

Cell-free protein expression for NMR

Workshop, 9-11 Sept 2014

Introduction

The Swedish NMR Centre will host a workshop on cell-free protein synthesis (CFPS) with focus on generating NMR samples. The idea is to illustrate the cost and time efficiency of protein NMR sample production by combining expression with CFPS and rapid data acquisition. Participants are requested to provide suitable plasmids with target proteins of interest which will be ^{13}C , ^{15}N -labeled in scale-up reactions. Depending on the outcome, a positive control and one or two samples will be chosen for overnight measurements on dedicated high-field spectrometers. The workshop is part of the NMR centre commitment in the SWEDSTRUCT program.

Tentative program

9 Sept

Registration, welcome introduction

Setup of cell-free expression

Seminar

Purification, buffer exchange

Workshop dinner

10 Sept

Purification, concentration

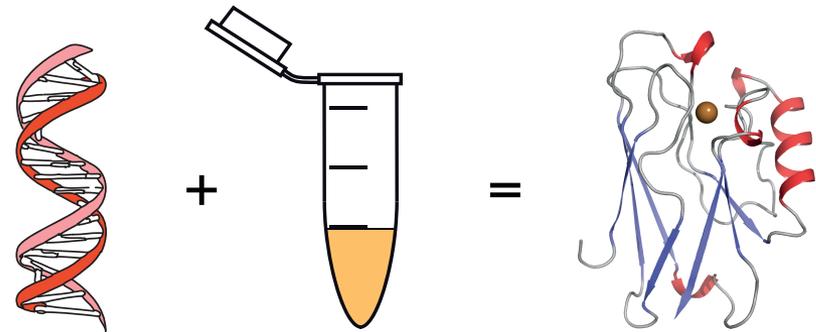
Seminar

NMR experiment setup of positive expression sample/-s

Seminar

11 Sept

Conclusion of workshop, check of results



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Requirements

One participant per lab with one target construct for expression. Optimally, several constructs are sent ahead of the workshop for small-scale testing of positive expression by NMR centre staff. Constructs *must* be His-tagged and cloned in a T7 promoter-controlled vector, preferably a CFPS-optimized vector (*e.g.* pEXP5NT) with a TEV-protease site to allow the possibility of tag removal. For the large-scale expression trials, participants will be required to prepare the sufficient amount of plasmid DNA according to instructions.

Costs

Unlike previously held workshops, we will not be able to cover accomodation or travel costs. Workshop lunches, dinner and all reagents needed will be covered, however.

Time and place

Swedish NMR Centre and the Lundberg laboratory, Gothenburg, Sweden, 9-11 Sept, 2014. Registration and welcome introduction at 10:00 AM Sept 9th.

Contact and application

Apply for the workshop by sending an e-mail to anders.pedersen@nmr.gu.se. Due to space limitations, the number of participants will be limited. Participants with potential own constructs will be prioritised. More information will be sent out to the registered participants regarding practicalities.