

A hand holding a teal awareness ribbon against a dark wood background. The ribbon is looped and extends across the frame. The text is overlaid on the right side of the image.

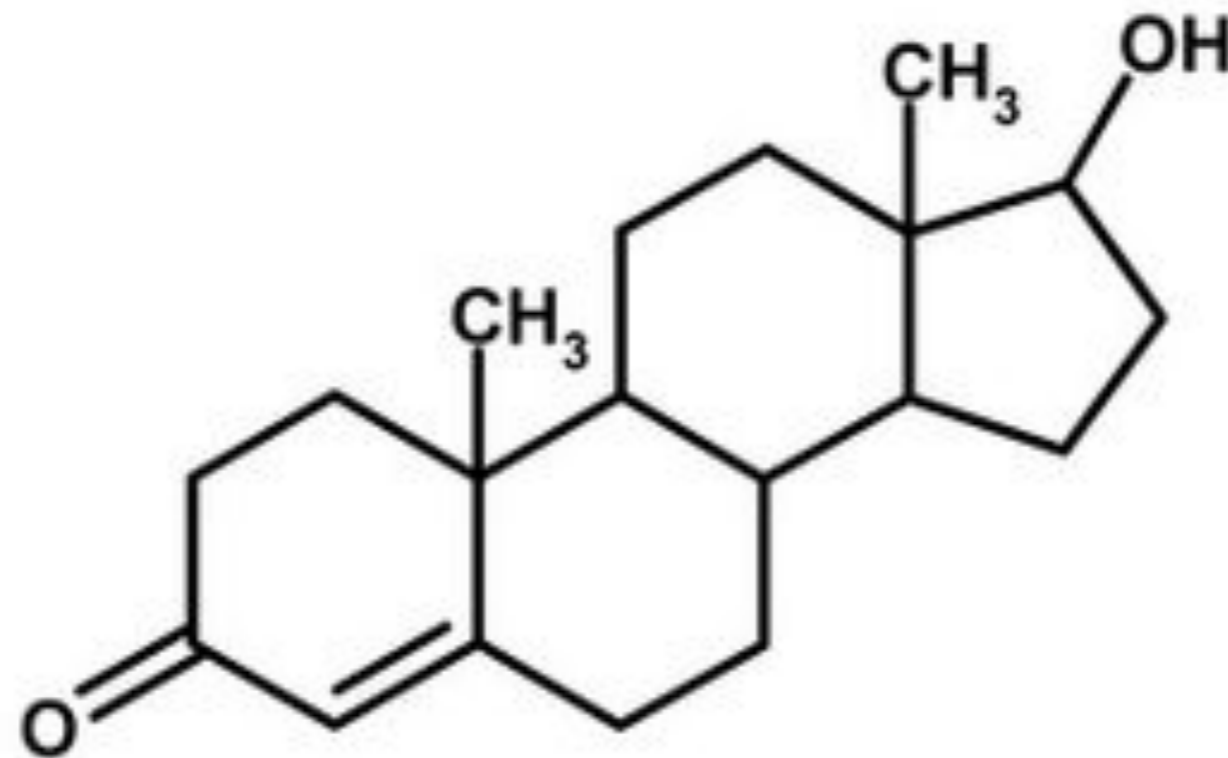
Polycystic Ovary Syndrome

Madison Sanderson

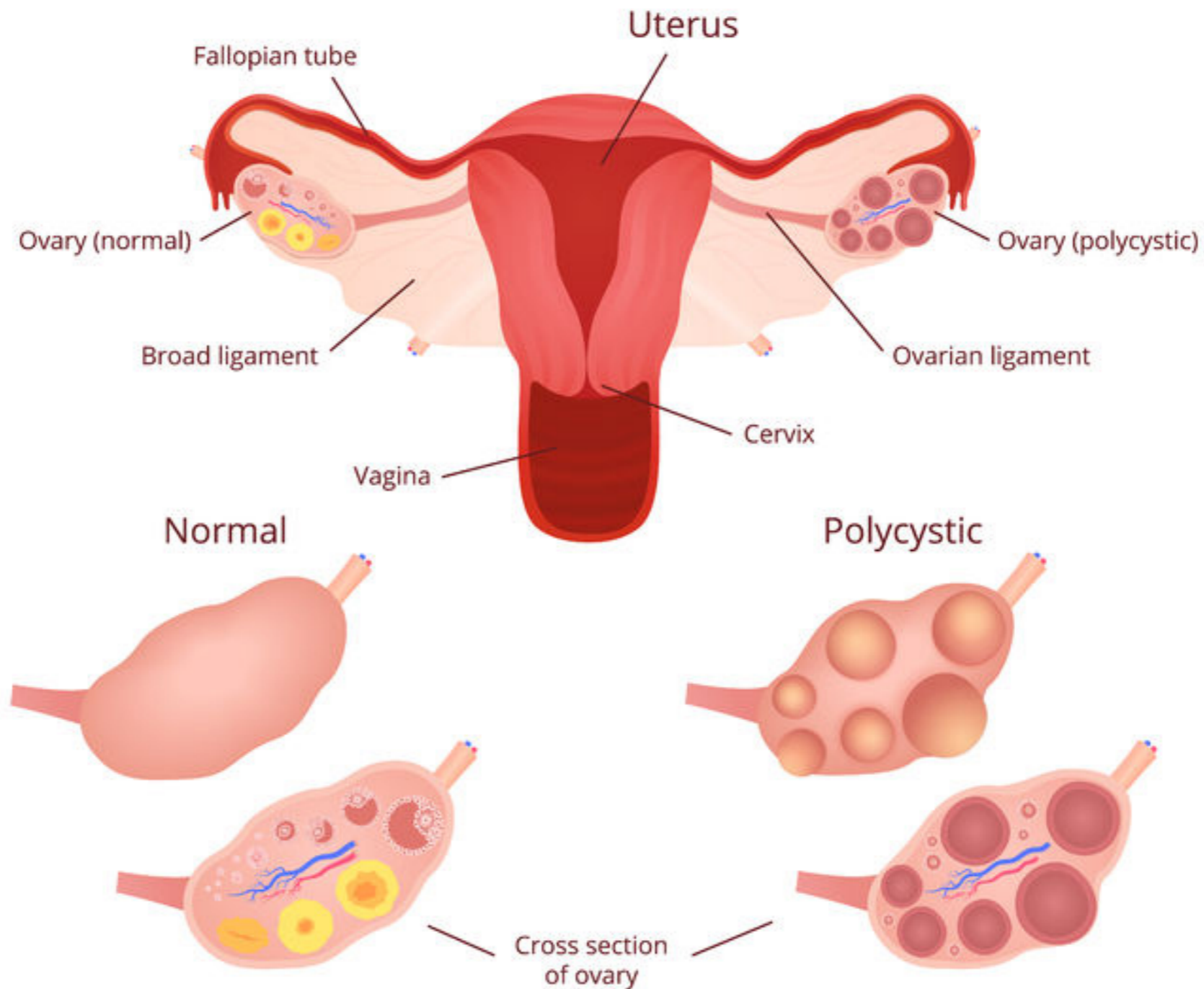
What is Polycystic Ovary Syndrome (PCOS)?



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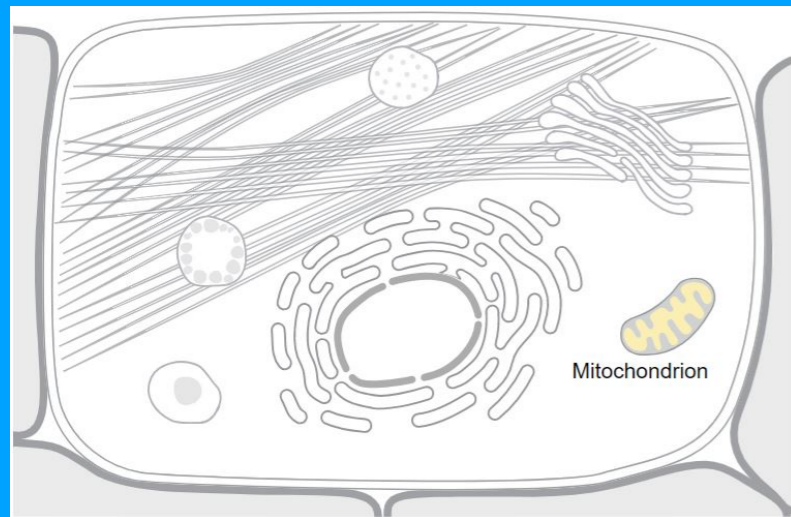


What gene is associated with PCOS?

StAR

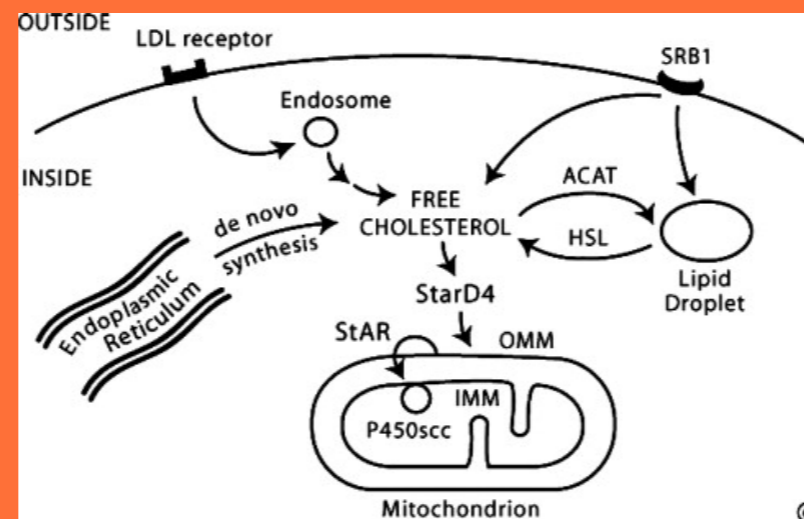


Cellular Component



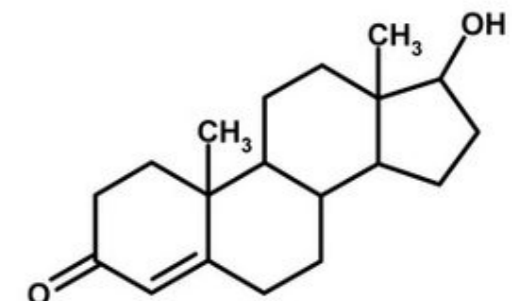
Mitochondrion

Molecular Function



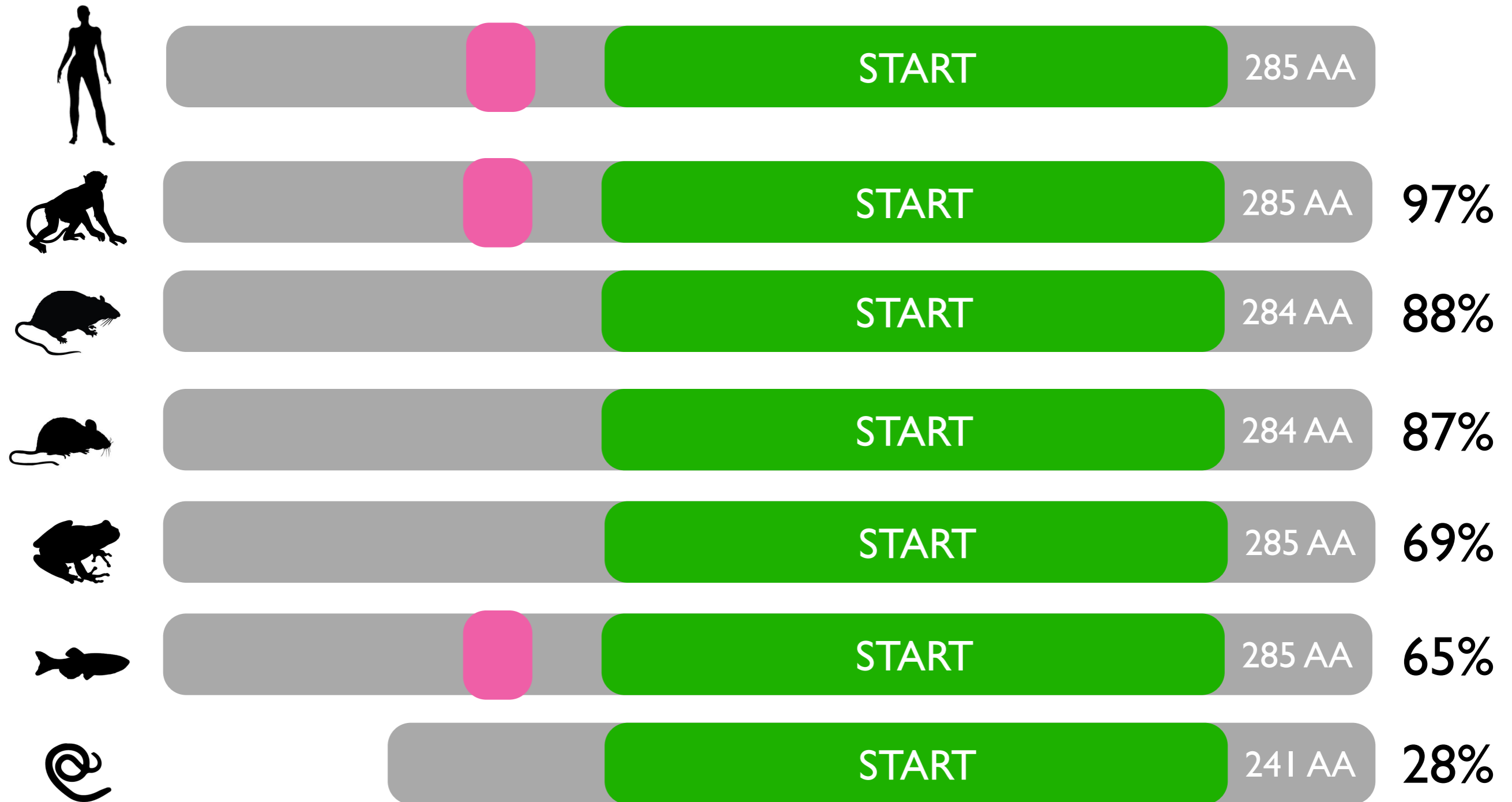
Cholesterol Transport
Activity

Biological Process

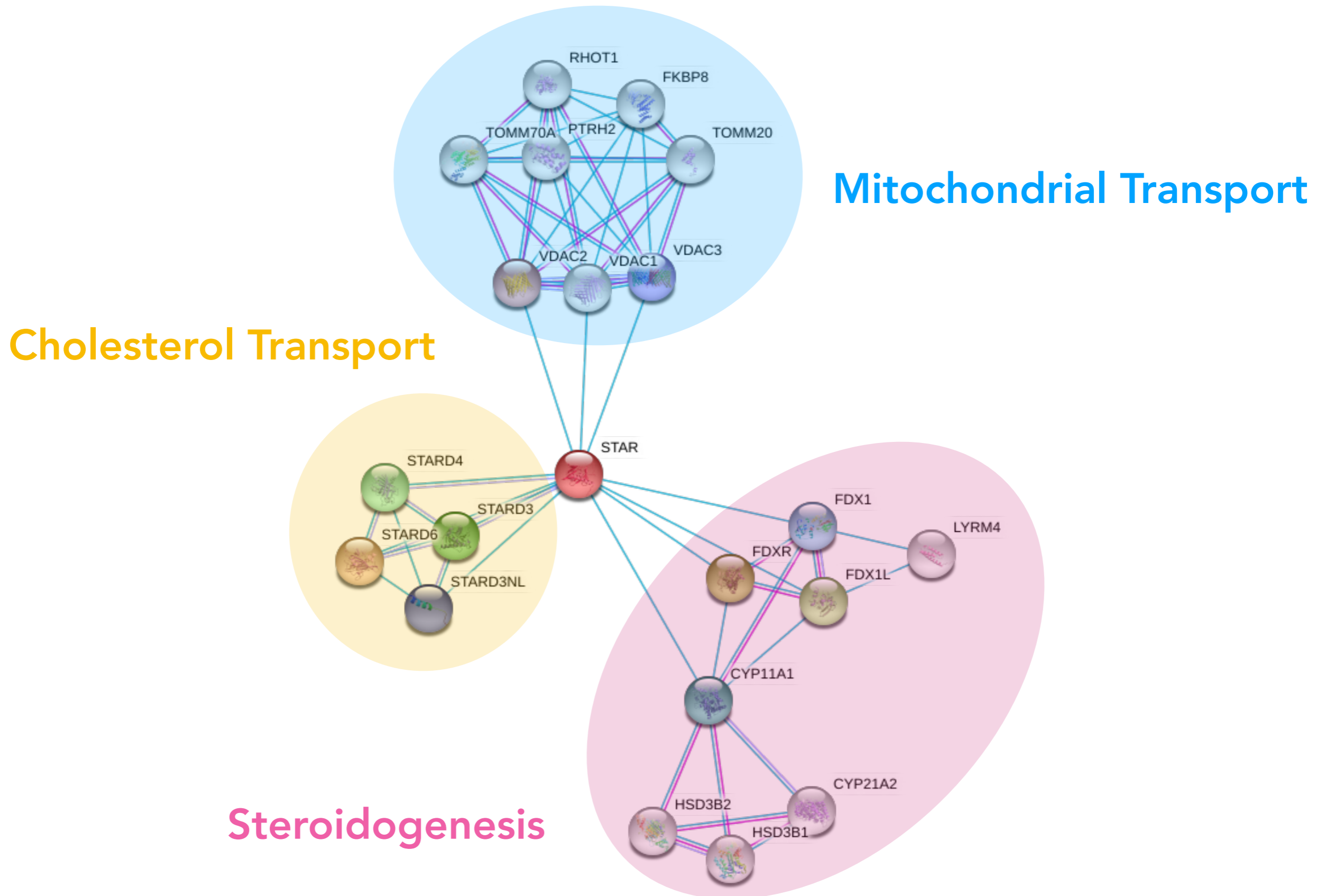


Steroid Biosynthetic
Process

Is **StAR** conserved across species?



What proteins interact with **StAR**?

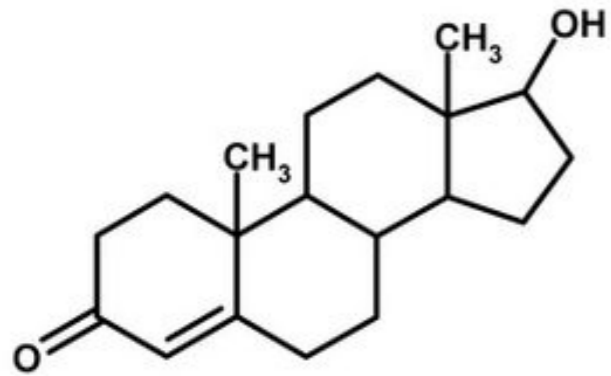
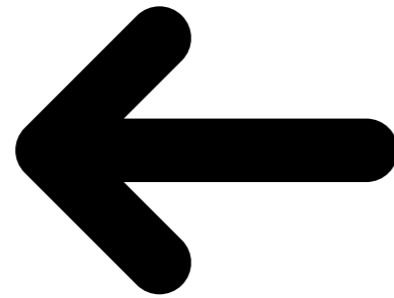
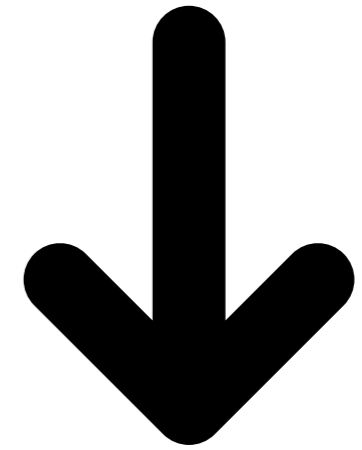
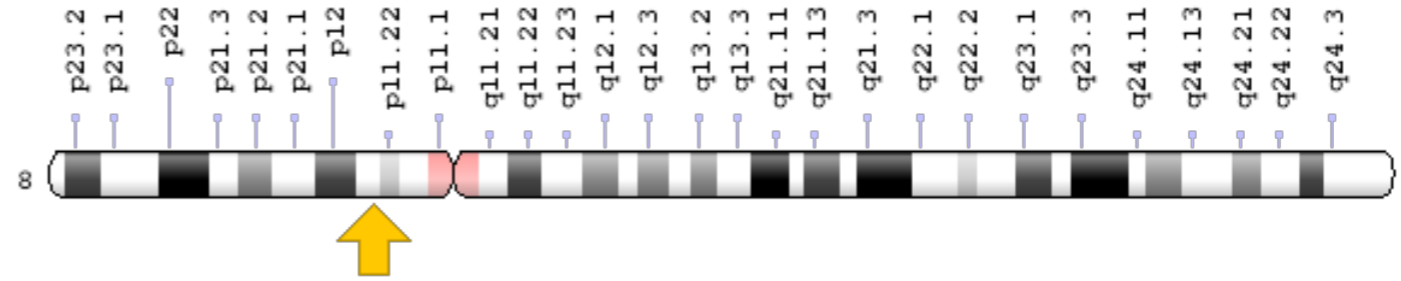
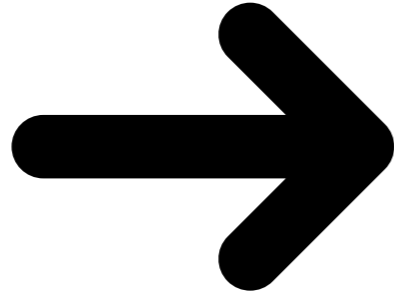


What model organism should be used?

Rattus norvegicus



What is the **knowledge gap**?



What is the primary goal?

To better understand what factors regulate **StAR** expression and androgen levels in PCOS

Aim 1

Determine the effect of variation at the GATA sequence within the StAR promoter on rat androgen levels and StAR expression within ovarian cells

Aim 2

Determine what other genes are highly-associated with StAR overexpression in ovarian cells of hyperandrogenized rats

Aim 3

Determine proteins that directly interact with StAR within ovarian cells of hyperandrogenized rats

Aim 1: Determine the effect of nonsynonymous variation at the GATA sequence within the StAR promoter on rat androgen levels and StAR expression within ovarian cells

**Next-gen
DNA
sequencing**

CRISPR/Cas9

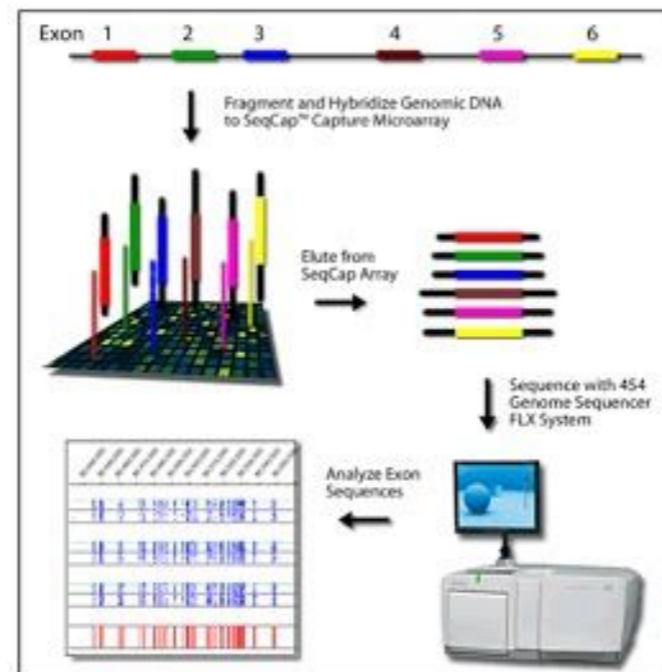
**Measure StAR
expression**

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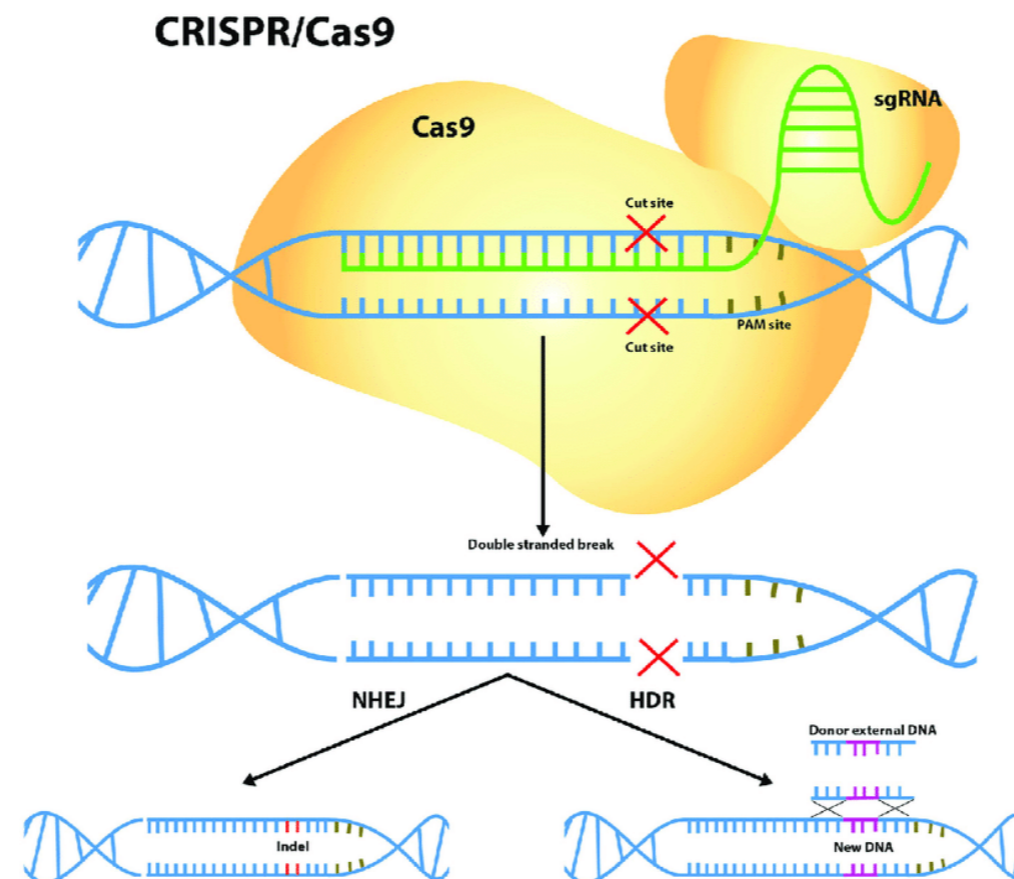
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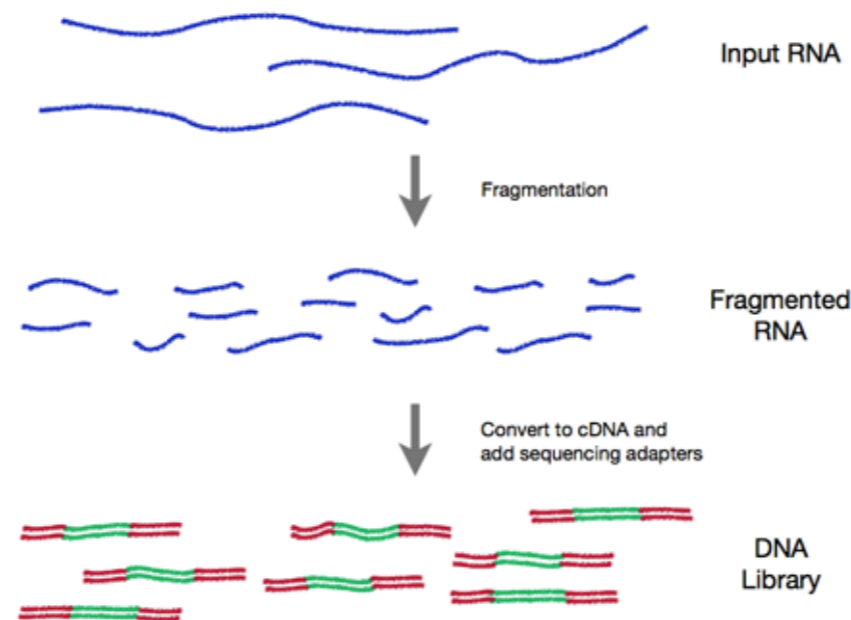
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RNA-seq



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**Identify rats
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overexpression**

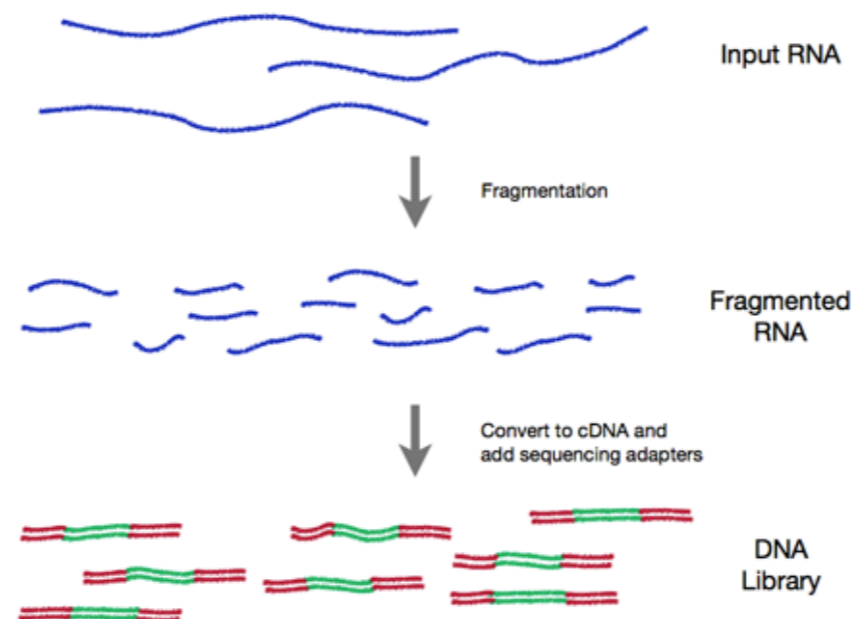
**RNAi
genome-wide
screen**

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RNAi genome-wide screen

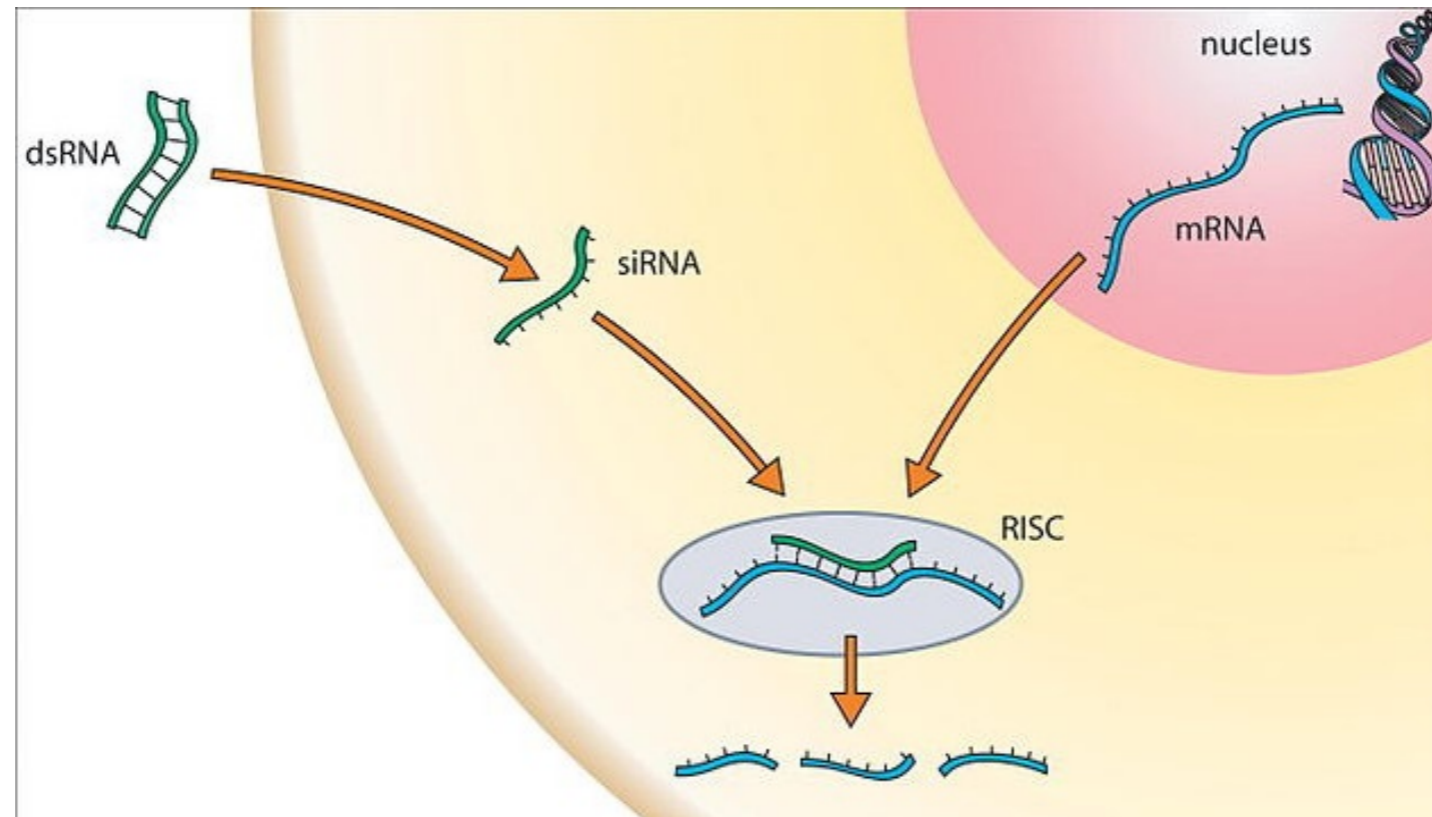
RNA-seq



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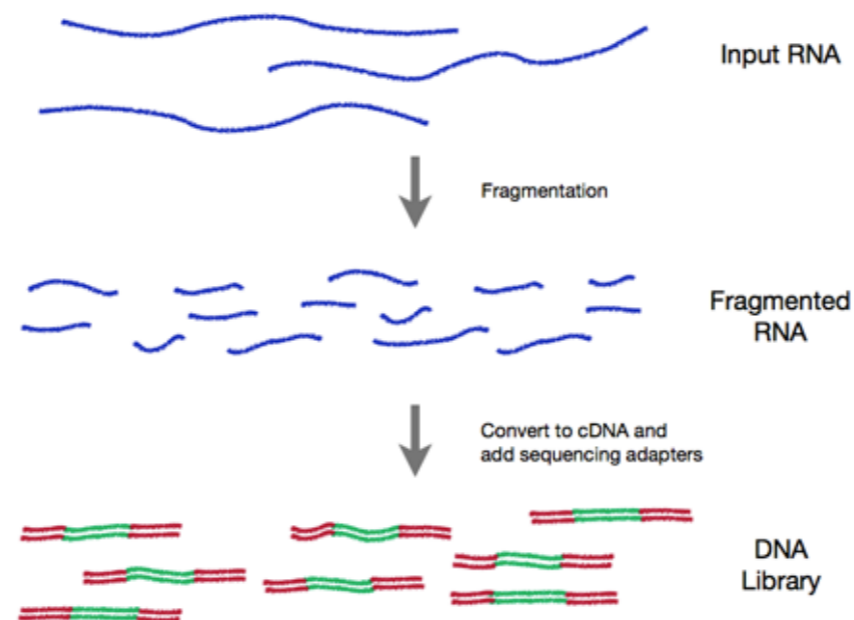
Protein
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analysis via
mass
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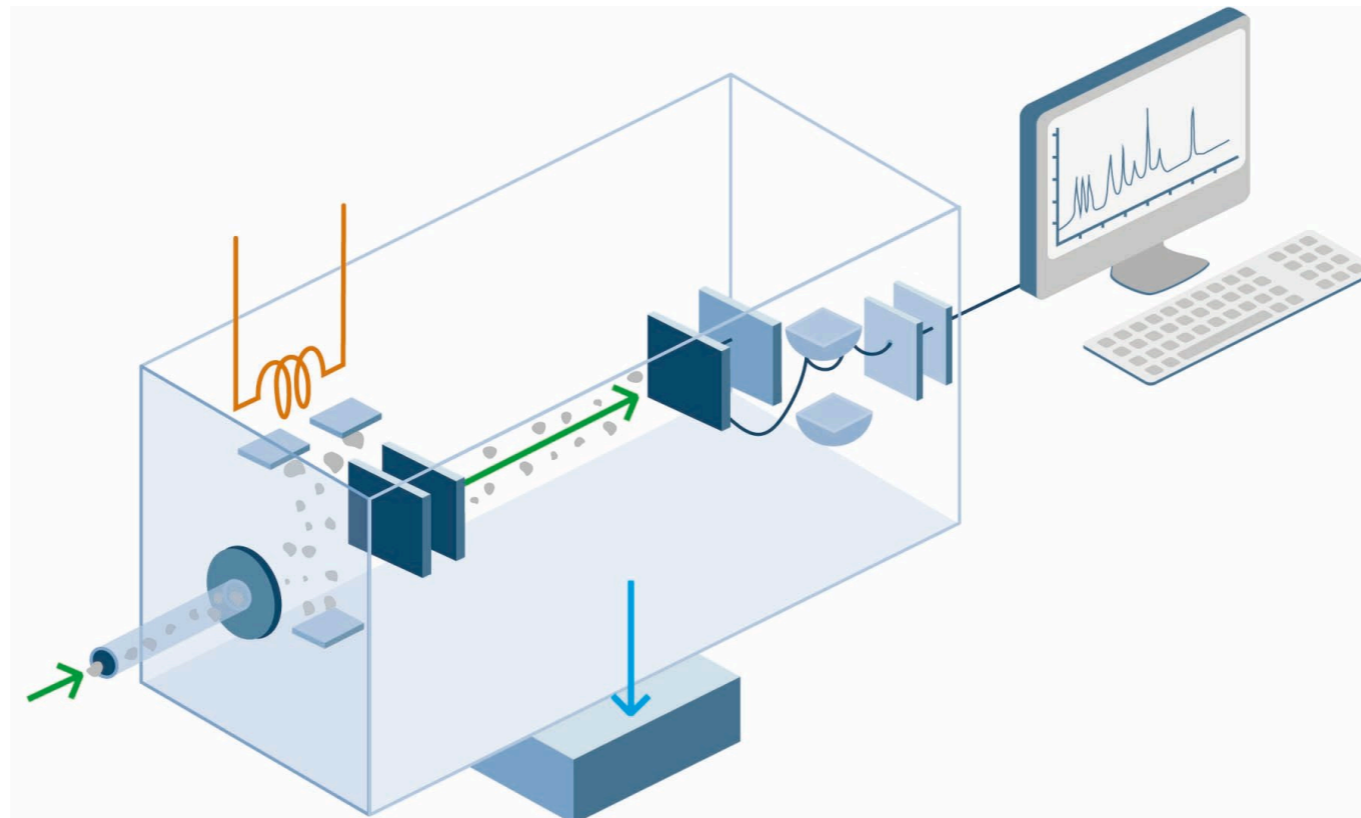
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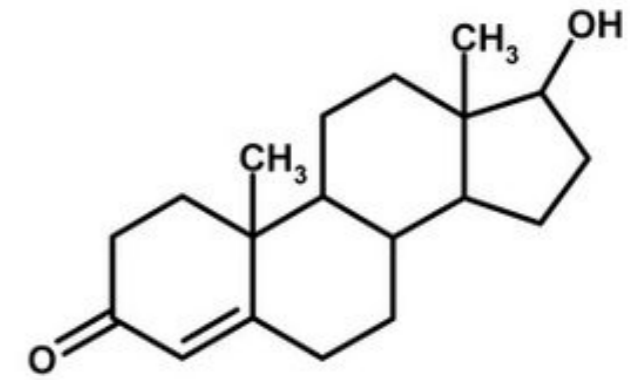
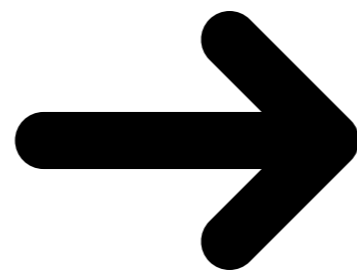
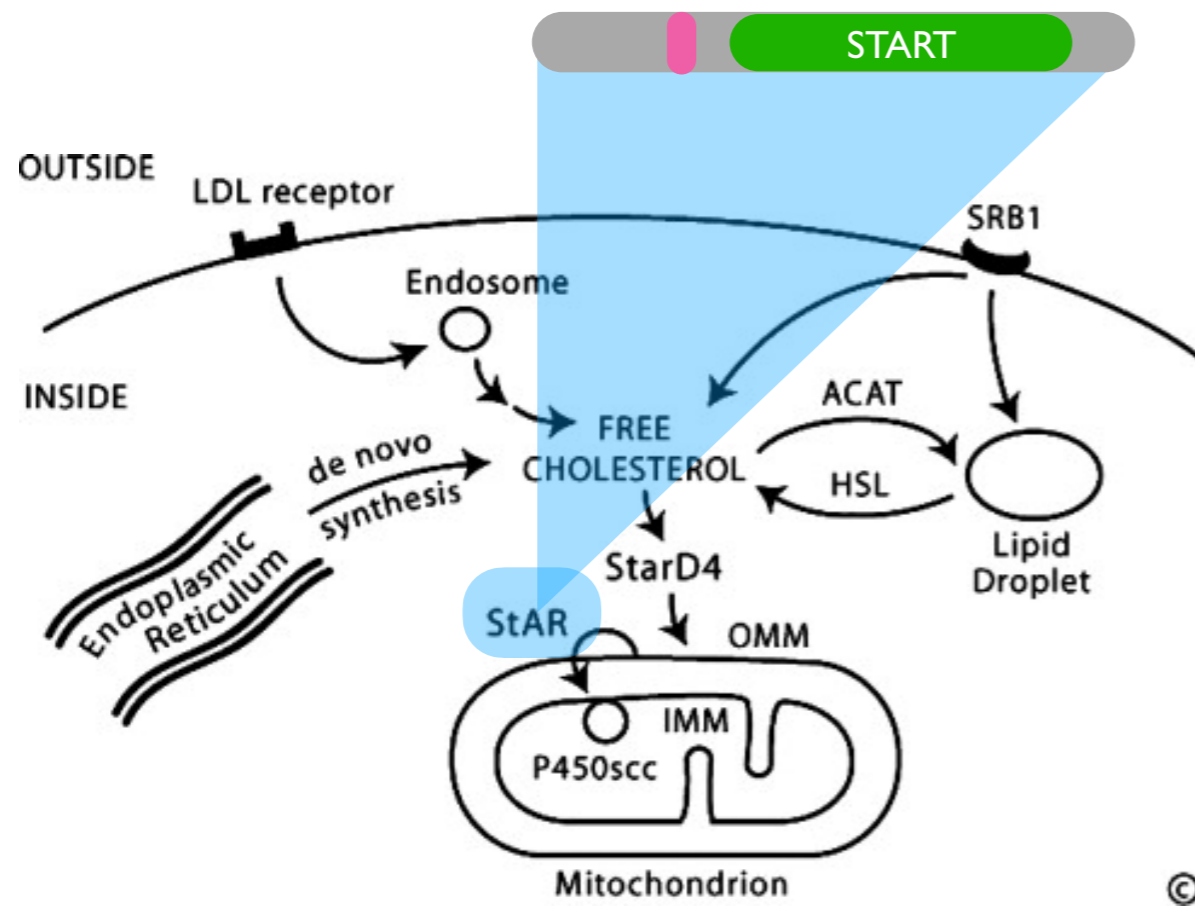
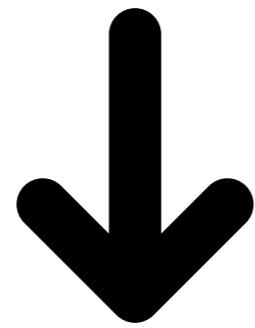
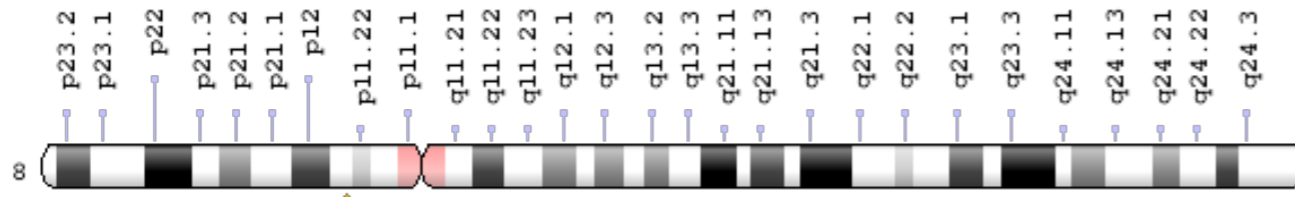
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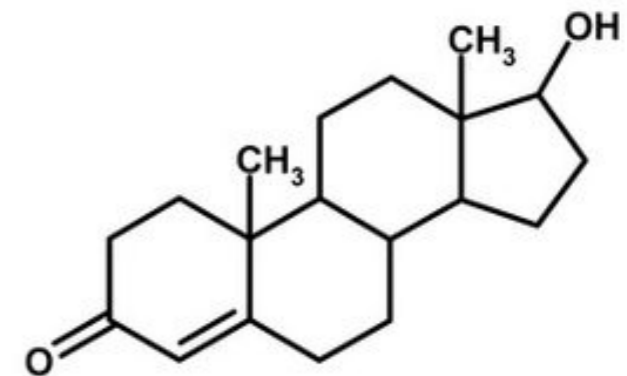
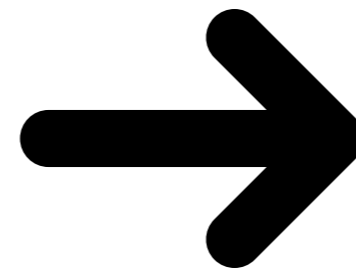
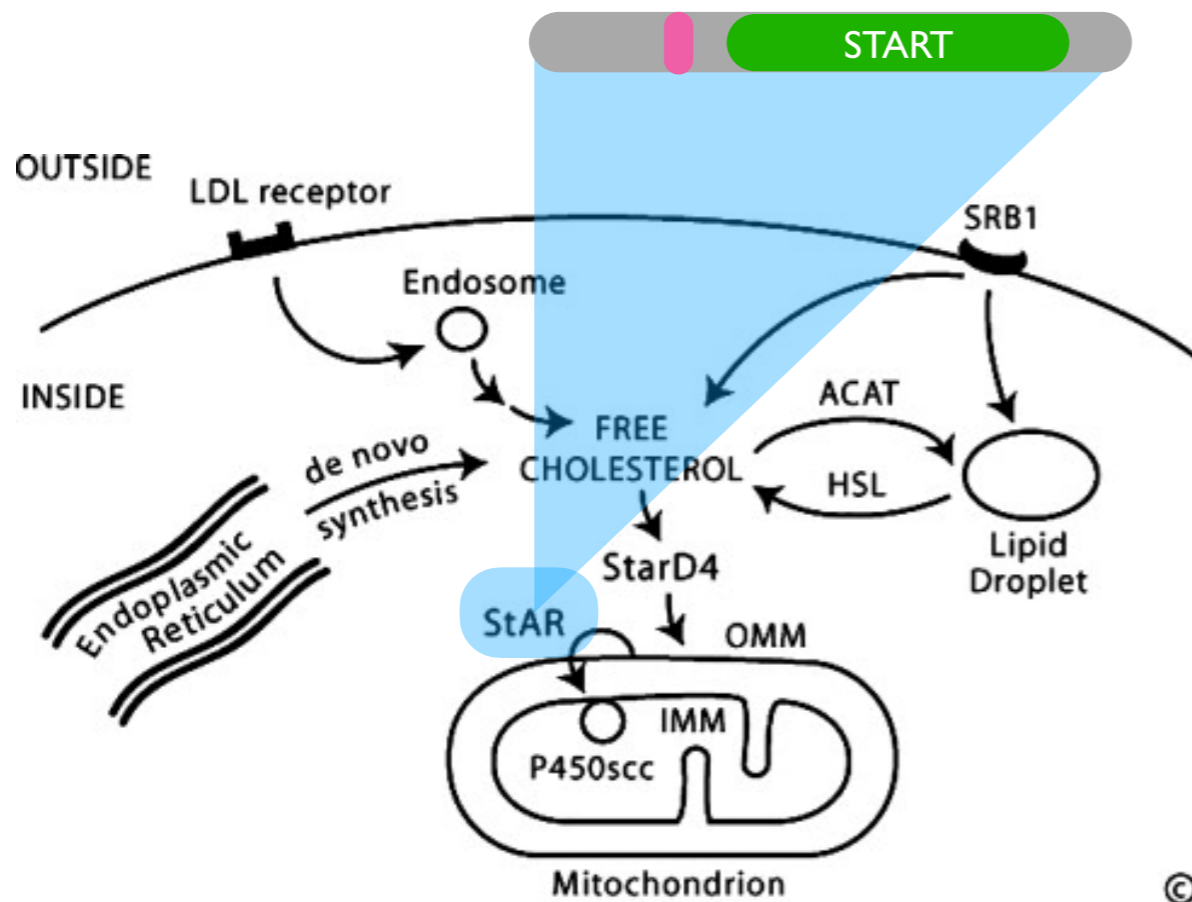
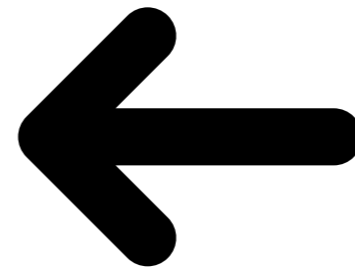
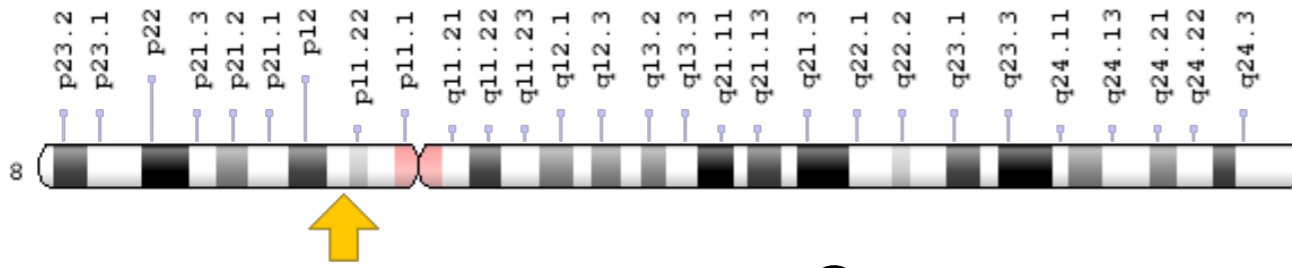
Protein
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Summary



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References

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