



Molecular
Dimensions

Fact Sheet

Morpheus Fusion
Crystal Screen

Incomplete factorial system for crystallization condition sampling

96 Independent Conditions: Find the Right Condition Faster!

Key Info

19 additive mixes integrate all reagents from Morpheus I, plus reagents from Morpheus II and Morpheus III

- 4 variables sampled simultaneously:
buffer system, precipitant mix, 2 additive mixes
- Same precipitant mixes and buffer system as Morpheus I
- Easy optimization of hits
- Suitable for soluble and membrane proteins
- Each condition contains a cryoprotectant
- Created at the MRC Laboratory of Molecular Biology Crystallization's Robotic Facility by Dr Fabrice Gorrec

Why Use it?

What is incomplete factorial sampling?

Incomplete factorial screens (center) remove the redundancy associated with crystallization conditions by increasing the chemical space sampled to increase the probability of a crystallization hit. These screens provide the best of both worlds: the systematic processing of grid screens, with the wide range of sparse matrices.

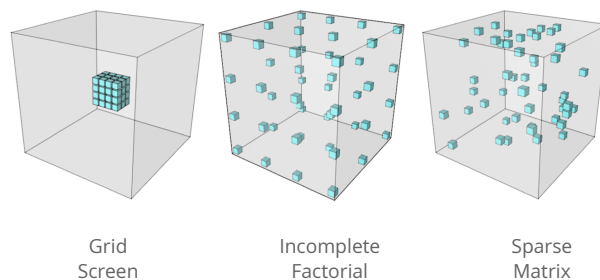
More info on how we select conditions in our detailed brochure at www.moleculardimensions.com.

Why are small molecules important?

Small molecules promote protein crystallization by:

- Forming lattice interactions between protein molecules (e.g. Sarrou et al., 2021).
- Stabilizing proteins
- Creating non-covalent crosslinks in protein crystals
- Enhancing initial crystal formation

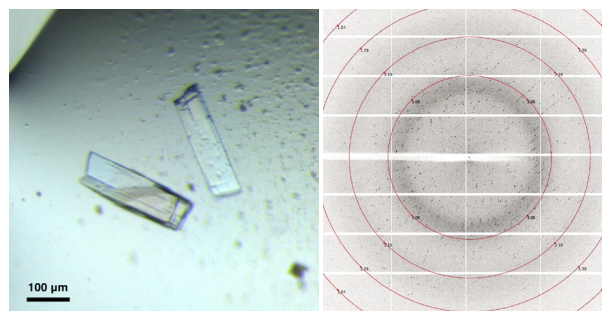
With several additives present in the screen solution, Morpheus Fusion increases the probability of hits.



Grid
Screen

Incomplete
Factorial

Sparse
Matrix



Crystals of a human retinoblastoma-binding protein, obtained during preliminary trials of Morpheus Fusion at the LMB, and the corresponding diffraction pattern (1.6 Å) collected at Diamond Light Source.

| Product Name | Product Code | Quantity |
|--|--------------|------------|
| Morpheus Fusion | MD1-129 | 96 x 10ml |
| Morpheus Fusion HT-96 | MD1-130 | 96 x 1ml |
| Morpheus Fusion FX-96 Pre-Filled Plate | MD1-130-FX | 96 x 100µl |

Supporting Materials: Brochure • SDS • Screen Formulations

Applications:

- Crystallization trials of new proteins
- Crystallization of membrane proteins
- Crystallization of large complexes/molecular assemblies



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