**Journal Club Workshop Worksheet**

**To do while reading the article, in preparation for class:**

Identifying components of this manuscript

1. What Journal, Issue, and Year was this article published in?

Journal: The EMBO Journal

Issue: 32

Year: 2013

1. Identify 3 aspects of this paper that tell you it is a primary research article (other than I sais it was)

* Contain detailed information on how the studies were conducted and the methodology used in determining the structure of the data/studies.
* Abstract and introduction offer different information, such that the abstract offers a summery on the results and expectation of the article as a whole where the introduction provides a background into the data needed as a prerequisite to understanding the data presented in the rest of the article.
* Data and the respective interpretation, is kept separate

Background and Intro

1. What is cohesin? How is it different or the same as cohesion?

* A protein complex that regulates the separation of chromatids during S phase of mitosis/meiosis by holding the two strands together
* Cohesion is the process/force that two molecules sticking together promoting van der waals interactions.

1. What is Wpl1? What is it’s role in relation to cohesin?

Wpl1 is a protein part of the cohesin complex.

Wpl1 creates a complex that allows cohesin to bind chromatin in a reversible manner that is capable of maintaining cohesion.

1. What is the question/process the authors are trying to understand better.

Is Wpl1 involved in regulation of the ATPase activity of cohesin, and is it subject to the acetylation state of Smc3?

1. Identify, print, and read a REVIEW article that you feel is relevant to this article. Provide a brief (1 to 3 sentence) explanation of how your chosen review article is relevant to the assigned research article.

Elbatsh, A. M. *et al.*Cohesin Releases DNA through Asymmetric ATPase-Driven Ring Opening. *Molecular Cell***61,**575–588 (2016).

<https://doi.org/10.1016/j.molcel.2016.01.025>

This review article discusses other functionalities for the Cohesin protein and how it uses ATPase. This article goes into a broader explanation of cell division and how cohesin works in accordance to ATP smc1 and ATP smc3 domains. Then, it continues to review the mechanisms of posttranscriptional modification in terms of opening the cohsin ring and the cycle it produces with smc1 and smc3.

**To think about at home and complete during the in-class workshop:**

Results

In group discussions consider the following for each figure:

1. What experiment or assay was performed? Where did you find this information?
2. WHAT does the figure show?
3. How does this figure support/provide the background for the *next* figure?

Consider the following for Cohesin and Wpl1:

1. What features of each protein are of particular interest?
2. How does each protein’s structure determine function?
3. How does the article's content use the information we have covered in class?