



ESRF

Experiment title:

Crystallographic studies of type IV collagenases

**Experiment
number: LS-832**

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BM02

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Report:

The aim of the last visit was to characterize crystals of full length human collagenase, and in case of their suitability for a crystallographic structure determination, collect a native data set to as high resolution as possible.

Human collagenase crystallizes in two different space groups, and both crystal forms diffract to a resolution better than 3 Å. We could establish conditions for flash freezing and collected two complete native data sets at 100 K, one for each crystal form.

Crystal form I:

space group I4₁22 cell: a = 121 Å, c = 345 Å

statistics of the native data set:

resol: 2.65 35 549 unique reflections, multiplicity 9.6, completeness 97.7%

Rsym = 11.7%, I/s = 4.7

highest resolution shell: $R_{\text{sym}} = 40.1$ $I/s = 1$.

The data set is really a data set to about 2.9 \AA , in this shell we have R_{sym} of 26.1% with an I/s of 2.2.

Crystal form 2:

space group P212121 cell: $a = 117.7$ $b = 166.2$ $c = 170.1$

statistics for the native data set:

resol: 2.65 90 834 unique reflections multiplicity 1.6, completeness 93.7%

$R_{\text{sym}} = 9.3\%$, $I/s = 7.7$

highest resolution shell: $R_{\text{sym}} = 33.3\%$, $I/s = 2.4$

Provided sufficient synchrotron time will be available in the future, data collection on heavy metal derivatives will be the next step towards the structure determination of this enzyme.