Using the ChiP-Seq technique for the detection of chromatin interactions with the flowering repressor HvVRN2

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1. Winter barley and vernalization
2. HvVrn2 is involved in flowering
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1. Winter barley and vernalization
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3. ChIP Sequencing technique:

DNA + bound protein  |  Fragment DNA  |  Immunoprecipitate

Picture of ChIP-Seq process:
- Cross-link and shear
- ChIP
- Gel electrophoresis
- Sequencing

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4. Barley CSIROB01 and CSIROB03
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1. Winter barley and vernalization
2. HvVrn2 is involved in flowering
3. ChIP Sequencing technique:
4. Barley CSIROB01 and CSIROB03
5. Anti-ZCCT Antibody
6. Cross linkers:

- DNA + bound protein
- Immnoprecipitate
- Fragment DNA

[Diagram of the ChIP-Seq process]

- Map sequence tags to genome & identify peaks

- Crosslinkers:
  - ESS: Ethylene glycol bis(aminohexanoate) MW 49.36 spacer arm 16.1 Å
  - Formaldehyde MW 30.03
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6. Cross linkers:

- ESS (Ethylene glycol bis(oximodiacrylatemethylsuccinate) MW 496.36 Spacer Arm 16.1 Å)
- Formaldehyde MW 30.03

7. Optimization of parameters and synthesis of libraries
8. Initial sequencing results:

There are around 500 peaks in the CSIROB01 sample and 163 in the CSIROB03 sample
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9. Work in progress: We plan to increase the number of reads, and use different biological replicates.