Module 3: Quiz

This is a preview of the published version of the quiz

Started: Mar 3 at 2:23pm

Quiz Instructions

Overview

This quiz will help you reflect on the important takeaways of this module's content. You have multiple attempts on this quiz prior to the deadline. This quiz is open book and intended to ensure that you are understanding the content of this module.

Instructions

Click the "Take the Quiz" button to begin. After answering all of the questions, please click Submit at the bottom of the page to submit your answers.

How you'll be graded

Each question is worth a certain amount of points, and you'll earn points for each correct response. To review or discuss any questions or answers in this quiz, please connect with your instructor.

Question 1 1 pts

Genes are only expressed from the X chromosome in reproductive organs.

○
True

○
False

Question 2 1 pts

The X and Y chromosomes share evolutionary history.

○
True

○
False

Question 3 1 pts

There are regions of the X and Y chromosomes that are 100% identical.

○
True

○
False

Question 4 1 pts

There are genes on the X and Y chromosomes that are nearly identical in sequence.

○
True

○
False

Question 5 1 pts

Since mechanisms are in place to inactivate an X chromosome, tumor cells could not survive after duplication of one or both arms of the X chromosome.

○
True

○
False

Question 6 1 pts

Dosage compensation refers to a cellular mechanism by which sex chromosomal gene expression is made equal to autosomal gene expression.

○
True

○
False

Question 7 1 pts

After X chromosome inactivation, only one X chromosome is available for active transcription.

○
True

○
False

Question 8 1 pts

X chromosome inactivation occurs early in development.

○
True

○
False

Question 9 1 pts

XIST is a transcript that is read from a region of the X chromosome called the X inactivation center.

○
True

○
False

Question 10 1 pts

X chromosome inactivation is associated with methylation of histones which also inhibits gene expression.

○
True

○
False

Question 11 1 pts

Once an X chromosome is inactivated and turned into a Barr body, it is no longer replicated as the cell divides.

○
True

○
False

Question 12 1 pts

No genes are expressed from the inactivated X under any circumstance.

○
True

○
False

Question 13 1 pts

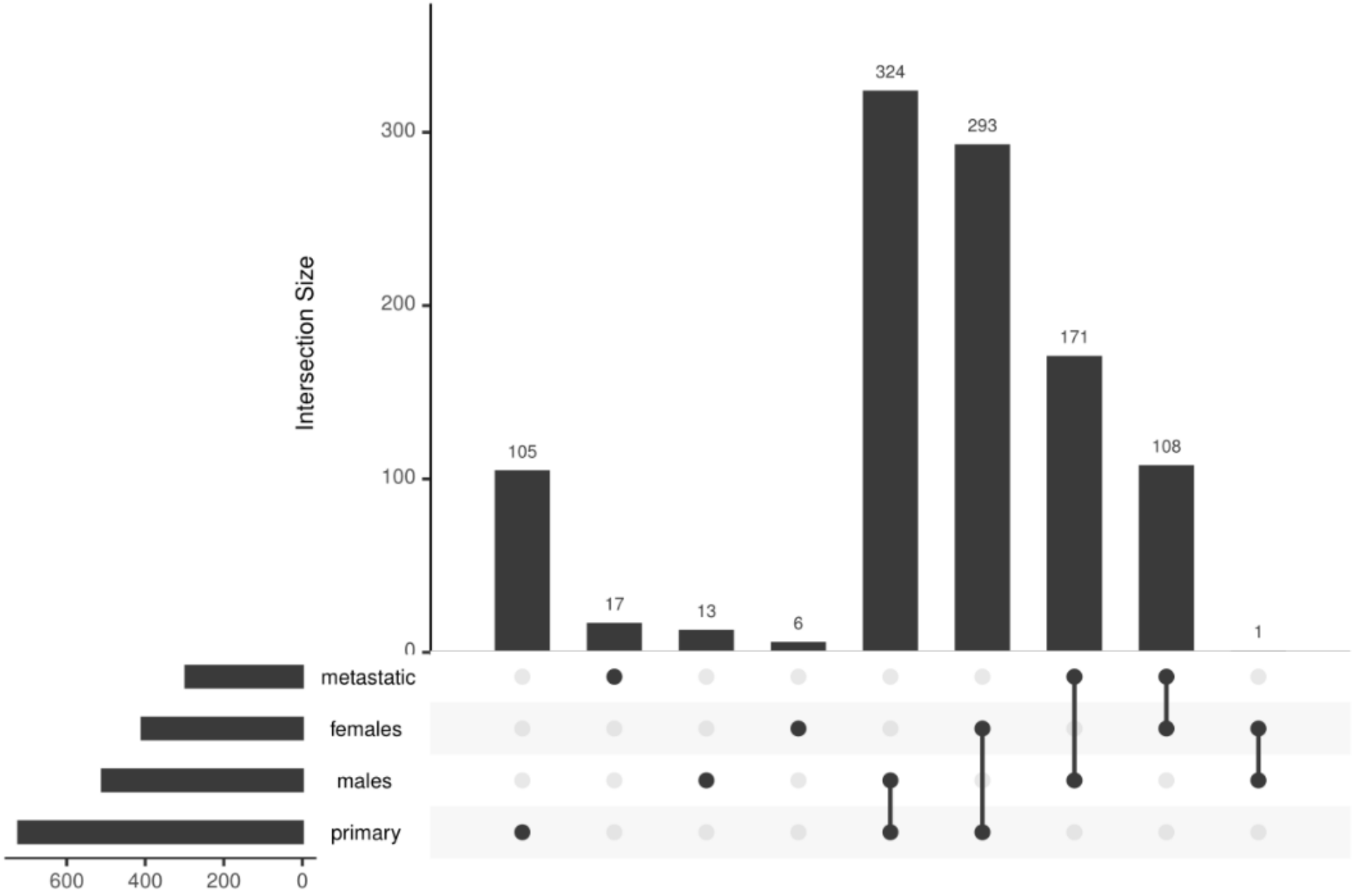
Females are thought to have more protection against cancer from oncogenic mutations on the X chromosome because one X chromosome is silenced in all of their cells.

○
True

○
False

Question 14 1 pts

In the following upset plot of the CCLE cell lines, there are more cell lines from primary tumors from female patients than primary tumors from male patients.


Intersection Size
300
200
100
0
324
293
171
108
105
17
13
6
1
metastatic
females
males
primary
600
400
200
0

○
True

○
False

Question 15 1 pts

Of the cell lines not labeled with a reported sex for the patient, most are from primary tumors

- ○ True
- ○ False

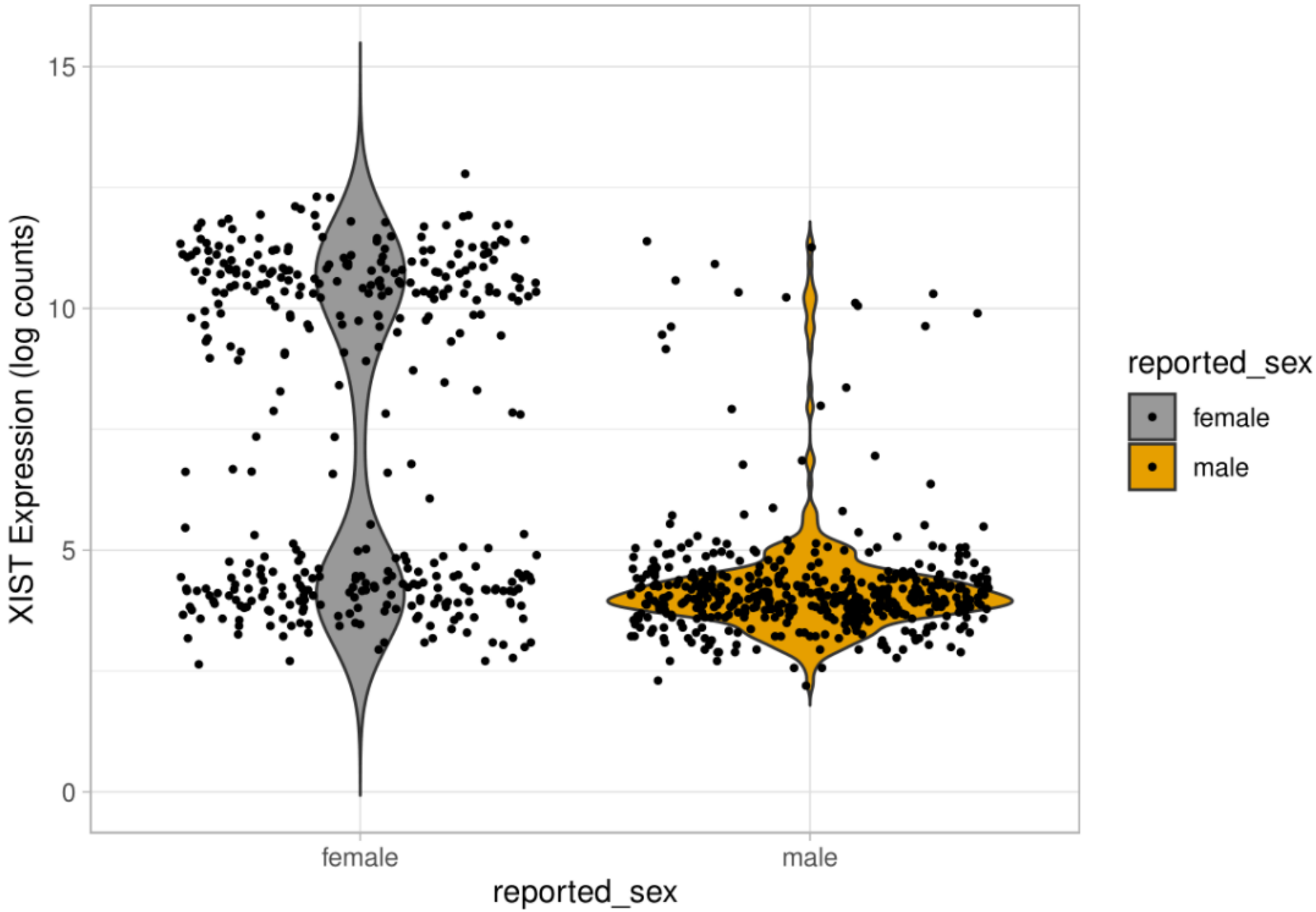
Question 16 1 pts

There are cell lines that are marked as primary and metastatic.

- ○ True
- ○ False

Question 17 1 pts

In the following violin jitter plot of XIST expression in CCLE cell lines, all cell lines derived from patients that were male have low expression of XIST (< 6 log counts).


15
10
5
0
XIST Expression (log counts)
female
male
reported_sex
reported_sex
female
male

○
True

○
False

Question 18 1 pts

Some cell lines derived from tumors from female patients have low expression of XIST.

○
True

○
False

Question 19 1 pts

High XIST expression in a cell line from a male might be due to a duplication of the X chromosome.

○
True

○
False

Question 20 1 pts

High XIST expression in a cell line from a male might be due to a mislabeling of the patient sex when the cell line was derived many years ago.

○
True

○
False