Cover page for

Module 6: Alternative Splicing

# Submission Details

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# Lesson Overview

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| Lesson abstract: | Many genes have exons that can be linked together in more than one way to produce a variety of different (though related) transcripts. In this lesson, students will examine how alternative splicing of a gene can lead to different mRNAs and how alternative splicing can lead to the production of different polypeptides and result in drastic changes in phenotype. |
| Lesson keywords: | Alternative Splicing  Exon  Intron  Messenger RNA |
| Organism(s) that are the focus of this lesson: | None |
| Type(s) of student learning assessments: | Short answer formative questions |
| Websites and online databases used: | GEP UCSC Genome Browser (<http://gander.wustl.edu>) |
| Resources in addition to the lesson instructions | YouTube videos |

# Learning Topics

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| Topics in scientific fields: | Genetics  Genomics  Molecular Biology |
| Topics in mathematics or statistics: | None |
| Topics in bioinformatics or data science: | Similarity searches (BLAST, Multiple Sequence Alignment)  Data visualization |

# Student Prerequisites

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| Recommended prior course work: | High school level biology |
| Recommended computer skills: | Basic: Familiarity with web browsers, word processing |

# Instructor Prerequisites

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| Recommended computer skills: | Basic: Familiarity with web browsers, word processing |
| Instructional requirements: | Basic Computer Lab (Access to laptops/desktops, no large memory or CPU requirements) |

# Implementation Recommendations

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| Instructional time required: | 1 class period or less |
| Students work as individuals or teams? | Either individual or team work is possible |
| Number of students in a class: | More than 50 students (assume no TAs and one computer for each student) |

# Accessibility

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| Available languages: | English |
| Additional materials for students with disabilities: | None |