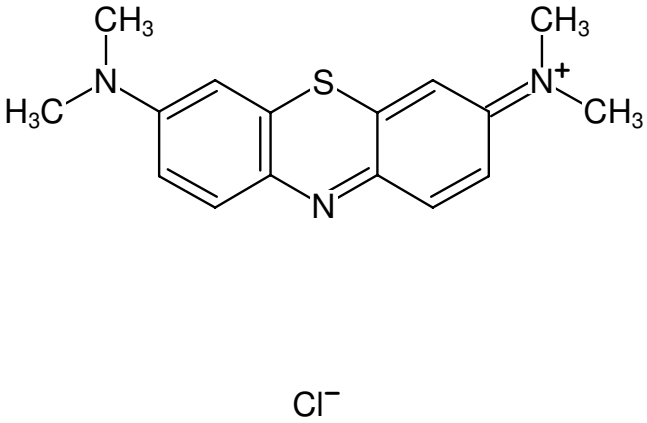
DATA SHEET

Jena Bioscience

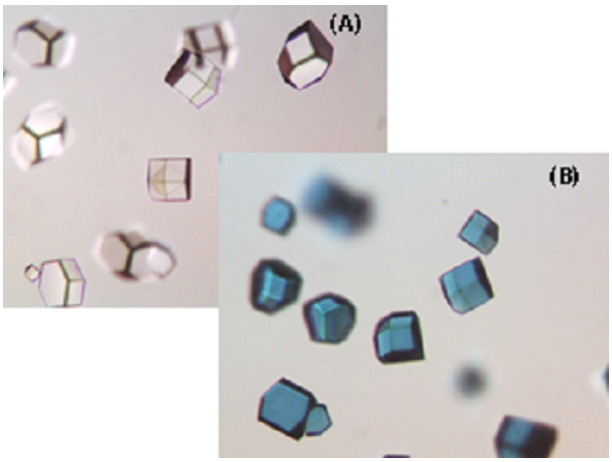
JBS True Blue

Methylene Blue

Cat. No.	Amount
CO-301	300 µl



Structural formula of JBS True Blue



Unstained (A) and stained (B) protein crystals

For general laboratory use.

Shipping: shipped at ambient temperature

Storage Conditions: store at ambient temperature

Shelf Life: 12 months

Molecular Formula: $C_{16}H_{18}ClN_3S * H_2O$

Molecular Weight: 319.85 g/mol (anhydrous)

CAS#: 61-73-4

EC number: 200-515-2

Concentration: 4 mM

Applications:
JBS True Blue is a crystal dye used to stain macromolecular crystals, i.e. protein, peptide and nucleic acid crystals in order to differentiate them from small molecules and salt crystals.

Description:
Crystallization screening with high concentrations of precipitant and salt may lead to the formation of salt crystals. It is quite difficult to make a distinction between these false positives and true protein crystals.

Staining of crystals with appropriate dyes is a very straightforward method to differentiate between macromolecular crystals and salt crystals [1].

Protein and salt crystals differ substantially in their solvent content. Small crystal dyes, like JBS True Blue, are able to permeate the solvent channels of a protein, thus coloring the protein blue. In contrast, salt crystals are tightly packed and do not possess large solvent channels. They will therefore remain colourless.

Usage:
Simply add 0.5 µl of JBS True Blue to the crystallization drop containing the crystals of interest.

Coloring Time:
JBS True Blue colors protein crystals after a few minutes. Even if the color of the solution is only faintly blue under the microscope, proteins will be stained within 5-15 min.
Very occasionally, it has been reported that protein crystals did not absorb crystal dyes [2].

Safety Information:
Methylene Blue is a harmful substance if swallowed. Work carefully and wear gloves when handling the dye. Under fire conditions it emits toxic fumes.

JBS True Blue

Methylene Blue

Selected References:
[1] Wilkosz *et al.* (1995) Preliminary characterization of EcoRI-DNA co-crystals: incomplete factorial design of oligonucleotide sequences. *Acta Cryst. D* **51**:938.

[2] Eckert *et al.* (2003) Crystallization and preliminary X-ray analysis of Alicyclobacillus acidocaldarius endoglucanase CelA. *Acta Cryst. D* **59**:139.