





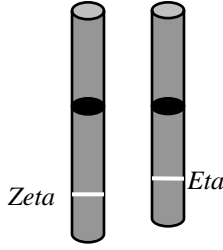

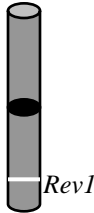
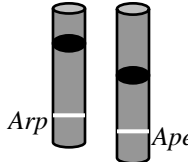


| Project (mutant(s)) | Experiment | Gene | Protein |
|--|------------|--|--|
| <u>Eta Zeta</u> 1. Hilary | |  Chromosome: I | <i>Eta</i> = Translesion polymerase; copies damaged DNA helping cell division and tissue growth (in humans, <i>Eta</i> mutants have genetic disease Xeroderma pigmentosum) |
| | |  Chromosome: V | <i>Zeta</i> = Also translesion polymerase; (in Mice, <i>Zeta</i> mutants die <i>in utero</i>) |
| <u>Eta Atr</u> 3. Tanner | |  Chromosome: V | <i>Eta</i> (see above) <i>Atr</i> = Protein kinase; signal transduction; senses single-strand DNA at blocked replication forks or DNA gaps and signals to stop cell division (cell-cycle arrest). (in humans, <i>Atr</i> mutants have the genetic disease, Seckel syndrome) |
| <u>Sog1-1</u> 4. Avery | | ? | <i>Sog1</i> = Transcription factor; turns on genes that cause cell-cycle arrest or cell death; Plant ortholog of animal p53 protein. (in humans, <i>p53</i> mutants have the genetic disease, Li-Fraumeni syndrome) |
| <u>Rev1</u> 5. BJTZ | |  Chromosome: V | <i>Rev1</i> = Also translesion polymerase |
| <u>Ape Arp</u> 6. Hayden | |  Chromosome: II | <i>Ape</i> = Endonuclease; cuts DNA backbone during repair of damaged DNA |
| | |  Chromosome: III | <i>Arp</i> = Also DNA repair endonuclease. |
| <u>Myo XI (K)</u> | | ? | <i>Myo XI (K)</i> = myosin motor protein; moves organelles along actin filaments; helps tissue growth and root hair elongation. |
| <u>Wild-type only</u> | | | |

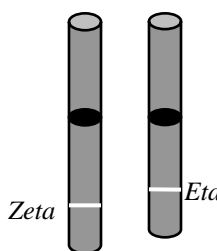
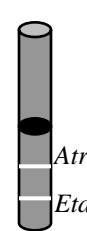
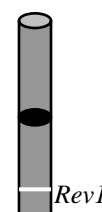
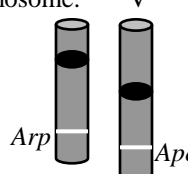
Period 6: Field Biology (12:05 - 12:50)

Note: The Arabidopsis genome consists of 5 chromosomes

| <u>Project (mutant(s))</u> | <u>Experiment</u> | <u>Gene</u> | <u>Protein</u> |
|---|--|---|---|
| <u>Eta Zeta</u> | |  <p>Chromosome: I V</p> | <p><i>Eta</i> = Translesion polymerase; copies damaged DNA helping cell division and tissue growth (in humans, <i>Eta</i> mutants have genetic disease Xeroderma pigmentosum)</p> <p><i>Zeta</i> = Also translesion polymerase; (in Mice, <i>Zeta</i> mutants die <i>in utero</i>)</p> |
| <u>Eta Atr</u> 1. Samantha . . . 2. Lightning Bolt 3. Drew | Passing electrical current through the plant Scorched earth |  <p>Chromosome: V</p> | <p><i>Eta</i> (see above)</p> <p><i>Atr</i> = Protein kinase; signal transduction; senses single-strand DNA at blocked replication forks or DNA gaps and signals to stop cell division (cell-cycle arrest). (in humans, <i>Atr</i> mutants have the genetic disease, Seckel syndrome)</p> |
| <u>Sog1-1</u> 4. Joe 5. Skill-a-way | | ? | <p><i>Sog1</i> = Transcription factor; turns on genes that cause cell-cycle arrest or cell death; Plant ortholog of animal p53 protein. (in humans, <i>p53</i> mutants have the genetic disease, Li-Fraumeni syndrome)</p> |
| <u>Rev1</u> | |  <p>Chromosome: V</p> | <p><i>Rev1</i> = Also translesion polymerase</p> |
| <u>Ape Arp</u> 6. Gold | |  <p>Chromosome: II III</p> | <p><i>Ape</i> = Endonuclease; cuts DNA backbone during repair of damaged DNA</p> <p><i>Arp</i> = Also DNA repair endonuclease.</p> |
| <u>Myo XI (K)</u> | | ? | <p><i>Myo XI (K)</i> = myosin motor protein; moves organelles along actin filaments; helps tissue growth and root hair elongation.</p> |
| <u>Wild-type only</u> | | | |

Period 8: Field Biology (2:20 - 3:05)

Note: The Arabidopsis genome consists of 5 chromosomes

| <u>Project (mutant(s))</u> | <u>Experiment</u> | <u>Gene</u> | <u>Protein</u> |
|--|-------------------|---|--|
| <u>Eta Zeta</u> 1. Julio 2. Courtney | |  <p>Chromosome: I V</p> | <i>Eta</i> = Translesion polymerase; copies damaged DNA helping cell division and tissue growth (in humans, <i>Eta</i> mutants have genetic disease Xeroderma pigmentosum) <i>Zeta</i> = Also translesion polymerase; (in Mice, <i>Zeta</i> mutants die <i>in utero</i>) |
| <u>Eta Atr</u> 3. Guy | |  <p>Chromosome: V</p> | <i>Eta</i> (see above) <i>Atr</i> = Protein kinase; signal transduction; senses single-strand DNA at blocked replication forks or DNA gaps and signals to stop cell division (cell-cycle arrest). (in humans, <i>Atr</i> mutants have the genetic disease, Seckel syndrome) |
| <u>Sog1-1</u> 4. Amber 5. Emily | | ? | <i>Sog1</i> = Transcription factor; turns on genes that cause cell-cycle arrest or cell death; Plant ortholog of animal p53 protein. (in humans, <i>p53</i> mutants have the genetic disease, Li-Fraumeni syndrome) |
| <u>Rev1</u> 6. Ronney | |  <p>Chromosome: V</p> | <i>Rev1</i> = Also translesion polymerase |
| <u>Ape Arp</u> 7. Renea | |  <p>Chromosome: II III</p> | <i>Ape</i> = Endonuclease; cuts DNA backbone during repair of damaged DNA <i>Arp</i> = Also DNA repair endonuclease. |
| <u>Myo XI (K)</u> | | ? | <i>Myo XI (K)</i> = myosin motor protein; moves organelles along actin filaments; helps tissue growth and root hair elongation. |
| <u>Wild-type only</u> | | | |