

# Cytokinesis and Dbf2

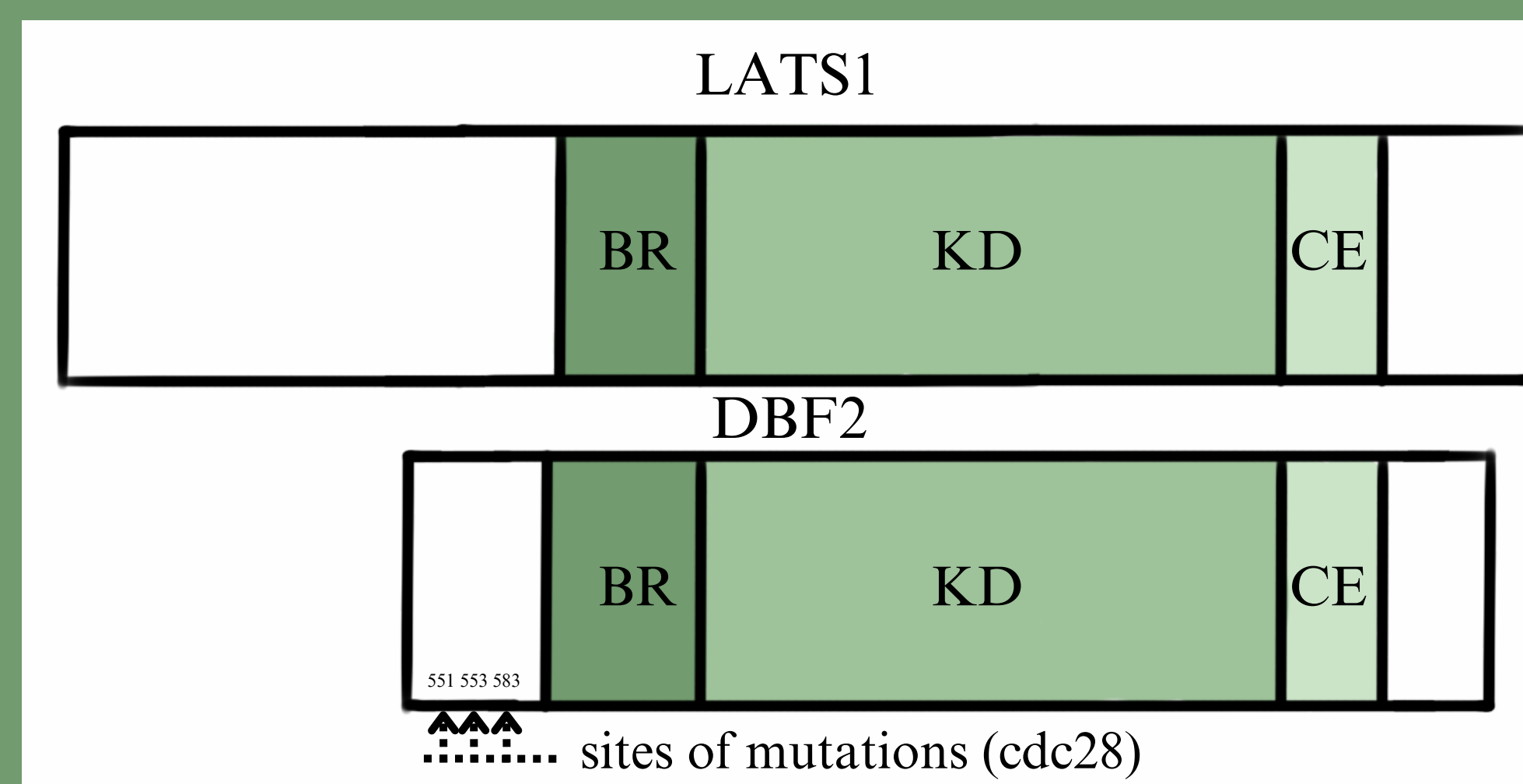
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## Description

The Mitotic Exit Network is a pathway that allows a cell undergoing mitosis to complete cytokinesis. Dbf2 is a MEN protein kinase. Mutant alleles that disrupt phosphorylation of Dbf2 were introduced into yeast cells. This mutant will effect how Dbf2 is expressed in cells. Then, the effects of phosphorylation of Dbf2 on cytokinesis can be studied

## DBF2 & LATS1

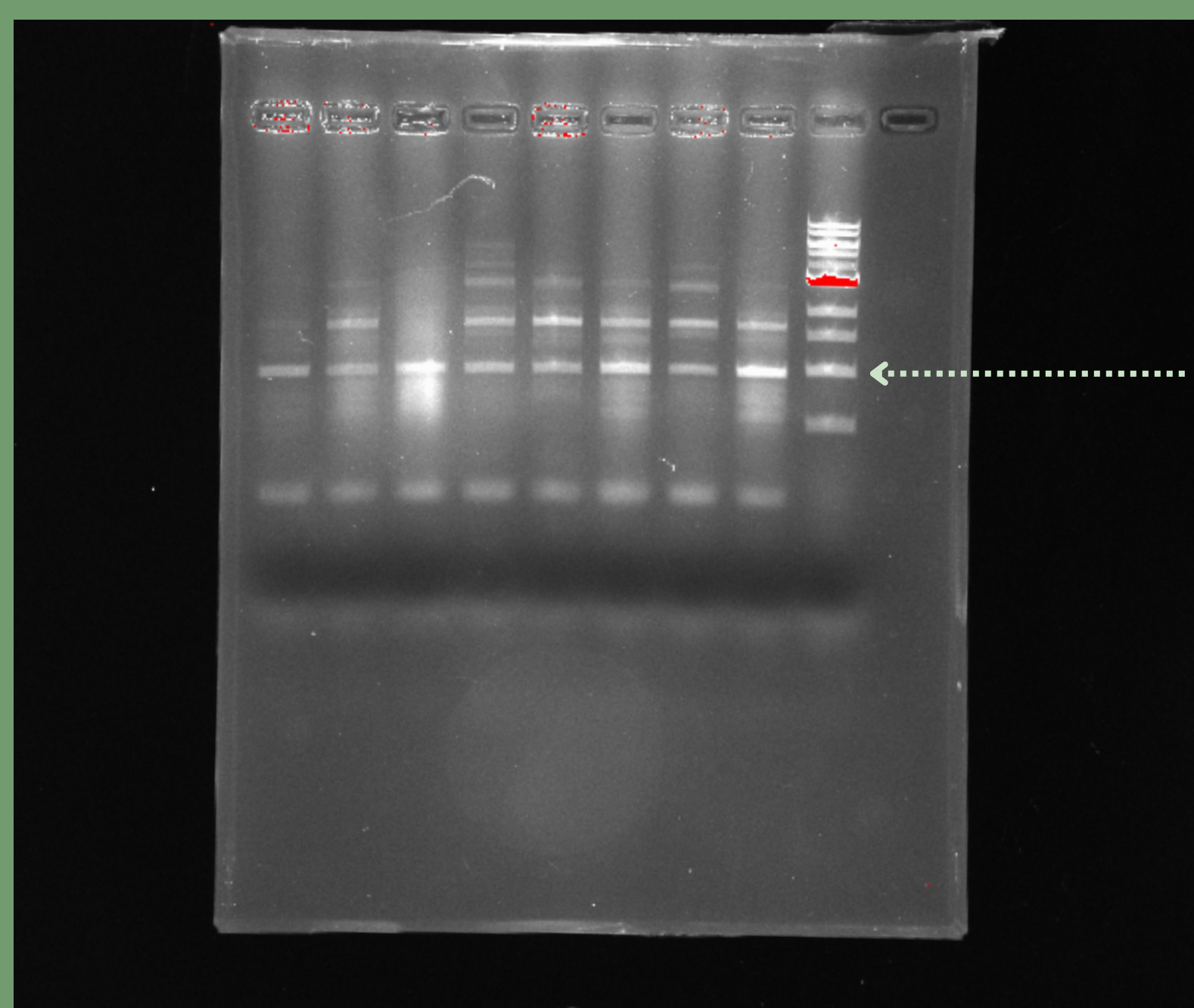


Dbf2 and its human homolog  
The mutation sites code for cell cycle kinases.

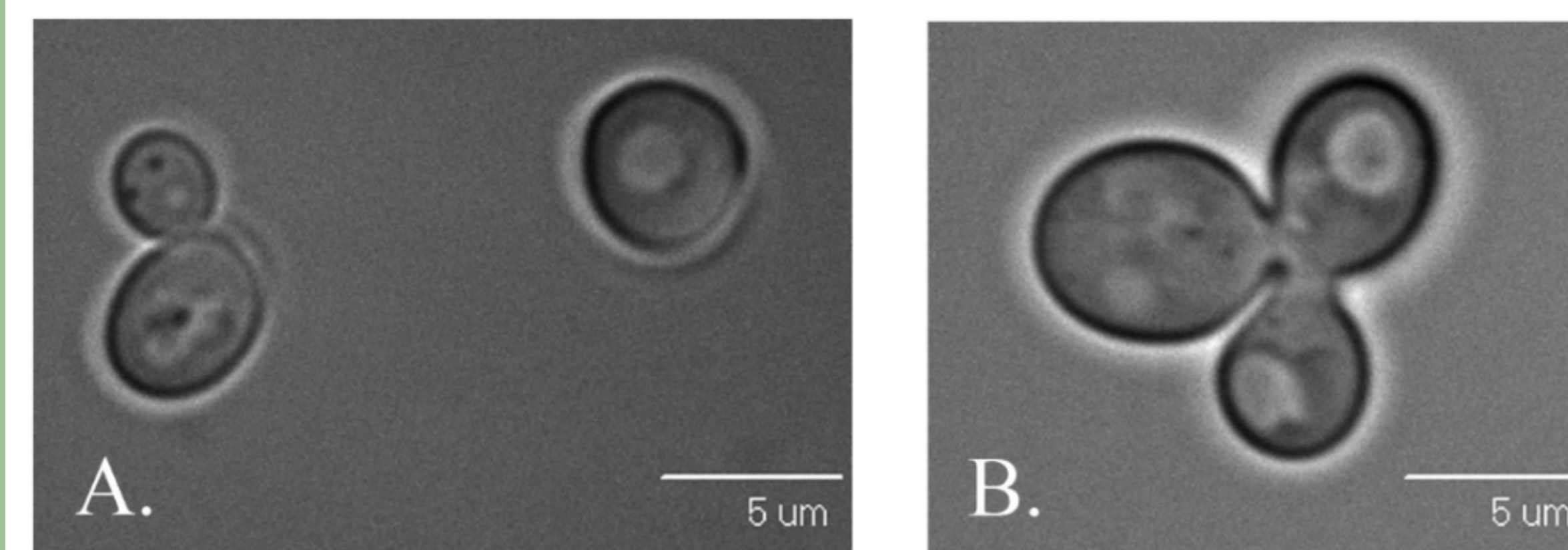
## Human Health

There is a homolog to Dbf2 in humans within the Hippo pathway. This pathway acts as a tumor suppressant, and mutations within it lead to the formation of many cancers. By studying a comparable system within yeast cells, the effects of possible mutations within human cells can be better understood.

## Figure One



Successful gel showing the amplification of Dbf2



Sample A represents normal budding yeast division

Sample B represents mutant yeast division, creating chains of connected cells

## Figure Two

## Goals

- Successful recombination of the mutant Dbf2 alleles.
- Genomic DNA must be extracted and prepared.
- PCR to amplify the Dbf2 allele.
- DNA sequencing and mutant analysis of the PCR product to determine the success of recombination.
- Study the effect of the phosphorylation on cytokinesis.

## Results

- The mutant DBf2 allele is present in the yeast.
- Successful PCR results confirm this, and amplified the wanted sequence (see fig. one).
- Once the purified PCR result is sequenced, analysis of the yeast cultures through microscopy can occur.
- If chains are present (see fig. two) then Dbf2's effects of cytokinesis can be seen.