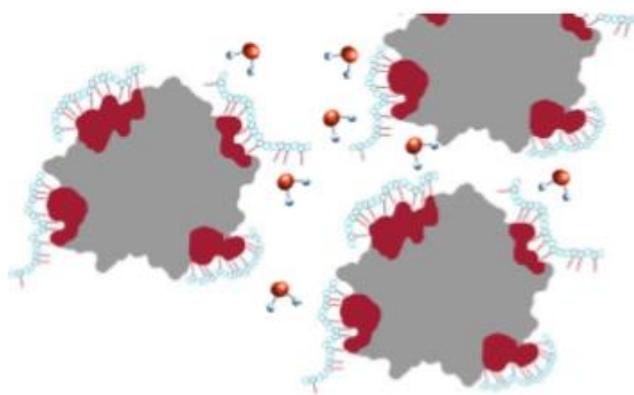


NVoy & X-Ray Crystallography

Release 1. © EXPEDEON. January 2018

INTRODUCTION

X-ray crystallography enables the study of protein structures at the atomic level, and can provide valuable information about protein conformation and active site interactions. This technique requires protein solutions which are stable at high concentration for prolonged periods during the crystallisation process. Poor solubility, stability or polydispersity will all prevent protein crystal formation.

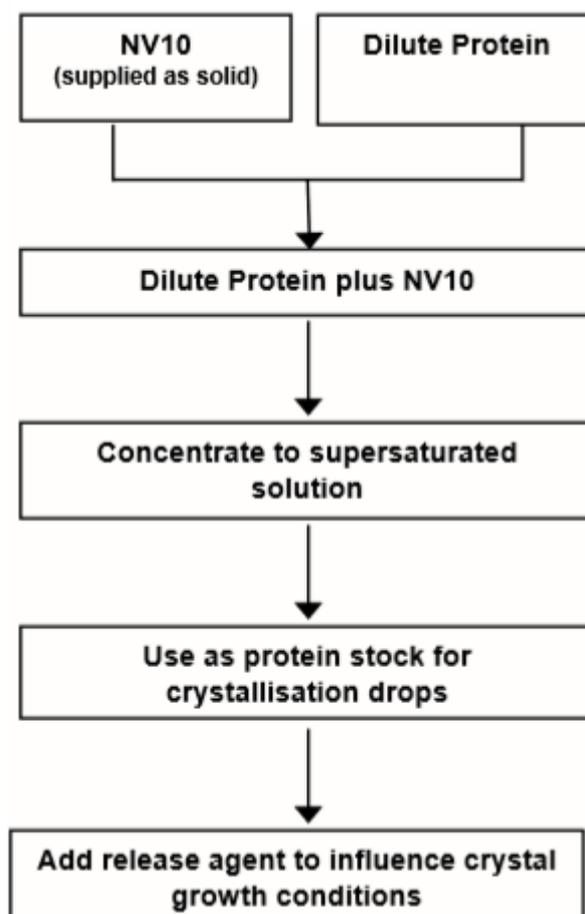


NVoy technology is a quantum leap in protein processing, production and analysis. It uses proprietary NV polymers to enhance protein solubility and stability through the formation of reversible multi-point complexes with proteins without altering their structure.

SUMMARY

NVoy polymer, NV10, can be used to protect, stabilise and improve the solubility of proteins by masking areas of surface exposed hydrophobicity. NVoy allows aggregation prone proteins to be concentrated and protected in solution, and is compatible with protein crystal growth.

METHODOLOGY



NV10 will co-concentrate with the target protein to:

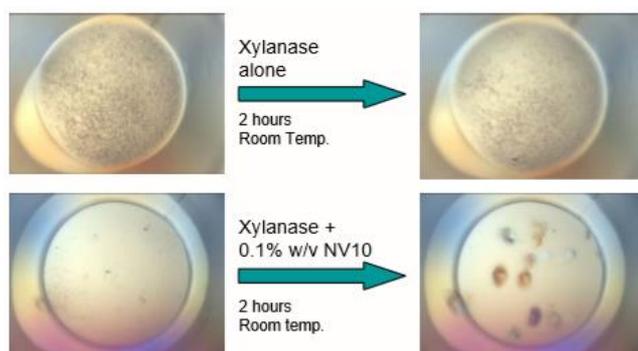
- minimise aggregation.
- minimise losses to hydrophobic surfaces.
- maintain protein stability.
- Enable the protein to be concentrated past the normal maximum solubility enabling different areas of phase space to be screened.

NV10 may act as a component of the supersaturated protein crystallisation stock to:

- slow crystal formation allowing more controlled crystal growth.
- enable further optimisation of crystal growth rates using titration of release agents.

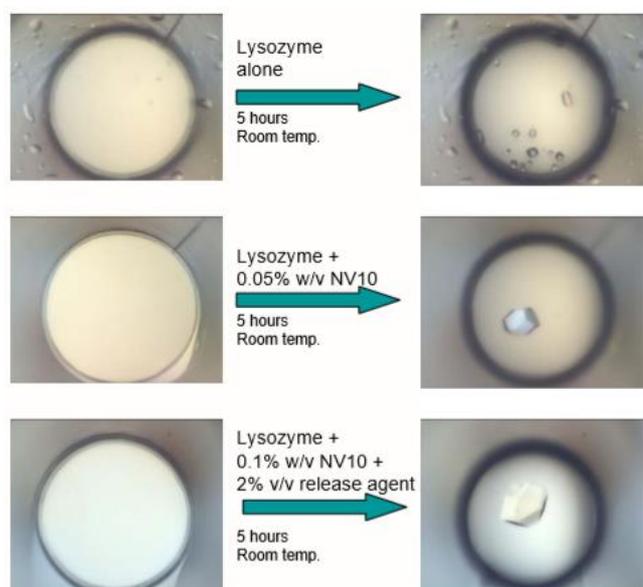
RESULTS

Crystallisation of xylanase under suboptimal conditions in sitting drops:



Xylanase crystallised well in the presence of NV10 (0.1% w/v).

Crystallisation of lysozyme under suboptimal conditions in sitting drops:



Lysozyme could be crystallised under suboptimal conditions, both in the presence of NV10 alone and with the addition of release agent.

Expedeon's NVoy technology does not inhibit crystal growth, and can be used in preparation of the protein to enable purification and concentration of an aggregation-prone or unstable protein. NV10 can also be added into crystallisation buffers to maintain stability over the crystallisation period, or to enable manipulation of binding and release conditions.

TECHNICAL SUPPORT

For technical enquiries get in touch with our technical support team at: technical.enquiries@expedeon.com

For further information see our website: www.expedeon.com