_9, BlueOtter_257, BlueOtter_9, Bmoc_265, Bmoc_9, Coogler_255, Coogler_9, Cross_257, Cross_9, Cursive_261, Cursive_7, EGole_263, EGole_9, Evy_10, Evy_248, HangryHippo_257, HangryHippo_9, Jay2Jay_11, Jay2Jay_266, Larnav_259, Larnav_9, Leo04_260, Leo04_9, LilMartin_10, LilMartin_262,

Lululemon_255, Lululemon_8, Marsus_10, Marsus_267, Mildred21_10, Mildred21_273, MulchMansion_10, MulchMansion_266, PacManQ_255, PacManQ_8, Pepperwood_10, Pepperwood_259, Scheme_10, Scheme_263, Shuckle_10, Shuckle_258, Sushi23_10, Targaryen_260, Targaryen_9, Teutsch_256, Teutsch_9, Tribute_255, Tribute_9, Warpy_11, Warpy_263, WashU_10, WashU_254, Watermoore_256, Watermoore_9,

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

- Cadmus_10, Cadmus_258, Daubenski_11, Daubenski_255, LilSaint_10, LilSaint_263, Peebs_256, Peebs_9, Riptide_10, Riptide_265, Samisti12_260, Samisti12_9, Sushi23_260,

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

-

Summary by start number:

Start 4:

- Found in 8 of 72 (11.1%) of genes in pham
- Manual Annotations of this start: 4 of 70
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cadmus_10 (BE1), Cadmus_258 (BE1), Daubenski_11 (BE1), Daubenski_255 (BE1),

Start 5:

- Found in 38 of 72 (52.8%) of genes in pham
- Manual Annotations of this start: 3 of 70
- Called 7.9% of time when present
- Phage (with cluster) where this start called: Samisti12_260 (BE1), Samisti12_9 (BE1), Sushi23_260 (BE1),

Start 8:

- Found in 60 of 72 (83.3%) of genes in pham
- Manual Annotations of this start: 2 of 70
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Peebs_256 (BE1), Peebs_9 (BE1),

Start 9:

- Found in 12 of 72 (16.7%) of genes in pham
- Manual Annotations of this start: 4 of 70
- Called 33.3% of time when present
- Phage (with cluster) where this start called: LilSaint_10 (BE1), LilSaint_263 (BE1), Riptide_10 (BE1), Riptide_265 (BE1),

Start 12:

- Found in 72 of 72 (100.0%) of genes in pham
- Manual Annotations of this start: 57 of 70
- Called 81.9% of time when present
- Phage (with cluster) where this start called: Anedea_274 (BE1), Anedea_9 (BE1), Angela_10 (BE1), Angela_267 (BE1), ArianaSWT_270 (BE1), ArianaSWT_9 (BE1), BlueOtter_257 (BE1), BlueOtter_9 (BE1), Bmoc_265 (BE1), Bmoc_9 (BE1), Coogler_255 (BE1), Coogler_9 (BE1), Cross_257 (BE1), Cross_9 (BE1), Cursive_261 (BE1), Cursive_7 (BE1), EGole_263 (BE1), EGole_9 (BE1), Evy_10 (BE1), Evy_248

(BE1), HangryHippo_257 (BE1), HangryHippo_9 (BE1), Jay2Jay_11 (BE1), Jay2Jay_266 (BE1), Larnav_259 (BE1), Larnav_9 (BE1), Leo04_260 (BE1), Leo04_9 (BE1), LiiMartin_10 (BE1), LiiMartin_262 (BE1), Lululemon_255 (BE1), Lululemon_8 (BE1), Marsus_10 (BE1), Marsus_267 (BE1), Mildred21_10 (BE1), Mildred21_273 (BE1), MulchMansion_10 (BE1), MulchMansion_266 (BE1), PacManQ_255 (BE1), PacManQ_8 (BE1), Pepperwood_10 (BE1), Pepperwood_259 (BE1), Scheme_10 (BE1), Scheme_263 (BE1), Shuckle_10 (BE1), Shuckle_258 (BE1), Sushi23_10 (BE1), Targaryen_260 (BE1), Targaryen_9 (BE1), Deutsch_256 (BE1), Deutsch_9 (BE1), Tribute_255 (BE1), Tribute_9 (BE1), Warpy_11 (BE1), Warpy_263 (BE1), WashU_10 (BE1), WashU_254 (BE1), Watermoore_256 (BE1), Watermoore_9 (BE1),

Summary by clusters:

There is one cluster represented in this pham: BE1

Info for manual annotations of cluster BE1:

- Start number 4 was manually annotated 4 times for cluster BE1.
- Start number 5 was manually annotated 3 times for cluster BE1.
- Start number 8 was manually annotated 2 times for cluster BE1.
- Start number 9 was manually annotated 4 times for cluster BE1.
- Start number 12 was manually annotated 57 times for cluster BE1.

Gene Information:

Gene: Anedea_9 Start: 5942, Stop: 5634, Start Num: 12

Candidate Starts for Anedea_9:

(7, 5990), (Start: 8 @5978 has 2 MA's), (Start: 9 @5972 has 4 MA's), (10, 5966), (Start: 12 @5942 has 57 MA's), (14, 5870), (16, 5840), (17, 5795), (19, 5747), (22, 5732),

Gene: Anedea_274 Start: 128991, Stop: 128683, Start Num: 12

Candidate Starts for Anedea_274:

(7, 129039), (Start: 8 @129027 has 2 MA's), (Start: 9 @129021 has 4 MA's), (10, 129015), (Start: 12 @128991 has 57 MA's), (14, 128919), (16, 128889), (17, 128844), (19, 128796), (22, 128781),

Gene: Angela_267 Start: 128577, Stop: 128272, Start Num: 12

Candidate Starts for Angela_267:

(1, 128748), (6, 128640), (Start: 8 @128613 has 2 MA's), (Start: 12 @128577 has 57 MA's), (14, 128505), (15, 128487), (16, 128475), (17, 128430), (19, 128382), (21, 128376),

Gene: Angela_10 Start: 6174, Stop: 5869, Start Num: 12

Candidate Starts for Angela_10:

(1, 6345), (6, 6237), (Start: 8 @6210 has 2 MA's), (Start: 12 @6174 has 57 MA's), (14, 6102), (15, 6084), (16, 6072), (17, 6027), (19, 5979), (21, 5973),

Gene: ArianaSWT_270 Start: 128627, Stop: 128322, Start Num: 12

Candidate Starts for ArianaSWT_270:

(Start: 5 @128768 has 3 MA's), (6, 128708), (Start: 8 @128663 has 2 MA's), (Start: 12 @128627 has 57 MA's), (14, 128555), (16, 128525), (17, 128480), (21, 128426), (24, 128357),

Gene: ArianaSWT_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for ArianaSWT_9:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: BlueOtter_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for BlueOtter_9:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: BlueOtter_257 Start: 126880, Stop: 126575, Start Num: 12

Candidate Starts for BlueOtter_257:

(Start: 5 @127021 has 3 MA's), (6, 126961), (Start: 8 @126916 has 2 MA's), (Start: 12 @126880 has 57 MA's), (14, 126808), (16, 126778), (17, 126733), (21, 126679), (24, 126610),

Gene: Bmoc_9 Start: 6033, Stop: 5725, Start Num: 12

Candidate Starts for Bmoc_9:

(Start: 8 @6069 has 2 MA's), (Start: 9 @6063 has 4 MA's), (10, 6057), (Start: 12 @6033 has 57 MA's), (14, 5961), (16, 5931), (17, 5886), (19, 5838), (21, 5832),

Gene: Bmoc_265 Start: 127855, Stop: 127547, Start Num: 12

Candidate Starts for Bmoc_265:

(Start: 8 @127891 has 2 MA's), (Start: 9 @127885 has 4 MA's), (10, 127879), (Start: 12 @127855 has 57 MA's), (14, 127783), (16, 127753), (17, 127708), (19, 127660), (21, 127654),

Gene: Cadmus_10 Start: 6182, Stop: 5742, Start Num: 4

Candidate Starts for Cadmus_10:

(2, 6188), (Start: 4 @6182 has 4 MA's), (6, 6110), (Start: 8 @6083 has 2 MA's), (Start: 9 @6077 has 4 MA's), (11, 6068), (Start: 12 @6047 has 57 MA's), (14, 5975), (16, 5945), (17, 5900), (20, 5849), (21, 5846),

Gene: Cadmus_258 Start: 128663, Stop: 128223, Start Num: 4

Candidate Starts for Cadmus_258:

(2, 128669), (Start: 4 @128663 has 4 MA's), (6, 128591), (Start: 8 @128564 has 2 MA's), (Start: 9 @128558 has 4 MA's), (11, 128549), (Start: 12 @128528 has 57 MA's), (14, 128456), (16, 128426), (17, 128381), (20, 128330), (21, 128327),

Gene: Coogler_255 Start: 127305, Stop: 127000, Start Num: 12

Candidate Starts for Coogler_255:

(Start: 5 @127446 has 3 MA's), (6, 127386), (Start: 8 @127341 has 2 MA's), (Start: 12 @127305 has 57 MA's), (14, 127233), (16, 127203), (17, 127158), (21, 127104), (24, 127035),

Gene: Coogler_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for Coogler_9:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: Cross_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for Cross_9:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: Cross_257 Start: 127525, Stop: 127220, Start Num: 12

Candidate Starts for Cross_257:

(Start: 5 @127666 has 3 MA's), (6, 127606), (Start: 8 @127561 has 2 MA's), (Start: 12 @127525 has 57 MA's), (14, 127453), (16, 127423), (17, 127378), (21, 127324), (24, 127255),

Gene: Cursive_261 Start: 126620, Stop: 126315, Start Num: 12

Candidate Starts for Cursive_261:

(Start: 5 @126761 has 3 MA's), (6, 126701), (Start: 8 @126656 has 2 MA's), (Start: 12 @126620 has 57 MA's), (14, 126548), (16, 126518), (17, 126473), (21, 126419), (24, 126350),

Gene: Cursive_7 Start: 4611, Stop: 4306, Start Num: 12

Candidate Starts for Cursive_7:

(Start: 5 @4752 has 3 MA's), (6, 4692), (Start: 8 @4647 has 2 MA's), (Start: 12 @4611 has 57 MA's), (14, 4539), (16, 4509), (17, 4464), (21, 4410), (24, 4341),

Gene: Daubenski_11 Start: 6180, Stop: 5740, Start Num: 4

Candidate Starts for Daubenski_11:

(2, 6186), (Start: 4 @6180 has 4 MA's), (6, 6108), (Start: 8 @6081 has 2 MA's), (Start: 9 @6075 has 4 MA's), (11, 6066), (Start: 12 @6045 has 57 MA's), (14, 5973), (16, 5943), (17, 5898), (18, 5871), (20, 5847), (21, 5844),

Gene: Daubenski_255 Start: 128556, Stop: 128116, Start Num: 4

Candidate Starts for Daubenski_255:

(2, 128562), (Start: 4 @128556 has 4 MA's), (6, 128484), (Start: 8 @128457 has 2 MA's), (Start: 9 @128451 has 4 MA's), (11, 128442), (Start: 12 @128421 has 57 MA's), (14, 128349), (16, 128319), (17, 128274), (18, 128247), (20, 128223), (21, 128220),

Gene: EGole_263 Start: 130525, Stop: 130220, Start Num: 12

Candidate Starts for EGole_263:

(Start: 5 @130666 has 3 MA's), (6, 130606), (Start: 8 @130561 has 2 MA's), (Start: 12 @130525 has 57 MA's), (14, 130453), (16, 130423), (17, 130378), (21, 130324), (24, 130255),

Gene: EGole_9 Start: 6213, Stop: 5908, Start Num: 12

Candidate Starts for EGole_9:

(Start: 5 @6354 has 3 MA's), (6, 6294), (Start: 8 @6249 has 2 MA's), (Start: 12 @6213 has 57 MA's), (14, 6141), (16, 6111), (17, 6066), (21, 6012), (24, 5943),

Gene: Evy_10 Start: 6128, Stop: 5823, Start Num: 12

Candidate Starts for Evy_10:

(Start: 12 @6128 has 57 MA's), (14, 6056), (16, 6026), (17, 5981), (18, 5954), (19, 5933), (21, 5927), (24, 5858),

Gene: Evy_248 Start: 127857, Stop: 127552, Start Num: 12

Candidate Starts for Evy_248:

(Start: 12 @127857 has 57 MA's), (14, 127785), (16, 127755), (17, 127710), (18, 127683), (19, 127662), (21, 127656), (24, 127587),

Gene: HangryHippo_257 Start: 126880, Stop: 126575, Start Num: 12

Candidate Starts for HangryHippo_257:

(Start: 5 @127021 has 3 MA's), (6, 126961), (Start: 8 @126916 has 2 MA's), (Start: 12 @126880 has 57 MA's), (14, 126808), (16, 126778), (17, 126733), (21, 126679), (24, 126610),

Gene: HangryHippo_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for HangryHippo_9:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: Jay2Jay_266 Start: 127925, Stop: 127620, Start Num: 12

Candidate Starts for Jay2Jay_266:

(Start: 12 @127925 has 57 MA's), (14, 127853), (16, 127823), (17, 127778), (18, 127751), (19, 127730), (21, 127724), (24, 127655),

Gene: Jay2Jay_11 Start: 5832, Stop: 5527, Start Num: 12

Candidate Starts for Jay2Jay_11:

(Start: 12 @5832 has 57 MA's), (14, 5760), (16, 5730), (17, 5685), (18, 5658), (19, 5637), (21, 5631), (24, 5562),

Gene: Larnav_259 Start: 127798, Stop: 127493, Start Num: 12

Candidate Starts for Larnav_259:

(Start: 5 @127939 has 3 MA's), (6, 127879), (Start: 8 @127834 has 2 MA's), (Start: 12 @127798 has 57 MA's), (14, 127726), (16, 127696), (17, 127651), (21, 127597), (24, 127528),

Gene: Larnav_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for Larnav_9:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: Leo04_9 Start: 5792, Stop: 5487, Start Num: 12

Candidate Starts for Leo04_9:

(Start: 5 @5933 has 3 MA's), (6, 5873), (Start: 8 @5828 has 2 MA's), (Start: 12 @5792 has 57 MA's), (14, 5720), (16, 5690), (17, 5645), (21, 5591), (24, 5522),

Gene: Leo04_260 Start: 127910, Stop: 127605, Start Num: 12

Candidate Starts for Leo04_260:

(Start: 5 @128051 has 3 MA's), (6, 127991), (Start: 8 @127946 has 2 MA's), (Start: 12 @127910 has 57 MA's), (14, 127838), (16, 127808), (17, 127763), (21, 127709), (24, 127640),

Gene: LilMartin_10 Start: 6160, Stop: 5855, Start Num: 12

Candidate Starts for LilMartin_10:

(Start: 4 @6298 has 4 MA's), (6, 6226), (Start: 8 @6196 has 2 MA's), (Start: 12 @6160 has 57 MA's), (14, 6088), (15, 6070), (16, 6058), (17, 6013), (21, 5959), (23, 5923),

Gene: LilMartin_262 Start: 127504, Stop: 127199, Start Num: 12

Candidate Starts for LilMartin_262:

(Start: 4 @127642 has 4 MA's), (6, 127570), (Start: 8 @127540 has 2 MA's), (Start: 12 @127504 has 57 MA's), (14, 127432), (15, 127414), (16, 127402), (17, 127357), (21, 127303), (23, 127267),

Gene: LilSaint_263 Start: 127835, Stop: 127497, Start Num: 9

Candidate Starts for LilSaint_263:

(7, 127853), (Start: 8 @127841 has 2 MA's), (Start: 9 @127835 has 4 MA's), (10, 127829), (Start: 12 @127805 has 57 MA's), (14, 127733), (16, 127703), (17, 127658), (19, 127610),

Gene: LilSaint_10 Start: 5985, Stop: 5647, Start Num: 9

Candidate Starts for LilSaint_10:

(7, 6003), (Start: 8 @5991 has 2 MA's), (Start: 9 @5985 has 4 MA's), (10, 5979), (Start: 12 @5955 has 57 MA's), (14, 5883), (16, 5853), (17, 5808), (19, 5760),

Gene: Lululemon_255 Start: 126065, Stop: 125760, Start Num: 12

Candidate Starts for Lululemon_255:

(Start: 5 @126206 has 3 MA's), (6, 126146), (Start: 8 @126101 has 2 MA's), (Start: 12 @126065 has 57 MA's), (14, 125993), (16, 125963), (17, 125918), (21, 125864), (24, 125795),

Gene: Lululemon_8 Start: 5173, Stop: 4868, Start Num: 12

Candidate Starts for Lululemon_8:

(Start: 5 @5314 has 3 MA's), (6, 5254), (Start: 8 @5209 has 2 MA's), (Start: 12 @5173 has 57 MA's), (14, 5101), (16, 5071), (17, 5026), (21, 4972), (24, 4903),

Gene: Marsus_10 Start: 6159, Stop: 5854, Start Num: 12

Candidate Starts for Marsus_10:

(Start: 12 @6159 has 57 MA's), (14, 6087), (15, 6069), (16, 6057), (17, 6012), (19, 5964), (21, 5958),

Gene: Marsus_267 Start: 129863, Stop: 129558, Start Num: 12

Candidate Starts for Marsus_267:

(Start: 12 @129863 has 57 MA's), (14, 129791), (15, 129773), (16, 129761), (17, 129716), (19, 129668), (21, 129662),

Gene: Mildred21_10 Start: 5748, Stop: 5440, Start Num: 12

Candidate Starts for Mildred21_10:

(Start: 12 @5748 has 57 MA's), (13, 5721), (14, 5676), (16, 5646), (17, 5601), (18, 5574),

Gene: Mildred21_273 Start: 126906, Stop: 126598, Start Num: 12

Candidate Starts for Mildred21_273:

(Start: 12 @126906 has 57 MA's), (13, 126879), (14, 126834), (16, 126804), (17, 126759), (18, 126732),

Gene: MulchMansion_266 Start: 129138, Stop: 128833, Start Num: 12

Candidate Starts for MulchMansion_266:

(Start: 4 @129276 has 4 MA's), (6, 129204), (Start: 8 @129174 has 2 MA's), (Start: 12 @129138 has 57 MA's), (14, 129066), (15, 129048), (16, 129036), (17, 128991), (21, 128937), (23, 128901),

Gene: MulchMansion_10 Start: 6160, Stop: 5855, Start Num: 12

Candidate Starts for MulchMansion_10:

(Start: 4 @6298 has 4 MA's), (6, 6226), (Start: 8 @6196 has 2 MA's), (Start: 12 @6160 has 57 MA's), (14, 6088), (15, 6070), (16, 6058), (17, 6013), (21, 5959), (23, 5923),

Gene: PacManQ_255 Start: 126065, Stop: 125760, Start Num: 12

Candidate Starts for PacManQ_255:

(Start: 5 @126206 has 3 MA's), (6, 126146), (Start: 8 @126101 has 2 MA's), (Start: 12 @126065 has 57 MA's), (14, 125993), (16, 125963), (17, 125918), (21, 125864), (24, 125795),

Gene: PacManQ_8 Start: 5173, Stop: 4868, Start Num: 12

Candidate Starts for PacManQ_8:

(Start: 5 @5314 has 3 MA's), (6, 5254), (Start: 8 @5209 has 2 MA's), (Start: 12 @5173 has 57 MA's), (14, 5101), (16, 5071), (17, 5026), (21, 4972), (24, 4903),

Gene: Peebs_256 Start: 127803, Stop: 127462, Start Num: 8

Candidate Starts for Peebs_256:

(Start: 5 @127908 has 3 MA's), (6, 127848), (Start: 8 @127803 has 2 MA's), (Start: 12 @127767 has 57 MA's), (14, 127695), (16, 127665), (17, 127620), (21, 127566), (24, 127497),

Gene: Peebs_9 Start: 5828, Stop: 5487, Start Num: 8

Candidate Starts for Peebs_9:

(Start: 5 @5933 has 3 MA's), (6, 5873), (Start: 8 @5828 has 2 MA's), (Start: 12 @5792 has 57 MA's), (14, 5720), (16, 5690), (17, 5645), (21, 5591), (24, 5522),

Gene: Pepperwood_259 Start: 127732, Stop: 127427, Start Num: 12

Candidate Starts for Pepperwood_259:

(Start: 5 @127873 has 3 MA's), (6, 127813), (Start: 8 @127768 has 2 MA's), (Start: 12 @127732 has 57 MA's), (14, 127660), (16, 127630), (17, 127585), (21, 127531), (24, 127462),

Gene: Pepperwood_10 Start: 5947, Stop: 5642, Start Num: 12

Candidate Starts for Pepperwood_10:

(Start: 5 @6088 has 3 MA's), (6, 6028), (Start: 8 @5983 has 2 MA's), (Start: 12 @5947 has 57 MA's), (14, 5875), (16, 5845), (17, 5800), (21, 5746), (24, 5677),

Gene: Riptide_10 Start: 6251, Stop: 5916, Start Num: 9

Candidate Starts for Riptide_10:

(7, 6269), (Start: 8 @6257 has 2 MA's), (Start: 9 @6251 has 4 MA's), (10, 6245), (Start: 12 @6221 has 57 MA's), (14, 6149), (15, 6131), (16, 6119), (17, 6074), (19, 6026), (21, 6020),

Gene: Riptide_265 Start: 127703, Stop: 127368, Start Num: 9

Candidate Starts for Riptide_265:

(7, 127721), (Start: 8 @127709 has 2 MA's), (Start: 9 @127703 has 4 MA's), (10, 127697), (Start: 12 @127673 has 57 MA's), (14, 127601), (15, 127583), (16, 127571), (17, 127526), (19, 127478), (21, 127472),

Gene: Samisti12_260 Start: 128977, Stop: 128531, Start Num: 5

Candidate Starts for Samisti12_260:

(Start: 5 @128977 has 3 MA's), (6, 128917), (Start: 8 @128872 has 2 MA's), (Start: 12 @128836 has 57 MA's), (14, 128764), (16, 128734), (17, 128689), (21, 128635), (24, 128566),

Gene: Samisti12_9 Start: 5933, Stop: 5487, Start Num: 5

Candidate Starts for Samisti12_9:

(Start: 5 @5933 has 3 MA's), (6, 5873), (Start: 8 @5828 has 2 MA's), (Start: 12 @5792 has 57 MA's), (14, 5720), (16, 5690), (17, 5645), (21, 5591), (24, 5522),

Gene: Scheme_10 Start: 5947, Stop: 5642, Start Num: 12

Candidate Starts for Scheme_10:

(Start: 5 @6088 has 3 MA's), (6, 6028), (Start: 8 @5983 has 2 MA's), (Start: 12 @5947 has 57 MA's), (14, 5875), (16, 5845), (17, 5800), (21, 5746), (24, 5677),

Gene: Scheme_263 Start: 129142, Stop: 128837, Start Num: 12

Candidate Starts for Scheme_263:

(Start: 5 @129283 has 3 MA's), (6, 129223), (Start: 8 @129178 has 2 MA's), (Start: 12 @129142 has 57 MA's), (14, 129070), (16, 129040), (17, 128995), (21, 128941), (24, 128872),

Gene: Shuckle_10 Start: 6235, Stop: 5930, Start Num: 12

Candidate Starts for Shuckle_10:

(3, 6397), (6, 6316), (Start: 8 @6271 has 2 MA's), (Start: 12 @6235 has 57 MA's), (14, 6163), (16, 6133), (17, 6088), (19, 6040), (21, 6034),

Gene: Shuckle_258 Start: 128868, Stop: 128563, Start Num: 12

Candidate Starts for Shuckle_258:

(3, 129030), (6, 128949), (Start: 8 @128904 has 2 MA's), (Start: 12 @128868 has 57 MA's), (14, 128796), (16, 128766), (17, 128721), (19, 128673), (21, 128667),

Gene: Sushi23_10 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for Sushi23_10:

(Start: 5 @5934 has 3 MA's), (6, 5874), (Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: Sushi23_260 Start: 128777, Stop: 128331, Start Num: 5

Candidate Starts for Sushi23_260:

(Start: 5 @128777 has 3 MA's), (6, 128717), (Start: 8 @128672 has 2 MA's), (Start: 12 @128636 has 57 MA's), (14, 128564), (16, 128534), (17, 128489), (21, 128435), (24, 128366),

Gene: Targaryen_260 Start: 129804, Stop: 129499, Start Num: 12

Candidate Starts for Targaryen_260:

(Start: 12 @129804 has 57 MA's), (14, 129732), (16, 129702), (17, 129657), (18, 129630), (19, 129609), (21, 129603), (24, 129534),

Gene: Targaryen_9 Start: 6128, Stop: 5823, Start Num: 12

Candidate Starts for Targaryen_9:

(Start: 12 @6128 has 57 MA's), (14, 6056), (16, 6026), (17, 5981), (18, 5954), (19, 5933), (21, 5927), (24, 5858),

Gene: Deutsch_9 Start: 5794, Stop: 5489, Start Num: 12

Candidate Starts for Deutsch_9:

(Start: 5 @5935 has 3 MA's), (6, 5875), (Start: 8 @5830 has 2 MA's), (Start: 12 @5794 has 57 MA's), (14, 5722), (16, 5692), (17, 5647), (21, 5593), (24, 5524),

Gene: Deutsch_256 Start: 128003, Stop: 127698, Start Num: 12

Candidate Starts for Deutsch_256:

(Start: 5 @128144 has 3 MA's), (6, 128084), (Start: 8 @128039 has 2 MA's), (Start: 12 @128003 has 57 MA's), (14, 127931), (16, 127901), (17, 127856), (21, 127802), (24, 127733),

Gene: Tribute_9 Start: 5793, Stop: 5488, Start Num: 12

Candidate Starts for Tribute_9:

(Start: 8 @5829 has 2 MA's), (Start: 12 @5793 has 57 MA's), (14, 5721), (16, 5691), (17, 5646), (21, 5592), (24, 5523),

Gene: Tribute_255 Start: 128337, Stop: 128032, Start Num: 12

Candidate Starts for Tribute_255:

(Start: 8 @128373 has 2 MA's), (Start: 12 @128337 has 57 MA's), (14, 128265), (16, 128235), (17, 128190), (21, 128136), (24, 128067),

Gene: Warpy_11 Start: 5853, Stop: 5548, Start Num: 12

Candidate Starts for Warpy_11:

(Start: 12 @5853 has 57 MA's), (14, 5781), (16, 5751), (17, 5706), (18, 5679), (19, 5658), (21, 5652), (24, 5583),

Gene: Warpy_263 Start: 127391, Stop: 127086, Start Num: 12

Candidate Starts for Warpy_263:

(Start: 12 @127391 has 57 MA's), (14, 127319), (16, 127289), (17, 127244), (18, 127217), (19, 127196), (21, 127190), (24, 127121),

Gene: WashU_10 Start: 5947, Stop: 5642, Start Num: 12

Candidate Starts for WashU_10:

(Start: 5 @6088 has 3 MA's), (6, 6028), (Start: 8 @5983 has 2 MA's), (Start: 12 @5947 has 57 MA's), (14, 5875), (16, 5845), (17, 5800), (21, 5746), (24, 5677),

Gene: WashU_254 Start: 127941, Stop: 127636, Start Num: 12

Candidate Starts for WashU_254:

(Start: 5 @128082 has 3 MA's), (6, 128022), (Start: 8 @127977 has 2 MA's), (Start: 12 @127941 has 57 MA's), (14, 127869), (16, 127839), (17, 127794), (21, 127740), (24, 127671),

Gene: Watermoore_9 Start: 5794, Stop: 5489, Start Num: 12

Candidate Starts for Watermoore_9:

(Start: 5 @5935 has 3 MA's), (6, 5875), (Start: 8 @5830 has 2 MA's), (Start: 12 @5794 has 57 MA's), (14, 5722), (16, 5692), (17, 5647), (21, 5593), (24, 5524),

Gene: Watermoore_256 Start: 128390, Stop: 128085, Start Num: 12

Candidate Starts for Watermoore_256:

(Start: 5 @128531 has 3 MA's), (6, 128471), (Start: 8 @128426 has 2 MA's), (Start: 12 @128390 has 57 MA's), (14, 128318), (16, 128288), (17, 128243), (21, 128189), (24, 128120),