





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 304802 Report

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

Pham number 304802 has 133 members, 25 are drafts.

Phages represented in each track:

- Track 1 : Gustav\_26
- Track 2 : Mahdia\_26
- Track 3 : Applejacks\_26
- Track 4 : Puppies\_26, Widow\_26
- Track 5 : Morrissey\_27
- Track 6 : Trine\_25
- Track 7 : Horseradish\_27, Yummy\_27
- Track 8 : Nibbles\_28
- Track 9 : Emalyn\_25
- Track 10 : Carsonalex\_27, RedBaron\_28
- Track 11 : MScarn\_28
- Track 12 : Tolls\_28, AndPeggy\_25, CanesSauce\_26, Yarn\_25, BillDoor\_28, SteamedHams\_28, CaramelLatte\_26, ChocoMunchkin\_26
- Track 13 : Orla\_30
- Track 14 : Elinal\_29, KayGee\_28
- Track 15 : Fribs8\_27
- Track 16 : Burnsey\_26, RSchmailzl\_27, RADical\_27, Typhonmarchy\_26, Axym\_26, Sopespian\_26, GoldHunter\_27, Cozz\_26, Socotra\_27, PsychoKiller\_26, Starburst\_27, Bubble\_26, Elliott\_26, Quasar\_26
- Track 17 : Feastonyeet\_26, MAnor\_28, CocoaPuff\_26, SheckWes\_27, Tarnish\_28, Mayweather\_29, PotPie\_27, Lauer\_27, Balloona\_26, Bavilard\_27, BigChungus\_26
- Track 18 : Blondies\_27, Biskit\_27, Troje\_26, SketchMex\_25
- Track 19 : McDazzle\_26, Pons\_28, ElJefes\_26
- Track 20 : Hexbug\_30
- Track 21 : Margaret\_31
- Track 22 : Dre3\_26, Gibbous\_26
- Track 23 : Azira\_28, Zareef\_28, Wallaby\_30, Wolfwood\_28
- Track 24 : MaVan\_28
- Track 25 : ChickenTender\_29
- Track 26 : Jamzy\_30
- Track 27 : Amok\_25, AikoCarson\_25
- Track 28 : Buttrmilkdreams\_26
- Track 29 : Yucky\_27, Vine\_28
- Track 30 : GiKK\_30
- Track 31 : Nodigi\_30
- Track 32 : Survivors\_28
- Track 33 : Button\_28

- Track 34 : SweatNTears\_28
- Track 35 : Nina\_27, Agatha\_26
- Track 36 : Yakult\_29
- Track 37 : MunkgeeRoachy\_26
- Track 38 : Malvina\_28, HippoPololi\_28
- Track 39 : RanchParmCat\_30
- Track 40 : Cleo\_26
- Track 41 : SummitAcademy\_27
- Track 42 : CherryonLim\_29
- Track 43 : Sahara\_26, Haley23\_27, GemG\_27, Whiteclaw\_27, Clap\_27, TuertoX\_27
- Track 44 : Gizermo\_27, Jalleen\_27, Savage\_27, Cynthia\_27, Ebert\_27, Sproutie\_27, Yinzer\_27, Mocha12\_27
- Track 45 : LordFarquaad\_27
- Track 46 : Yeet412\_27, Attis\_27, Bjanes7\_27, SoilAssassin\_27
- Track 47 : Volt\_59, Fryberger\_57, Ziko\_60
- Track 48 : Guey18\_62
- Track 49 : Keelan\_55
- Track 50 : Sixama\_103
- Track 51 : Mareelih\_103, Forza\_105, BlueNGold\_104
- Track 52 : Boopy\_105
- Track 53 : Octobien14\_32
- Track 54 : Sephiroth\_31, Syleon\_31
- Track 55 : Kudrefre\_30
- Track 56 : Rabbitrun\_33
- Track 57 : Neville\_31, Trax\_31
- Track 58 : LilJank\_31
- Track 59 : ModicumRichard\_24, ObLaDi\_24, Aleemily\_23, Cafasso\_24
- Track 60 : Morgana\_23
- Track 61 : Finkle\_24
- Track 62 : REQ3\_31

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

The start number called the most often in the published annotations is 30, it was called in 50 of the 108 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Agatha\_26, AikoCarson\_25, Aleemily\_23, Amok\_25, AndPeggy\_25, Axym\_26, Azira\_28, BillDoor\_28, Biskit\_27, Blondies\_27, Bubble\_26, Burnsey\_26, Button\_28, Buttrmilkdreams\_26, Cafasso\_24, CanesSauce\_26, CaramellLatte\_26, Carsonalex\_27, ChickenTender\_29, ChocoMunchkin\_26, Cleo\_26, Cozz\_26, Dre3\_26, Elliott\_26, Emalyn\_25, GiKK\_30, Gibbous\_26, GoldHunter\_27, Hexbug\_30, HippoPololi\_28, Horseradish\_27, Jamzy\_30, MScarn\_28, MaVan\_28, Malvina\_28, Margaret\_31, ModicumRichard\_24, Morgana\_23, MunkgeeRoachy\_26, Nina\_27, Nodigi\_30, ObLaDi\_24, Orla\_30, PsychoKiller\_26, Quasar\_26, RADical\_27, RSchmailzl\_27, RanchParmCat\_30, RedBaron\_28, SketchMex\_25, Socotra\_27, Sopespian\_26, Starburst\_27, SteamedHams\_28, Survivors\_28, SweatNTears\_28, Tolls\_28, Troje\_26, Typhonomachy\_26, Wallaby\_30, Wolfwood\_28, Yakult\_29, Yarn\_25, Yummy\_27, Zareef\_28,

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

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

- Applejacks\_26, Attis\_27, Balloona\_26, Bavidard\_27, BigChungus\_26, Bjaner7\_27, BlueNGold\_104, Boopy\_105, CherryonLim\_29, Clap\_27, CocoaPuff\_26, Cynthia\_27, Ebert\_27, ElJefes\_26, Elinal\_29, Feastonyeet\_26, Finkle\_24, Forza\_105, Fribs8\_27, Fryberger\_57, GemG\_27, Gizermo\_27, Guey18\_62, Gustav\_26, Haley23\_27, Jalleen\_27, KayGee\_28, Keelan\_55, Kudrefre\_30, Lauer\_27, LilJank\_31, LordFarquaad\_27, MAnor\_28, Mahdia\_26, Mareelih\_103, Mayweather\_29, McDazzle\_26, Mocha12\_27, Morrissey\_27, Neville\_31, Nibbles\_28, Octobien14\_32, Pons\_28, PotPie\_27, Puppies\_26, REQ3\_31, Rabbitrun\_33, Sahara\_26, Savage\_27, Sephiroth\_31, SheckWes\_27, Sixama\_103, SoilAssassin\_27, Sproutie\_27, SummitAcademy\_27, Syleon\_31, Tarnish\_28, Trax\_31, Trine\_25, TuertoX\_27, Vine\_28, Volt\_59, Whiteclaw\_27, Widow\_26, Yeet412\_27, Yinzer\_27, Yucky\_27, Ziko\_60,

### Summary by start number:

Start 19:

- Found in 1 of 133 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CherryonLim\_29 (CT),

Start 21:

- Found in 5 of 133 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 5 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold\_104 (DS), Boopy\_105 (DS), Forza\_105 (DS), Mareelih\_103 (DS), Sixama\_103 (DS),

Start 23:

- Found in 2 of 133 ( 1.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Applejacks\_26 (CD),

Start 24:

- Found in 1 of 133 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mahdia\_26 (CD),

Start 25:

- Found in 27 of 133 ( 20.3% ) of genes in pham
- Manual Annotations of this start: 18 of 108
- Called 74.1% of time when present
- Phage (with cluster) where this start called: Attis\_27 (CZ2), Bjaner7\_27 (CZ2), Cynthia\_27 (CZ2), Ebert\_27 (CZ2), Fryberger\_57 (DP), Gizermo\_27 (CZ2), Guey18\_62 (DP), Gustav\_26 (CD), Jalleen\_27 (CZ2), Keelan\_55 (DP), Mocha12\_27 (CZ2), Morrissey\_27 (CD), Savage\_27 (CZ2), SoilAssassin\_27 (CZ2), Sproutie\_27

(CZ2), Trine\_25 (CD), Volt\_59 (DP), Yeet412\_27 (CZ2), Yinzer\_27 (CZ2), Ziko\_60 (DP),

Start 26:

- Found in 2 of 133 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Puppies\_26 (CD), Widow\_26 (CD),

Start 27:

- Found in 28 of 133 ( 21.1% ) of genes in pham
- Manual Annotations of this start: 15 of 108
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Clap\_27 (CZ2), Finkle\_24 (singleton), GemG\_27 (CZ2), Haley23\_27 (CZ2), Kudrefre\_30 (DU1), LilJank\_31 (DU2), LordFarquaad\_27 (CZ2), Neville\_31 (DU2), Octobien14\_32 (DU1), Rabbitrun\_33 (DU2), Sahara\_26 (CZ2), Sephiroth\_31 (DU1), Syleon\_31 (DU1), Trax\_31 (DU2), TuertoX\_27 (CZ2), Whiteclaw\_27 (CZ2),

Start 28:

- Found in 20 of 133 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 14 of 108
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Balloona\_26 (CT), Bavidard\_27 (CT), BigChungus\_26 (CT), CocoaPuff\_26 (CT), ElJefes\_26 (CT), Elinal\_29 (CT), Feastonyeet\_26 (CT), KayGee\_28 (CT), Lauer\_27 (CT), MAnor\_28 (CT), Mayweather\_29 (CT), McDazzle\_26 (CT), Pons\_28 (CT), PotPie\_27 (CT), SheckWes\_27 (CT), SummitAcademy\_27 (CT), Tarnish\_28 (CT), Vine\_28 (CT), Yucky\_27 (CT),

Start 29:

- Found in 2 of 133 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fribs8\_27 (CT), Nibbles\_28 (CT),

Start 30:

- Found in 65 of 133 ( 48.9% ) of genes in pham
- Manual Annotations of this start: 50 of 108
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agatha\_26 (CT), AikoCarson\_25 (CT), Aleemily\_23 (DZ), Amok\_25 (CT), AndPeggy\_25 (CT), Axym\_26 (CT), Azira\_28 (CT), BillDoor\_28 (CT), Biskit\_27 (CT), Blondies\_27 (CT), Bubble\_26 (CT), Burnsey\_26 (CT), Button\_28 (CT), Buttrmilkdreams\_26 (CT), Cafasso\_24 (DZ), CanesSauce\_26 (CT), CaramelLatte\_26 (CT), Carsonalex\_27 (CT), ChickenTender\_29 (CT), ChocoMunchkin\_26 (CT), Cleo\_26 (CT), Cozz\_26 (CT), Dre3\_26 (CT), Elliott\_26 (CT), Emalyn\_25 (CT), GiKK\_30 (CT), Gibbous\_26 (CT), GoldHunter\_27 (CT), Hexbug\_30 (CT), HippoPololi\_28 (CT), Horseradish\_27 (CT), Jamzy\_30 (CT), MScarn\_28 (CT), MaVan\_28 (CT), Malvina\_28 (CT), Margaret\_31 (CT), ModicumRichard\_24 (DZ), Morgana\_23 (DZ), MunkgeeRoachy\_26 (CT), Nina\_27 (CT), Nodigi\_30 (CT), ObLaDi\_24 (DZ), Orla\_30 (CT), PsychoKiller\_26 (CT), Quasar\_26 (CT), RADical\_27 (CT), RSchmailzl\_27 (CT), RanchParmCat\_30 (CT), RedBaron\_28 (CT), SketchMex\_25 (CT), Socotra\_27 (CT), Sopespian\_26 (CT),

Starburst\_27 (CT), SteamedHams\_28 (CT), Survivors\_28 (CT), SweatNTears\_28 (CT), Tolls\_28 (CT), Troje\_26 (CT), Typhonomachy\_26 (CT), Wallaby\_30 (CT), Wolfwood\_28 (CT), Yakult\_29 (CT), Yarn\_25 (CT), Yummy\_27 (CT), Zareef\_28 (CT),

Start 36:

- Found in 1 of 133 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ3\_31 (singleton),

### **Summary by clusters:**

There are 9 clusters represented in this pham: singleton, CZ2, CD, DZ, DU1, DU2, DS, DP, CT,

Info for manual annotations of cluster CD:

- Start number 24 was manually annotated 1 time for cluster CD.
- Start number 25 was manually annotated 3 times for cluster CD.
- Start number 26 was manually annotated 2 times for cluster CD.

Info for manual annotations of cluster CT:

- Start number 19 was manually annotated 1 time for cluster CT.
- Start number 28 was manually annotated 14 times for cluster CT.
- Start number 29 was manually annotated 2 times for cluster CT.
- Start number 30 was manually annotated 45 times for cluster CT.

Info for manual annotations of cluster CZ2:

- Start number 25 was manually annotated 10 times for cluster CZ2.
- Start number 27 was manually annotated 7 times for cluster CZ2.

Info for manual annotations of cluster DP:

- Start number 25 was manually annotated 5 times for cluster DP.

Info for manual annotations of cluster DS:

- Start number 21 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster DU1:

- Start number 27 was manually annotated 4 times for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 27 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster DZ:

- Start number 30 was manually annotated 5 times for cluster DZ.

### **Gene Information:**

Gene: Agatha\_26 Start: 21623, Stop: 21961, Start Num: 30

Candidate Starts for Agatha\_26:

(Start: 30 @21623 has 50 MA's), (43, 21707), (59, 21782), (68, 21830), (71, 21842), (74, 21866), (82, 21902), (88, 21944),

Gene: AikoCarson\_25 Start: 20901, Stop: 21239, Start Num: 30

Candidate Starts for AikoCarson\_25:

(Start: 30 @20901 has 50 MA's), (40, 20970), (42, 20982), (43, 20985), (49, 21015), (68, 21108), (71, 21120), (82, 21180),

Gene: Aleemily\_23 Start: 21080, Stop: 21418, Start Num: 30

Candidate Starts for Aleemily\_23:

(Start: 30 @21080 has 50 MA's), (70, 21296),

Gene: Amok\_25 Start: 20859, Stop: 21197, Start Num: 30

Candidate Starts for Amok\_25:

(Start: 30 @20859 has 50 MA's), (40, 20928), (42, 20940), (43, 20943), (49, 20973), (68, 21066), (71, 21078), (82, 21138),

Gene: AndPeggy\_25 Start: 21304, Stop: 21645, Start Num: 30

Candidate Starts for AndPeggy\_25:

(Start: 30 @21304 has 50 MA's), (40, 21373), (42, 21385), (43, 21388), (68, 21514), (82, 21586),

Gene: Applejacks\_26 Start: 20444, Stop: 20785, Start Num: 23

Candidate Starts for Applejacks\_26:

(23, 20444), (38, 20519), (41, 20534), (63, 20621), (68, 20651), (88, 20771),

Gene: Attis\_27 Start: 22281, Stop: 22592, Start Num: 25

Candidate Starts for Attis\_27:

(Start: 25 @22281 has 18 MA's), (Start: 27 @22284 has 15 MA's), (37, 22347), (48, 22398), (68, 22467), (88, 22572),

Gene: Axym\_26 Start: 21623, Stop: 21964, Start Num: 30

Candidate Starts for Axym\_26:

(Start: 30 @21623 has 50 MA's), (43, 21707), (53, 21758), (68, 21833), (71, 21845), (74, 21869), (82, 21905), (88, 21947),

Gene: Azira\_28 Start: 22601, Stop: 22942, Start Num: 30

Candidate Starts for Azira\_28:

(Start: 30 @22601 has 50 MA's), (37, 22658), (40, 22670), (53, 22736), (58, 22757), (67, 22799), (68, 22811), (74, 22847), (82, 22883),

Gene: Balloona\_26 Start: 21507, Stop: 21830, Start Num: 28

Candidate Starts for Balloona\_26:

(Start: 28 @21507 has 14 MA's), (37, 21567), (42, 21591), (62, 21669), (83, 21771),

Gene: Bavilard\_27 Start: 22292, Stop: 22615, Start Num: 28

Candidate Starts for Bavilard\_27:

(Start: 28 @22292 has 14 MA's), (37, 22352), (42, 22376), (62, 22454), (83, 22556),

Gene: BigChungus\_26 Start: 21550, Stop: 21873, Start Num: 28

Candidate Starts for BigChungus\_26:

(Start: 28 @21550 has 14 MA's), (37, 21610), (42, 21634), (62, 21712), (83, 21814),

Gene: BillDoor\_28 Start: 21251, Stop: 21592, Start Num: 30

Candidate Starts for BillDoor\_28:

(Start: 30 @21251 has 50 MA's), (40, 21320), (42, 21332), (43, 21335), (68, 21461), (82, 21533),

Gene: Biskit\_27 Start: 21276, Stop: 21617, Start Num: 30  
Candidate Starts for Biskit\_27:  
(Start: 30 @21276 has 50 MA's), (40, 21345), (42, 21357), (68, 21486), (76, 21531), (82, 21558),

Gene: Bjaner7\_27 Start: 22281, Stop: 22592, Start Num: 25  
Candidate Starts for Bjaner7\_27:  
(Start: 25 @22281 has 18 MA's), (Start: 27 @22284 has 15 MA's), (37, 22347), (48, 22398), (68, 22467), (88, 22572),

Gene: Blondies\_27 Start: 21259, Stop: 21600, Start Num: 30  
Candidate Starts for Blondies\_27:  
(Start: 30 @21259 has 50 MA's), (40, 21328), (42, 21340), (68, 21469), (76, 21514), (82, 21541),

Gene: BlueNGold\_104 Start: 64169, Stop: 64501, Start Num: 21  
Candidate Starts for BlueNGold\_104:  
(Start: 21 @64169 has 5 MA's), (33, 64211), (45, 64280), (79, 64433),

Gene: Boopy\_105 Start: 64181, Stop: 64513, Start Num: 21  
Candidate Starts for Boopy\_105:  
(Start: 21 @64181 has 5 MA's), (33, 64223), (45, 64292), (67, 64382), (79, 64445),

Gene: Bubble\_26 Start: 21623, Stop: 21964, Start Num: 30  
Candidate Starts for Bubble\_26:  
(Start: 30 @21623 has 50 MA's), (43, 21707), (53, 21758), (68, 21833), (71, 21845), (74, 21869), (82, 21905), (88, 21947),

Gene: Burnsey\_26 Start: 21624, Stop: 21965, Start Num: 30  
Candidate Starts for Burnsey\_26:  
(Start: 30 @21624 has 50 MA's), (43, 21708), (53, 21759), (68, 21834), (71, 21846), (74, 21870), (82, 21906), (88, 21948),

Gene: Button\_28 Start: 21047, Stop: 21373, Start Num: 30  
Candidate Starts for Button\_28:  
(Start: 30 @21047 has 50 MA's), (42, 21128), (47, 21155), (48, 21158), (53, 21179), (62, 21200), (84, 21329),

Gene: Buttrmlkdreams\_26 Start: 21258, Stop: 21599, Start Num: 30  
Candidate Starts for Buttrmlkdreams\_26:  
(Start: 30 @21258 has 50 MA's), (42, 21339), (68, 21468), (76, 21513), (82, 21540),

Gene: Cafasso\_24 Start: 21653, Stop: 21991, Start Num: 30  
Candidate Starts for Cafasso\_24:  
(Start: 30 @21653 has 50 MA's), (70, 21869),

Gene: CanesSauce\_26 Start: 21305, Stop: 21646, Start Num: 30  
Candidate Starts for CanesSauce\_26:  
(Start: 30 @21305 has 50 MA's), (40, 21374), (42, 21386), (43, 21389), (68, 21515), (82, 21587),

Gene: CaramellLatte\_26 Start: 21305, Stop: 21646, Start Num: 30  
Candidate Starts for CaramellLatte\_26:  
(Start: 30 @21305 has 50 MA's), (40, 21374), (42, 21386), (43, 21389), (68, 21515), (82, 21587),

Gene: Carsonalex\_27 Start: 21681, Stop: 22022, Start Num: 30  
Candidate Starts for Carsonalex\_27:  
(Start: 30 @21681 has 50 MA's), (43, 21765), (53, 21816), (68, 21891), (74, 21927), (82, 21963), (88, 22005),

Gene: CherryonLim\_29 Start: 23257, Stop: 23610, Start Num: 19  
Candidate Starts for CherryonLim\_29:  
(Start: 19 @23257 has 1 MA's), (Start: 28 @23287 has 14 MA's), (37, 23347), (42, 23371), (62, 23449), (71, 23488), (83, 23551),

Gene: ChickenTender\_29 Start: 21897, Stop: 22238, Start Num: 30  
Candidate Starts for ChickenTender\_29:  
(23, 21885), (Start: 30 @21897 has 50 MA's), (43, 21981), (53, 22032), (68, 22107), (71, 22119), (74, 22143), (82, 22179), (88, 22221),

Gene: ChocoMunchkin\_26 Start: 21305, Stop: 21646, Start Num: 30  
Candidate Starts for ChocoMunchkin\_26:  
(Start: 30 @21305 has 50 MA's), (40, 21374), (42, 21386), (43, 21389), (68, 21515), (82, 21587),

Gene: Clap\_27 Start: 22291, Stop: 22599, Start Num: 27  
Candidate Starts for Clap\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Cleo\_26 Start: 21948, Stop: 22289, Start Num: 30  
Candidate Starts for Cleo\_26:  
(Start: 30 @21948 has 50 MA's), (37, 22005), (40, 22017), (42, 22029), (53, 22083), (58, 22104), (68, 22158), (82, 22230), (83, 22233),

Gene: CocoaPuff\_26 Start: 21504, Stop: 21827, Start Num: 28  
Candidate Starts for CocoaPuff\_26:  
(Start: 28 @21504 has 14 MA's), (37, 21564), (42, 21588), (62, 21666), (83, 21768),

Gene: Cozz\_26 Start: 21624, Stop: 21965, Start Num: 30  
Candidate Starts for Cozz\_26:  
(Start: 30 @21624 has 50 MA's), (43, 21708), (53, 21759), (68, 21834), (71, 21846), (74, 21870), (82, 21906), (88, 21948),

Gene: Cynthia\_27 Start: 22288, Stop: 22599, Start Num: 25  
Candidate Starts for Cynthia\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Dre3\_26 Start: 21874, Stop: 22215, Start Num: 30  
Candidate Starts for Dre3\_26:  
(Start: 30 @21874 has 50 MA's), (37, 21931), (40, 21943), (42, 21955), (53, 22009), (58, 22030), (60, 22036), (68, 22084), (82, 22156), (83, 22159),

Gene: Ebert\_27 Start: 22288, Stop: 22599, Start Num: 25  
Candidate Starts for Ebert\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: ElJefes\_26 Start: 21983, Stop: 22306, Start Num: 28  
Candidate Starts for ElJefes\_26:  
(Start: 28 @21983 has 14 MA's), (37, 22043), (62, 22145), (83, 22247),

Gene: Elinal\_29 Start: 22527, Stop: 22847, Start Num: 28  
Candidate Starts for Elinal\_29:  
(Start: 28 @22527 has 14 MA's), (38, 22590), (42, 22611), (61, 22686), (62, 22689), (71, 22728), (83, 22791),

Gene: Eliott\_26 Start: 21623, Stop: 21964, Start Num: 30  
Candidate Starts for Eliott\_26:  
(Start: 30 @21623 has 50 MA's), (43, 21707), (53, 21758), (68, 21833), (71, 21845), (74, 21869), (82, 21905), (88, 21947),

Gene: Emalyn\_25 Start: 20900, Stop: 21238, Start Num: 30  
Candidate Starts for Emalyn\_25:  
(Start: 30 @20900 has 50 MA's), (40, 20969), (42, 20981), (43, 20984), (49, 21014), (68, 21107), (71, 21119), (74, 21143), (82, 21179),

Gene: Feastonyeet\_26 Start: 21550, Stop: 21873, Start Num: 28  
Candidate Starts for Feastonyeet\_26:  
(Start: 28 @21550 has 14 MA's), (37, 21610), (42, 21634), (62, 21712), (83, 21814),

Gene: Finkle\_24 Start: 21315, Stop: 21617, Start Num: 27  
Candidate Starts for Finkle\_24:  
(Start: 27 @21315 has 15 MA's), (33, 21351), (37, 21378), (42, 21402), (46, 21423), (65, 21471), (68, 21495), (88, 21600),

Gene: Forza\_105 Start: 64097, Stop: 64429, Start Num: 21  
Candidate Starts for Forza\_105:  
(Start: 21 @64097 has 5 MA's), (33, 64139), (45, 64208), (79, 64361),

Gene: Fribs8\_27 Start: 22452, Stop: 22793, Start Num: 29  
Candidate Starts for Fribs8\_27:  
(11, 22332), (Start: 29 @22452 has 2 MA's), (37, 22509), (40, 22521), (53, 22587), (58, 22608), (68, 22662), (71, 22674), (74, 22698), (82, 22734), (83, 22737),

Gene: Fryberger\_57 Start: 31459, Stop: 31815, Start Num: 25  
Candidate Starts for Fryberger\_57:  
(Start: 25 @31459 has 18 MA's), (35, 31504), (45, 31567), (50, 31585), (54, 31609), (73, 31696), (85, 31780),

Gene: GemG\_27 Start: 22291, Stop: 22599, Start Num: 27  
Candidate Starts for GemG\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: GiKK\_30 Start: 21346, Stop: 21672, Start Num: 30  
Candidate Starts for GiKK\_30:  
(Start: 30 @21346 has 50 MA's), (42, 21427), (47, 21454), (53, 21478), (84, 21628), (88, 21655),

Gene: Gibbous\_26 Start: 21874, Stop: 22215, Start Num: 30  
Candidate Starts for Gibbous\_26:

(Start: 30 @21874 has 50 MA's), (37, 21931), (40, 21943), (42, 21955), (53, 22009), (58, 22030), (60, 22036), (68, 22084), (82, 22156), (83, 22159),

Gene: Gizermo\_27 Start: 22288, Stop: 22599, Start Num: 25

Candidate Starts for Gizermo\_27:

(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: GoldHunter\_27 Start: 21624, Stop: 21965, Start Num: 30

Candidate Starts for GoldHunter\_27:

(Start: 30 @21624 has 50 MA's), (43, 21708), (53, 21759), (68, 21834), (71, 21846), (74, 21870), (82, 21906), (88, 21948),

Gene: Guey18\_62 Start: 32651, Stop: 33007, Start Num: 25

Candidate Starts for Guey18\_62:

(Start: 25 @32651 has 18 MA's), (45, 32759), (50, 32777), (54, 32801), (72, 32879), (73, 32888),

Gene: Gustav\_26 Start: 21213, Stop: 21548, Start Num: 25

Candidate Starts for Gustav\_26:

(Start: 25 @21213 has 18 MA's), (63, 21387), (64, 21390), (88, 21534),

Gene: Haley23\_27 Start: 22291, Stop: 22599, Start Num: 27

Candidate Starts for Haley23\_27:

(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Hexbug\_30 Start: 21835, Stop: 22149, Start Num: 30

Candidate Starts for Hexbug\_30:

(1, 21622), (2, 21658), (5, 21670), (6, 21673), (16, 21760), (Start: 30 @21835 has 50 MA's), (37, 21892), (48, 21946), (53, 21970), (76, 22060),

Gene: HippoPololi\_28 Start: 22523, Stop: 22864, Start Num: 30

Candidate Starts for HippoPololi\_28:

(Start: 30 @22523 has 50 MA's), (37, 22580), (40, 22592), (42, 22604), (68, 22733), (74, 22769), (82, 22805), (83, 22808),

Gene: Horseradish\_27 Start: 21097, Stop: 21438, Start Num: 30

Candidate Starts for Horseradish\_27:

(Start: 30 @21097 has 50 MA's), (40, 21166), (42, 21178), (43, 21181), (58, 21253), (68, 21307), (71, 21319), (76, 21352), (82, 21379),

Gene: Jalleen\_27 Start: 21927, Stop: 22238, Start Num: 25

Candidate Starts for Jalleen\_27:

(Start: 25 @21927 has 18 MA's), (Start: 27 @21930 has 15 MA's), (37, 21993), (68, 22113), (88, 22218),

Gene: Jamzy\_30 Start: 21360, Stop: 21686, Start Num: 30

Candidate Starts for Jamzy\_30:

(Start: 30 @21360 has 50 MA's), (42, 21441), (47, 21468), (53, 21492), (62, 21513), (84, 21642),

Gene: KayGee\_28 Start: 22527, Stop: 22847, Start Num: 28

Candidate Starts for KayGee\_28:

(Start: 28 @22527 has 14 MA's), (38, 22590), (42, 22611), (61, 22686), (62, 22689), (71, 22728), (83, 22791),

Gene: Keelan\_55 Start: 31456, Stop: 31812, Start Num: 25

Candidate Starts for Keelan\_55:

(Start: 25 @31456 has 18 MA's), (35, 31501), (45, 31564), (50, 31582), (54, 31606), (73, 31693), (85, 31777),

Gene: Kudrefre\_30 Start: 25686, Stop: 25994, Start Num: 27

Candidate Starts for Kudrefre\_30:

(Start: 27 @25686 has 15 MA's), (37, 25749), (39, 25758), (42, 25773), (46, 25794), (48, 25800), (68, 25869), (80, 25923),

Gene: Lauer\_27 Start: 22580, Stop: 22903, Start Num: 28

Candidate Starts for Lauer\_27:

(Start: 28 @22580 has 14 MA's), (37, 22640), (42, 22664), (62, 22742), (83, 22844),

Gene: LilJank\_31 Start: 27468, Stop: 27773, Start Num: 27

Candidate Starts for LilJank\_31:

(20, 27456), (Start: 27 @27468 has 15 MA's), (37, 27531), (42, 27555), (46, 27576), (50, 27588), (68, 27651),

Gene: LordFarquaad\_27 Start: 22284, Stop: 22592, Start Num: 27

Candidate Starts for LordFarquaad\_27:

(Start: 25 @22281 has 18 MA's), (Start: 27 @22284 has 15 MA's), (37, 22347), (48, 22398), (68, 22467), (88, 22572),

Gene: MAnor\_28 Start: 22547, Stop: 22870, Start Num: 28

Candidate Starts for MAnor\_28:

(Start: 28 @22547 has 14 MA's), (37, 22607), (42, 22631), (62, 22709), (83, 22811),

Gene: MScarn\_28 Start: 21261, Stop: 21602, Start Num: 30

Candidate Starts for MScarn\_28:

(Start: 30 @21261 has 50 MA's), (42, 21342), (43, 21345), (68, 21471), (71, 21483), (82, 21543),

Gene: MaVan\_28 Start: 22634, Stop: 22975, Start Num: 30

Candidate Starts for MaVan\_28:

(Start: 30 @22634 has 50 MA's), (37, 22691), (40, 22703), (53, 22769), (58, 22790), (68, 22844), (74, 22880), (82, 22916),

Gene: Mahdia\_26 Start: 20538, Stop: 20870, Start Num: 24

Candidate Starts for Mahdia\_26:

(Start: 24 @20538 has 1 MA's), (34, 20583), (57, 20703), (63, 20712), (64, 20715), (68, 20742),

Gene: Malvina\_28 Start: 22526, Stop: 22867, Start Num: 30

Candidate Starts for Malvina\_28:

(Start: 30 @22526 has 50 MA's), (37, 22583), (40, 22595), (42, 22607), (68, 22736), (74, 22772), (82, 22808), (83, 22811),

Gene: Mareelih\_103 Start: 63599, Stop: 63931, Start Num: 21

Candidate Starts for Mareelih\_103:

(Start: 21 @63599 has 5 MA's), (33, 63641), (45, 63710), (79, 63863),

Gene: Margaret\_31 Start: 21555, Stop: 21884, Start Num: 30  
Candidate Starts for Margaret\_31:  
(1, 21342), (2, 21378), (5, 21390), (6, 21393), (16, 21480), (17, 21492), (Start: 30 @21555 has 50 MA's), (37, 21612), (42, 21636), (47, 21663), (52, 21681), (84, 21840),

Gene: Mayweather\_29 Start: 23163, Stop: 23486, Start Num: 28  
Candidate Starts for Mayweather\_29:  
(Start: 28 @23163 has 14 MA's), (37, 23223), (42, 23247), (62, 23325), (83, 23427),

Gene: McDazzle\_26 Start: 21977, Stop: 22300, Start Num: 28  
Candidate Starts for McDazzle\_26:  
(Start: 28 @21977 has 14 MA's), (37, 22037), (62, 22139), (83, 22241),

Gene: Mocha12\_27 Start: 22288, Stop: 22599, Start Num: 25  
Candidate Starts for Mocha12\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: ModicumRichard\_24 Start: 21653, Stop: 21991, Start Num: 30  
Candidate Starts for ModicumRichard\_24:  
(Start: 30 @21653 has 50 MA's), (70, 21869),

Gene: Morgana\_23 Start: 21084, Stop: 21422, Start Num: 30  
Candidate Starts for Morgana\_23:  
(Start: 30 @21084 has 50 MA's), (71, 21303),

Gene: Morrissey\_27 Start: 22085, Stop: 22423, Start Num: 25  
Candidate Starts for Morrissey\_27:  
(8, 21956), (Start: 25 @22085 has 18 MA's), (68, 22289), (80, 22355), (88, 22406),

Gene: MunkgeeRoachy\_26 Start: 21704, Stop: 22042, Start Num: 30  
Candidate Starts for MunkgeeRoachy\_26:  
(Start: 30 @21704 has 50 MA's), (40, 21773), (43, 21788), (59, 21863), (68, 21911), (71, 21923), (74, 21947), (82, 21983), (88, 22025),

Gene: Neville\_31 Start: 27108, Stop: 27413, Start Num: 27  
Candidate Starts for Neville\_31:  
(20, 27096), (Start: 27 @27108 has 15 MA's), (33, 27144), (37, 27171), (42, 27195), (46, 27216), (50, 27228), (68, 27291),

Gene: Nibbles\_28 Start: 22633, Stop: 22974, Start Num: 29  
Candidate Starts for Nibbles\_28:  
(11, 22513), (Start: 29 @22633 has 2 MA's), (37, 22690), (40, 22702), (53, 22768), (58, 22789), (68, 22843), (74, 22879), (82, 22915),

Gene: Nina\_27 Start: 22666, Stop: 23004, Start Num: 30  
Candidate Starts for Nina\_27:  
(Start: 30 @22666 has 50 MA's), (43, 22750), (59, 22825), (68, 22873), (71, 22885), (74, 22909), (82, 22945), (88, 22987),

Gene: Nodigi\_30 Start: 21804, Stop: 22118, Start Num: 30  
Candidate Starts for Nodigi\_30:  
(16, 21729), (Start: 30 @21804 has 50 MA's), (37, 21861), (48, 21915), (53, 21939), (76, 22029),

Gene: ObLaDi\_24 Start: 21632, Stop: 21970, Start Num: 30

Candidate Starts for ObLaDi\_24:

(Start: 30 @21632 has 50 MA's), (70, 21848),

Gene: Octobien14\_32 Start: 26679, Stop: 26987, Start Num: 27

Candidate Starts for Octobien14\_32:

(Start: 27 @26679 has 15 MA's), (31, 26703), (42, 26766), (46, 26787), (68, 26862),

Gene: Orla\_30 Start: 21808, Stop: 22122, Start Num: 30

Candidate Starts for Orla\_30:

(16, 21733), (Start: 30 @21808 has 50 MA's), (37, 21865), (48, 21919), (53, 21943), (66, 21967), (76, 22033),

Gene: Pons\_28 Start: 22536, Stop: 22859, Start Num: 28

Candidate Starts for Pons\_28:

(Start: 28 @22536 has 14 MA's), (37, 22596), (62, 22698), (83, 22800),

Gene: PotPie\_27 Start: 22369, Stop: 22692, Start Num: 28

Candidate Starts for PotPie\_27:

(Start: 28 @22369 has 14 MA's), (37, 22429), (42, 22453), (62, 22531), (83, 22633),

Gene: PsychoKiller\_26 Start: 21623, Stop: 21964, Start Num: 30

Candidate Starts for PsychoKiller\_26:

(Start: 30 @21623 has 50 MA's), (43, 21707), (53, 21758), (68, 21833), (71, 21845), (74, 21869), (82, 21905), (88, 21947),

Gene: Puppies\_26 Start: 20940, Stop: 21272, Start Num: 26

Candidate Starts for Puppies\_26:

(22, 20934), (Start: 26 @20940 has 2 MA's), (41, 21024), (56, 21099), (64, 21114), (68, 21141), (76, 21183), (86, 21240), (88, 21255),

Gene: Quasar\_26 Start: 22232, Stop: 22573, Start Num: 30

Candidate Starts for Quasar\_26:

(Start: 30 @22232 has 50 MA's), (43, 22316), (53, 22367), (68, 22442), (71, 22454), (74, 22478), (82, 22514), (88, 22556),

Gene: RADical\_27 Start: 21624, Stop: 21965, Start Num: 30

Candidate Starts for RADical\_27:

(Start: 30 @21624 has 50 MA's), (43, 21708), (53, 21759), (68, 21834), (71, 21846), (74, 21870), (82, 21906), (88, 21948),

Gene: REQ3\_31 Start: 14457, Stop: 14756, Start Num: 36

Candidate Starts for REQ3\_31:

(36, 14457), (67, 14607), (69, 14622), (77, 14673), (78, 14676), (81, 14691), (83, 14697), (87, 14736), (88, 14739),

Gene: RSchmailzl\_27 Start: 21767, Stop: 22108, Start Num: 30

Candidate Starts for RSchmailzl\_27:

(Start: 30 @21767 has 50 MA's), (43, 21851), (53, 21902), (68, 21977), (71, 21989), (74, 22013), (82, 22049), (88, 22091),

Gene: Rabbitrun\_33 Start: 27422, Stop: 27727, Start Num: 27

Candidate Starts for Rabbitrun\_33:

(9, 27293), (10, 27308), (12, 27323), (13, 27326), (14, 27329), (15, 27341), (Start: 27 @27422 has 15 MA's), (31, 27446), (33, 27458), (35, 27464), (37, 27485), (42, 27509), (62, 27572), (68, 27605),

Gene: RanchParmCat\_30 Start: 21691, Stop: 22017, Start Num: 30

Candidate Starts for RanchParmCat\_30:

(18, 21658), (Start: 30 @21691 has 50 MA's), (37, 21748), (42, 21772), (47, 21799), (53, 21823), (84, 21973), (88, 22000),

Gene: RedBaron\_28 Start: 21667, Stop: 22008, Start Num: 30

Candidate Starts for RedBaron\_28:

(Start: 30 @21667 has 50 MA's), (43, 21751), (53, 21802), (68, 21877), (74, 21913), (82, 21949), (88, 21991),

Gene: Sahara\_26 Start: 21963, Stop: 22271, Start Num: 27

Candidate Starts for Sahara\_26:

(Start: 25 @21960 has 18 MA's), (Start: 27 @21963 has 15 MA's), (37, 22026), (68, 22146), (88, 22251),

Gene: Savage\_27 Start: 22288, Stop: 22599, Start Num: 25

Candidate Starts for Savage\_27:

(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Sephiroth\_31 Start: 25857, Stop: 26165, Start Num: 27

Candidate Starts for Sephiroth\_31:

(Start: 27 @25857 has 15 MA's), (37, 25920), (39, 25929), (42, 25944), (46, 25965), (48, 25971), (68, 26040),

Gene: SheckWes\_27 Start: 21513, Stop: 21836, Start Num: 28

Candidate Starts for SheckWes\_27:

(Start: 28 @21513 has 14 MA's), (37, 21573), (42, 21597), (62, 21675), (83, 21777),

Gene: Sixama\_103 Start: 63600, Stop: 63935, Start Num: 21

Candidate Starts for Sixama\_103:

(Start: 21 @63600 has 5 MA's), (33, 63645), (45, 63714), (51, 63735), (55, 63756), (79, 63867),

Gene: SketchMex\_25 Start: 21276, Stop: 21617, Start Num: 30

Candidate Starts for SketchMex\_25:

(Start: 30 @21276 has 50 MA's), (40, 21345), (42, 21357), (68, 21486), (76, 21531), (82, 21558),

Gene: Socotra\_27 Start: 21623, Stop: 21964, Start Num: 30

Candidate Starts for Socotra\_27:

(Start: 30 @21623 has 50 MA's), (43, 21707), (53, 21758), (68, 21833), (71, 21845), (74, 21869), (82, 21905), (88, 21947),

Gene: SoilAssassin\_27 Start: 22281, Stop: 22592, Start Num: 25

Candidate Starts for SoilAssassin\_27:

(Start: 25 @22281 has 18 MA's), (Start: 27 @22284 has 15 MA's), (37, 22347), (48, 22398), (68, 22467), (88, 22572),

Gene: Sopespian\_26 Start: 21624, Stop: 21965, Start Num: 30

Candidate Starts for Sopespian\_26:

(Start: 30 @21624 has 50 MA's), (43, 21708), (53, 21759), (68, 21834), (71, 21846), (74, 21870), (82, 21906), (88, 21948),

Gene: Sproutie\_27 Start: 22288, Stop: 22599, Start Num: 25

Candidate Starts for Sproutie\_27:

(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Starburst\_27 Start: 21624, Stop: 21965, Start Num: 30

Candidate Starts for Starburst\_27:

(Start: 30 @21624 has 50 MA's), (43, 21708), (53, 21759), (68, 21834), (71, 21846), (74, 21870), (82, 21906), (88, 21948),

Gene: SteamedHams\_28 Start: 21281, Stop: 21622, Start Num: 30

Candidate Starts for SteamedHams\_28:

(Start: 30 @21281 has 50 MA's), (40, 21350), (42, 21362), (43, 21365), (68, 21491), (82, 21563),

Gene: SummitAcademy\_27 Start: 21589, Stop: 21912, Start Num: 28

Candidate Starts for SummitAcademy\_27:

(Start: 28 @21589 has 14 MA's), (37, 21649), (42, 21673), (62, 21751), (71, 21790), (83, 21853),

Gene: Survivors\_28 Start: 22450, Stop: 22791, Start Num: 30

Candidate Starts for Survivors\_28:

(Start: 30 @22450 has 50 MA's), (37, 22507), (40, 22519), (53, 22585), (58, 22606), (67, 22648), (68, 22660), (74, 22696), (75, 22702), (82, 22732),

Gene: SweatNTears\_28 Start: 21544, Stop: 21885, Start Num: 30

Candidate Starts for SweatNTears\_28:

(3, 21370), (4, 21373), (7, 21400), (Start: 30 @21544 has 50 MA's), (37, 21601), (42, 21625), (68, 21754), (76, 21799), (82, 21826),

Gene: Syleon\_31 Start: 25779, Stop: 26087, Start Num: 27

Candidate Starts for Syleon\_31:

(Start: 27 @25779 has 15 MA's), (37, 25842), (39, 25851), (42, 25866), (46, 25887), (48, 25893), (68, 25962),

Gene: Tarnish\_28 Start: 22904, Stop: 23227, Start Num: 28

Candidate Starts for Tarnish\_28:

(Start: 28 @22904 has 14 MA's), (37, 22964), (42, 22988), (62, 23066), (83, 23168),

Gene: Tolls\_28 Start: 21275, Stop: 21616, Start Num: 30

Candidate Starts for Tolls\_28:

(Start: 30 @21275 has 50 MA's), (40, 21344), (42, 21356), (43, 21359), (68, 21485), (82, 21557),

Gene: Trax\_31 Start: 27414, Stop: 27719, Start Num: 27

Candidate Starts for Trax\_31:

(20, 27402), (Start: 27 @27414 has 15 MA's), (33, 27450), (37, 27477), (42, 27501), (46, 27522), (50, 27534), (68, 27597),

Gene: Trine\_25 Start: 20596, Stop: 20931, Start Num: 25

Candidate Starts for Trine\_25:

(Start: 25 @20596 has 18 MA's), (32, 20638), (33, 20641), (44, 20707), (68, 20803), (80, 20866), (82, 20872), (88, 20917),

Gene: Troje\_26 Start: 21258, Stop: 21599, Start Num: 30  
Candidate Starts for Troje\_26:  
(Start: 30 @21258 has 50 MA's), (40, 21327), (42, 21339), (68, 21468), (76, 21513), (82, 21540),

Gene: TuertoX\_27 Start: 22291, Stop: 22599, Start Num: 27  
Candidate Starts for TuertoX\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Typhonomachy\_26 Start: 21656, Stop: 21997, Start Num: 30  
Candidate Starts for Typhonomachy\_26:  
(Start: 30 @21656 has 50 MA's), (43, 21740), (53, 21791), (68, 21866), (71, 21878), (74, 21902), (82, 21938), (88, 21980),

Gene: Vine\_28 Start: 22510, Stop: 22830, Start Num: 28  
Candidate Starts for Vine\_28:  
(Start: 28 @22510 has 14 MA's), (38, 22573), (42, 22594), (61, 22669), (62, 22672), (71, 22711),

Gene: Volt\_59 Start: 32404, Stop: 32760, Start Num: 25  
Candidate Starts for Volt\_59:  
(Start: 25 @32404 has 18 MA's), (35, 32449), (45, 32512), (50, 32530), (54, 32554), (73, 32641), (85, 32725),

Gene: Wallaby\_30 Start: 22594, Stop: 22935, Start Num: 30  
Candidate Starts for Wallaby\_30:  
(Start: 30 @22594 has 50 MA's), (37, 22651), (40, 22663), (53, 22729), (58, 22750), (67, 22792), (68, 22804), (74, 22840), (82, 22876),

Gene: Whiteclaw\_27 Start: 22291, Stop: 22599, Start Num: 27  
Candidate Starts for Whiteclaw\_27:  
(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Widow\_26 Start: 20931, Stop: 21263, Start Num: 26  
Candidate Starts for Widow\_26:  
(22, 20925), (Start: 26 @20931 has 2 MA's), (41, 21015), (56, 21090), (64, 21105), (68, 21132), (76, 21174), (86, 21231), (88, 21246),

Gene: Wolfwood\_28 Start: 22594, Stop: 22935, Start Num: 30  
Candidate Starts for Wolfwood\_28:  
(Start: 30 @22594 has 50 MA's), (37, 22651), (40, 22663), (53, 22729), (58, 22750), (67, 22792), (68, 22804), (74, 22840), (82, 22876),

Gene: Yakult\_29 Start: 21409, Stop: 21735, Start Num: 30  
Candidate Starts for Yakult\_29:  
(1, 21196), (2, 21232), (5, 21244), (6, 21247), (16, 21334), (17, 21346), (Start: 30 @21409 has 50 MA's), (37, 21466), (42, 21490), (47, 21517), (53, 21541), (84, 21691), (88, 21718),

Gene: Yarn\_25 Start: 21298, Stop: 21639, Start Num: 30  
Candidate Starts for Yarn\_25:  
(Start: 30 @21298 has 50 MA's), (40, 21367), (42, 21379), (43, 21382), (68, 21508), (82, 21580),

Gene: Yeet412\_27 Start: 22281, Stop: 22592, Start Num: 25

Candidate Starts for Yeet412\_27:

(Start: 25 @22281 has 18 MA's), (Start: 27 @22284 has 15 MA's), (37, 22347), (48, 22398), (68, 22467), (88, 22572),

Gene: Yinzer\_27 Start: 22288, Stop: 22599, Start Num: 25

Candidate Starts for Yinzer\_27:

(Start: 25 @22288 has 18 MA's), (Start: 27 @22291 has 15 MA's), (37, 22354), (68, 22474), (88, 22579),

Gene: Yucky\_27 Start: 22369, Stop: 22689, Start Num: 28

Candidate Starts for Yucky\_27:

(Start: 28 @22369 has 14 MA's), (38, 22432), (42, 22453), (61, 22528), (62, 22531), (71, 22570),

Gene: Yummy\_27 Start: 21211, Stop: 21552, Start Num: 30

Candidate Starts for Yummy\_27:

(Start: 30 @21211 has 50 MA's), (40, 21280), (42, 21292), (43, 21295), (58, 21367), (68, 21421), (71, 21433), (76, 21466), (82, 21493),

Gene: Zareef\_28 Start: 22602, Stop: 22943, Start Num: 30

Candidate Starts for Zareef\_28:

(Start: 30 @22602 has 50 MA's), (37, 22659), (40, 22671), (53, 22737), (58, 22758), (67, 22800), (68, 22812), (74, 22848), (82, 22884),

Gene: Ziko\_60 Start: 32344, Stop: 32700, Start Num: 25

Candidate Starts for Ziko\_60:

(Start: 25 @32344 has 18 MA's), (35, 32389), (45, 32452), (50, 32470), (54, 32494), (73, 32581), (85, 32665),