



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 301708 Report

This analysis was run 06/08/26 on database version 649.

Pham number 301708 has 24 members, 15 are drafts.

Phages represented in each track:

- Track 1 : EmoNemo\_33, Hanem\_34, Kabocha\_35, Twin\_33, Toneprano\_33, Schomber\_33
- Track 2 : Lenoshki\_34, Beted\_34
- Track 3 : Farrylious\_32
- Track 4 : Pakusa\_33, Amoonguss\_33, Gray\_34, Argena\_33
- Track 5 : MintFritos\_33, Alok\_33, Mikronejon\_33, Chidiebere\_34
- Track 6 : FruityLoops\_32
- Track 7 : Oogie\_34
- Track 8 : ChisanaKitsune\_30
- Track 9 : FlyingTortilla\_33
- Track 10 : ScarletRaider\_33
- Track 11 : GMA6\_19
- Track 12 : Cantare\_13

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

The start number called the most often in the published annotations is 3, it was called in 4 of the 9 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ChisanaKitsune\_30, EmoNemo\_33, Hanem\_34, Kabocha\_35, Oogie\_34, Schomber\_33, Toneprano\_33, Twin\_33,

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

- Alok\_33, Amoonguss\_33, Argena\_33, Beted\_34, Chidiebere\_34, Gray\_34, Lenoshki\_34, Mikronejon\_33, MintFritos\_33, Pakusa\_33,

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

- Cantare\_13, Farrylious\_32, FlyingTortilla\_33, FruityLoops\_32, GMA6\_19, ScarletRaider\_33,

### **Summary by start number:**

Start 1:

- Found in 4 of 24 ( 16.7% ) of genes in pham
- Manual Annotations of this start: 1 of 9
- Called 50.0% of time when present
- Phage (with cluster) where this start called: FlyingTortilla\_33 (DQ), FruityLoops\_32 (DQ),

#### Start 2:

- Found in 18 of 24 ( 75.0% ) of genes in pham
- Manual Annotations of this start: 1 of 9
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Amoonguss\_33 (DQ), Argena\_33 (DQ), Beted\_34 (DQ), Gray\_34 (DQ), Lenoshki\_34 (DQ), Pakusa\_33 (DQ),

#### Start 3:

- Found in 18 of 24 ( 75.0% ) of genes in pham
- Manual Annotations of this start: 4 of 9
- Called 44.4% of time when present
- Phage (with cluster) where this start called: ChisanaKitsune\_30 (DQ), EmoNemo\_33 (DQ), Hanem\_34 (DQ), Kabocha\_35 (DQ), Oogie\_34 (DQ), Schomber\_33 (DQ), Toneprano\_33 (DQ), Twin\_33 (DQ),

#### Start 5:

- Found in 20 of 24 ( 83.3% ) of genes in pham
- Manual Annotations of this start: 3 of 9
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Aloki\_33 (DQ), Cantare\_13 (singleton), Chidiebere\_34 (DQ), Farrylous\_32 (DQ), GMA6\_19 (DQ), Mikronejon\_33 (DQ), MintFritos\_33 (DQ), ScarletRaider\_33 (DQ),

### **Summary by clusters:**

There are 2 clusters represented in this pham: singleton, DQ,

Info for manual annotations of cluster DQ:

- Start number 1 was manually annotated 1 time for cluster DQ.
- Start number 2 was manually annotated 1 time for cluster DQ.
- Start number 3 was manually annotated 4 times for cluster DQ.
- Start number 5 was manually annotated 2 times for cluster DQ.

### **Gene Information:**

Gene: Aloki\_33 Start: 23793, Stop: 25151, Start Num: 5

Candidate Starts for Aloki\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Amoonguss\_33 Start: 23787, Stop: 25154, Start Num: 2

Candidate Starts for Amoonguss\_33:

(Start: 2 @23787 has 1 MA's), (Start: 3 @23790 has 4 MA's), (Start: 5 @23796 has 3 MA's), (6, 23835), (7, 23856), (9, 23898), (10, 23961), (11, 24000), (16, 24099), (17, 24111), (18, 24147), (20, 24234), (22, 24291), (23, 24309), (24, 24315), (31, 24414), (41, 24699), (42, 24708), (45, 24765), (47, 24786), (49, 24819), (50, 24843), (53, 24927), (54, 24960), (57, 25107), (58, 25113), (59, 25140), (60, 25146),

Gene: Argena\_33 Start: 23784, Stop: 25151, Start Num: 2

Candidate Starts for Argena\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Beted\_34 Start: 25461, Stop: 26831, Start Num: 2

Candidate Starts for Beted\_34:

(Start: 2 @25461 has 1 MA's), (Start: 3 @25464 has 4 MA's), (4, 25470), (6, 25512), (7, 25533), (9, 25575), (10, 25638), (11, 25677), (16, 25776), (17, 25788), (18, 25824), (20, 25911), (22, 25968), (23, 25986), (24, 25992), (31, 26091), (41, 26376), (42, 26385), (45, 26442), (47, 26463), (49, 26496), (50, 26520), (53, 26604), (54, 26637), (57, 26784), (58, 26790), (59, 26817), (60, 26823),

Gene: Cantare\_13 Start: 12173, Stop: 13426, Start Num: 5

Candidate Starts for Cantare\_13:

(Start: 5 @12173 has 3 MA's), (8, 12251), (12, 12395), (13, 12398), (15, 12473), (16, 12479), (18, 12527), (21, 12626), (22, 12668), (25, 12716), (26, 12722), (27, 12731), (29, 12770), (30, 12779), (32, 12884), (33, 12893), (34, 12941), (39, 13019), (40, 13022), (46, 13121), (48, 13157),

Gene: Chidiebere\_34 Start: 23793, Stop: 25151, Start Num: 5

Candidate Starts for Chidiebere\_34:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: ChisanaKitsune\_30 Start: 22439, Stop: 23944, Start Num: 3

Candidate Starts for ChisanaKitsune\_30:

(Start: 2 @22436 has 1 MA's), (Start: 3 @22439 has 4 MA's), (4, 22445), (6, 22487), (7, 22508), (9, 22550), (10, 22613), (11, 22652), (16, 22751), (17, 22763), (18, 22799), (20, 22886), (22, 22943), (23, 22961), (24, 22967), (28, 23051), (31, 23066), (41, 23348), (42, 23357), (44, 23375), (45, 23417), (49, 23471), (50, 23495), (53, 23579), (54, 23612), (55, 23675), (56, 23720), (61, 23858), (63, 23897), (64, 23936),

Gene: EmoNemo\_33 Start: 23787, Stop: 25151, Start Num: 3

Candidate Starts for EmoNemo\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Farrylious\_32 Start: 23568, Stop: 24926, Start Num: 5

Candidate Starts for Farrylious\_32:

(Start: 1 @23538 has 1 MA's), (Start: 5 @23568 has 3 MA's), (6, 23607), (7, 23628), (9, 23670), (10, 23733), (11, 23772), (16, 23871), (17, 23883), (18, 23919), (20, 24006), (22, 24063), (23, 24081), (24, 24087), (31, 24186), (41, 24471), (42, 24480), (45, 24537), (47, 24558), (49, 24591), (50, 24615), (53, 24699), (54, 24732), (57, 24879), (58, 24885), (59, 24912), (60, 24918),

Gene: FlyingTortilla\_33 Start: 26668, Stop: 28026, Start Num: 1

Candidate Starts for FlyingTortilla\_33:

(Start: 1 @26668 has 1 MA's), (Start: 5 @26698 has 3 MA's), (6, 26737), (7, 26758), (10, 26863), (11, 26902), (16, 27001), (17, 27013), (18, 27049), (20, 27136), (22, 27193), (23, 27211), (24, 27217), (26, 27247), (28, 27301), (31, 27316), (36, 27550), (37, 27553), (38, 27565), (43, 27616), (45, 27670), (49, 27724), (50, 27748), (54, 27865), (57, 27979), (59, 28012), (60, 28018),

Gene: FruityLoops\_32 Start: 26671, Stop: 28029, Start Num: 1

Candidate Starts for FruityLoops\_32:

(Start: 1 @26671 has 1 MA's), (Start: 5 @26701 has 3 MA's), (6, 26740), (7, 26761), (10, 26866), (11, 26905), (16, 27004), (17, 27016), (18, 27052), (20, 27139), (22, 27196), (23, 27214), (24, 27220), (26, 27250), (28, 27304), (31, 27319), (36, 27553), (38, 27568), (43, 27619), (45, 27673), (49, 27727), (50, 27751), (54, 27868), (57, 27982), (59, 28015), (60, 28021),

Gene: GMA6\_19 Start: 15585, Stop: 17039, Start Num: 5

Candidate Starts for GMA6\_19:

(Start: 5 @15585 has 3 MA's), (6, 15624), (7, 15645), (9, 15687), (10, 15750), (14, 15879), (15, 15882), (16, 15888), (18, 15936), (19, 15981), (22, 16077), (24, 16101), (35, 16368), (36, 16395), (38, 16410), (45, 16515), (46, 16530), (50, 16593), (51, 16626), (52, 16632), (53, 16677), (56, 16812), (62, 16986),

Gene: Gray\_34 Start: 23784, Stop: 25151, Start Num: 2

Candidate Starts for Gray\_34:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Hanem\_34 Start: 23787, Stop: 25151, Start Num: 3

Candidate Starts for Hanem\_34:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Kabocha\_35 Start: 24600, Stop: 25964, Start Num: 3

Candidate Starts for Kabocha\_35:

(Start: 2 @24597 has 1 MA's), (Start: 3 @24600 has 4 MA's), (Start: 5 @24606 has 3 MA's), (6, 24645), (7, 24666), (9, 24708), (10, 24771), (11, 24810), (16, 24909), (17, 24921), (18, 24957), (20, 25044), (22, 25101), (23, 25119), (24, 25125), (31, 25224), (41, 25509), (42, 25518), (45, 25575), (47, 25596), (49, 25629), (50, 25653), (53, 25737), (54, 25770), (57, 25917), (58, 25923), (59, 25950), (60, 25956),

Gene: Lenoshki\_34 Start: 25461, Stop: 26831, Start Num: 2

Candidate Starts for Lenoshki\_34:

(Start: 2 @25461 has 1 MA's), (Start: 3 @25464 has 4 MA's), (4, 25470), (6, 25512), (7, 25533), (9, 25575), (10, 25638), (11, 25677), (16, 25776), (17, 25788), (18, 25824), (20, 25911), (22, 25968), (23,

25986), (24, 25992), (31, 26091), (41, 26376), (42, 26385), (45, 26442), (47, 26463), (49, 26496), (50, 26520), (53, 26604), (54, 26637), (57, 26784), (58, 26790), (59, 26817), (60, 26823),

Gene: Mikronejon\_33 Start: 23793, Stop: 25151, Start Num: 5

Candidate Starts for Mikronejon\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: MintFritos\_33 Start: 23793, Stop: 25151, Start Num: 5

Candidate Starts for MintFritos\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Oogie\_34 Start: 25490, Stop: 26857, Start Num: 3

Candidate Starts for Oogie\_34:

(Start: 2 @25487 has 1 MA's), (Start: 3 @25490 has 4 MA's), (4, 25496), (6, 25538), (7, 25559), (9, 25601), (10, 25664), (11, 25703), (16, 25802), (17, 25814), (18, 25850), (20, 25937), (22, 25994), (23, 26012), (24, 26018), (31, 26117), (41, 26402), (42, 26411), (45, 26468), (47, 26489), (49, 26522), (50, 26546), (53, 26630), (54, 26663), (57, 26810), (58, 26816), (59, 26843), (60, 26849),

Gene: Pakusa\_33 Start: 23526, Stop: 24893, Start Num: 2

Candidate Starts for Pakusa\_33:

(Start: 2 @23526 has 1 MA's), (Start: 3 @23529 has 4 MA's), (Start: 5 @23535 has 3 MA's), (6, 23574), (7, 23595), (9, 23637), (10, 23700), (11, 23739), (16, 23838), (17, 23850), (18, 23886), (20, 23973), (22, 24030), (23, 24048), (24, 24054), (31, 24153), (41, 24438), (42, 24447), (45, 24504), (47, 24525), (49, 24558), (50, 24582), (53, 24666), (54, 24699), (57, 24846), (58, 24852), (59, 24879), (60, 24885),

Gene: ScarletRaider\_33 Start: 26725, Stop: 28053, Start Num: 5

Candidate Starts for ScarletRaider\_33:

(Start: 1 @26695 has 1 MA's), (Start: 5 @26725 has 3 MA's), (6, 26764), (7, 26785), (10, 26890), (11, 26929), (16, 27028), (17, 27040), (18, 27076), (20, 27163), (22, 27220), (23, 27238), (24, 27244), (26, 27274), (28, 27328), (31, 27343), (36, 27577), (37, 27580), (38, 27592), (43, 27643), (45, 27697), (49, 27751), (50, 27775), (54, 27892), (57, 28006), (59, 28039), (60, 28045),

Gene: Schomber\_33 Start: 23537, Stop: 24901, Start Num: 3

Candidate Starts for Schomber\_33:

(Start: 2 @23534 has 1 MA's), (Start: 3 @23537 has 4 MA's), (Start: 5 @23543 has 3 MA's), (6, 23582), (7, 23603), (9, 23645), (10, 23708), (11, 23747), (16, 23846), (17, 23858), (18, 23894), (20, 23981), (22, 24038), (23, 24056), (24, 24062), (31, 24161), (41, 24446), (42, 24455), (45, 24512), (47, 24533), (49, 24566), (50, 24590), (53, 24674), (54, 24707), (57, 24854), (58, 24860), (59, 24887), (60, 24893),

Gene: Toneprano\_33 Start: 23787, Stop: 25151, Start Num: 3

Candidate Starts for Toneprano\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20,

24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),

Gene: Twin\_33 Start: 23787, Stop: 25151, Start Num: 3

Candidate Starts for Twin\_33:

(Start: 2 @23784 has 1 MA's), (Start: 3 @23787 has 4 MA's), (Start: 5 @23793 has 3 MA's), (6, 23832), (7, 23853), (9, 23895), (10, 23958), (11, 23997), (16, 24096), (17, 24108), (18, 24144), (20, 24231), (22, 24288), (23, 24306), (24, 24312), (31, 24411), (41, 24696), (42, 24705), (45, 24762), (47, 24783), (49, 24816), (50, 24840), (53, 24924), (54, 24957), (57, 25104), (58, 25110), (59, 25137), (60, 25143),