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Experiment Report Form

The double page inside this form is to be filled in by all users or groups of users who have had access to beam time for measurements at the ESRF.

Once completed, the report should be submitted electronically to the User Office using the **Electronic Report Submission Application:**

http://193.49.43.2:8080/smis/servlet/UserUtils?start

Reports supporting requests for additional beam time

Reports can now be submitted independently of new proposals – it is necessary simply to indicate the number of the report(s) supporting a new proposal on the proposal form.

The Review Committees reserve the right to reject new proposals from groups who have not reported on the use of beam time allocated previously.

Reports on experiments relating to long term projects

Proposers awarded beam time for a long term project are required to submit an interim report at the end of each year, irrespective of the number of shifts of beam time they have used.

Published papers

All users must give proper credit to ESRF staff members and proper mention to ESRF facilities which were essential for the results described in any ensuing publication. Further, they are obliged to send to the Joint ESRF/ ILL library the complete reference and the abstract of all papers appearing in print, and resulting from the use of the ESRF.

Should you wish to make more general comments on the experiment, please note them on the User Evaluation Form, and send both the Report and the Evaluation Form to the User Office.

Deadlines for submission of Experimental Reports

- 1st March for experiments carried out up until June of the previous year;
- 1st September for experiments carried out up until January of the same year.

Instructions for preparing your Report

- fill in a separate form for each project or series of measurements.
- type your report, in English.
- include the reference number of the proposal to which the report refers.
- make sure that the text, tables and figures fit into the space available.
- if your work is published or is in press, you may prefer to paste in the abstract, and add full reference details. If the abstract is in a language other than English, please include an English translation.

ESRF	**Experiment title:** Structural characterization of the cytoplasmic dynein heavy chain from human and *Dictyostelium discoideum*	**Experiment number**: MX 1097
Beamline: ID14-3	**Date of experiment**: from: May 4th 9:00 to: May 4th 17:00	**Date of report**:
Shifts: 1	**Local contact(s)**: Mr. Adam Round	*Received at ESRF:*

Names and affiliations of applicants (* indicates experimentalists):

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Dr. Martin Kollmar and Christian Eckert

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Report:

Our goal is to solve the structure of various constructs of the 550 kDa cytoplasmic dynein-heavy-chain from human and the cellular slime mold *Dictyostelium disoideum*.

Two DHC-constructs formed crystals. One consists of the linker- and the AAA1-domain (referred to as construct 1), both of which are essential for dynein motor activity. The other one represents the part from the stalk, which includes the microtubule-binding domain, to the C-terminal part of the DHC (referred to as construct 2). Both constructs were expressed as myosin-fusion-proteins, so that the MWs are 180 kDa and 250 kDa, respectively.

First diffraction measurements of the crystals were performed at DESY in Hamburg (Max-Planck beamline), because the crystals were too small for in-house measurements. Unfortunately, we had to find out in Nov. 2009 that the crystals were even too small for DESY and did not show any diffraction. For many other DHC constructs no crystals could be obtained.

We applied for BioSAXS experiments at ID 14-3 to get information on why crystallization isn`t happening for most of the DHC constructs. Our goal was fo find optimum conditions for crystallization. Therefore BioSAXS experiments on eight DHC constructs were performed. A wide range of different buffer conditions was tested. But for none of the constructs, differing in size from 120 – 250 kDa, appropriate data could be obtained. The proteins were either too big or precipitated. We tend to the first assumption, since two of the DHC constructs formed crystals (see experiment report MX-1096) and could be concetrated to up to 10 mg/ml without precipitating.