

Centeo TG40

Centeo TG40 is a portable, temperature-controlled microplate system that enables temperature optimization for vapour diffusion protein crystallization experiments using the sitting drop configuration.

TG40 is designed to allow an efficient crystallization process with the minimum amount of material. The crystallization is achieved by having a small droplet of protein with buffers and precipitant in a closed system with a separate reservoir containing the buffer and precipitant but in higher concentration.

Temperature optimization of crystallization is typically applied when crystallization at standard temperatures (4°C or 20°C) leads to crystals of insufficient quality. The TG40 system provides five rows of eight wells in a temperature controlled microplate and therefore it can accurately control and screen 5 different temperatures simultaneously, i.e. one temperature per row.

Technical specifications:

- ▶ **Instrument:** Centeo TG40



Standard SBS 9 mm pitch strip + detail of the microwell

▶ Features:

- At 20°C ambient the **temperature range is 4°C to 50°C degrees ± 0.5°C** (maximum of 19°C span within single experiment)
- Possibility to programmably change the temperature during the experiment
- **Sitting drop microwell configuration:** standard SBS 9mm pitch microwell which is compatible with 90% of protein crystallization workflows
- Microwell volume: 60 µl reagent well and 3 µl protein well

- ▶ **Operational mode:** machine is used as a part of the advanced optimization methods service. It may be operated by Core Facility worker or directly by users after special training (contact the CF staff for more information).

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- ▶ **Operating software and data evaluation:** Smart C3 Software for defining and analyzing of the temperature profiles (possibility to train people). Crystallization drops need to be evaluated separately.

Established methodologies and provided services:

- ▶ Temperature screening of crystallization conditions.

Sample requirements - importance of sample preparation

- ▶ General sample requirements are the same as for other crystallization experiments: (high purity >95% recommended, monodispersity, protein concentration >5 mg/ml). Samples that does not meet requirements are applicable, but the chance of crystal formation is reduced.
- ▶ Previous knowledge of potential crystallization conditions is necessary
- ▶ Reagent volume for one reservoir filling - **40 µl**
- ▶ Protein sample volume per well . up to **3 µl**

It is recommended to discuss the project and the details of the experiment (sample preparation, sample requirements) with the Core Facility members in advance.

CONTACTS:

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Instrument location

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