



Can we help with your three 'F's?



Molecular Dimensions is now exclusively selling



Polyvalan Crystallophore N°1



The only single compound that can solve three problems at once:



Forming – Growing a crystal capable of producing high quality diffraction data

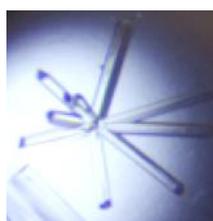
Finding – Identifying crystals in drops quickly and accurately

Phasing – No explanation needed?

Polyvalan Crystallophore No1 (patent pending) is a luminescent Terbium complex that is an effective nucleant and provides significant isomorphous and anomalous phasing power.

Forming

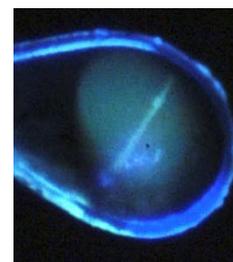
pb6 protein from T5 phage



- - - Crystallophore No 1 + + +

Acts as a nucleating agent and improves crystal quality of pre-existing hits

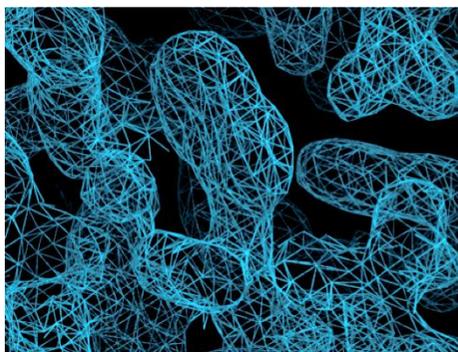
Finding



Luminesces strongly in the visible region under UV excitation making detecting crystals in drops and loops easy

Phasing

Terbium is a lanthanide and therefore has significant potential for use as an anomalous scatterer and in traditional isomorphous replacement. When the complex has been used as a nucleant, it is often found bound to the protein thus providing high quality phasing power.



P. horikoshii Protease 1 electron density from SAD phasing using the Terbium L_{III} absorption edge. Crystal grown in 10 mM and subsequently soaked in 100 mM Crystallophore N°1.

Europe & the rest of the world

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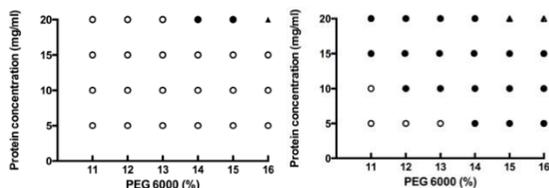
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Crystallization hits (black dots) plotted against increasing protein and precipitant concentration for pb6 from T5 phage.



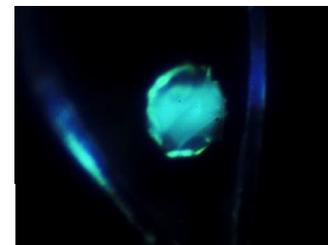
Improved crystal quality for ANC80 synthetic gene product: (left) native crystals and (right) with Crystallophore N°1.

Luminescence

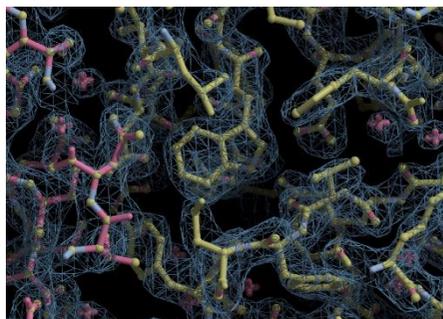
- Excitation possible between 250 and 380 nm.
- Emission in the visible range between 475 and 635 nm.
- Crystals glow with a green light and are easy to discern 'by eye':
 - Easily identify crystal hits in drops.
 - Simply locate crystal in loop when collecting data.



Crystals with Crystallophore N°1 in a drop.



Crystals with Crystallophore N°1 in a loop (ID29S, ESRF).



Electron density map for pb9 from T5 phage with SAD phases using Crystallophore N°1.

Improve your hit rate

- One vial contains enough Crystallophore N°1 to set 6 trays with 100 nl protein drops.
- Compatible with standard protein crystallization trial conditions:
 - Water soluble.
 - Does not precipitate or self-crystallize in 584 commercial screen conditions tested.
- Generates novel hits compared to protein alone
- Improves crystal quality when hit also occurs without Crystallophore N°1 (left).
- Doubles the number of crystal screening hits for many proteins, the effect can be much larger for some targets.
- Reduces protein AND precipitant concentration required to produce nucleation (left).

Phasing Facts

- Tb³⁺ has 62 electrons making it ideal for heavy atom phasing.
- Powerful tool for SAD and SIRAS phasing: Terbium's L_{III} absorption edge is around 1.6 Å (7.5 KeV, f'' ~ 30 electrons), with significant anomalous signal present far from the edge.
- Crystals grown in presence of our suggested concentration of 10 mM Crystallophore N°1, may be soaked in 10x more concentrated compound for optimum phasing.

Ordering Information

	Pack Size	Description
MD2-80	1 vial	Polyvalan Crystallophore N°1
MD2-81	5 vials	Polyvalan Crystallophore N°1 multipack

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