



	<b>Experiment title:</b> MOM1 initial crystal trial	<b>Experiment number:</b> TC-214
<b>Beamline:</b> ID29	<b>Date of experiment:</b> from: 19 July 2008                      to: 19 July 2008	<b>Date of report:</b> 21 July 2008
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**Report:**

This experiment involves determining the structure of a 115 residue (1699-1814) conserved coiled-coil domain which is part of the large chromatin remodeling protein MORPHEUS' MOLECULE 1 (MOM1) in Arabidopsis. The crystals that were brought to the ESRF for this visit were relatively large, on the order of 300 to 500 microns in length, and were shown to contain the correct protein domain by analysing the crystals via SDS-PAGE and silver staining.

From the time spent on beam line ID29, we were able to capture fairly clean diffraction patterns from multiple crystals grown in similar conditions. Unfortunately, both the MOM1 native and heavy-atom soaked crystals diffracted to a resolution no better than 6 to 7 angstroms. However, this should be enough to guide future optimization experiments in attempts to create better diffracting crystals. We are currently determining the spacegroup and unit cell dimensions, and we hope to also validate the presence of heavy atoms (Thimerosal) in our soaked crystals with these data.

We hope to return to the ESRF in the near future with more crystals to test, with the goal of finding crystals that diffract to a resolution of at least 2 angstroms. After we define the conditions giving higher resolution diffraction, through additive screening and different approaches to cryo-preservation, we will attempt to grow crystals that will enable us to collect a complete, high-resolution data set from this protein domain.

Figure 1: *MOM1* crystal growth over time in hanging-drop vapor diffusion

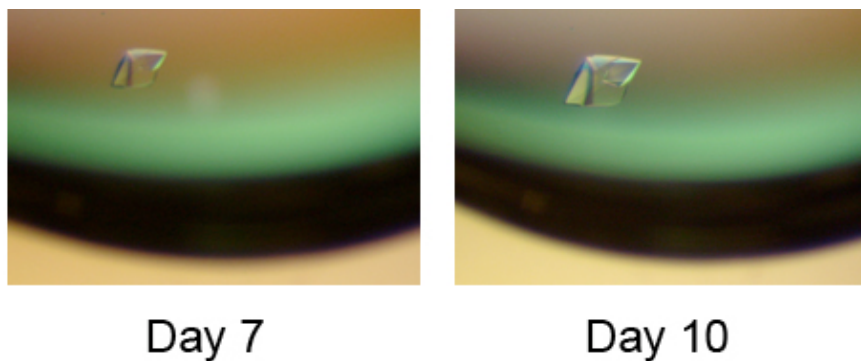


Figure 2: *MOM1* crystal growth over time in hanging-drop vapor diffusion

