Optimising eYFP imaging conditions for use in Single Molecule Localisation Microscopy

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Some fluorescent proteins are difficult to express in certain organisms. Enhanced yellow fluorescent proteins (eYFP) is a fluorescent protein that is a derivative of green fluorescent protein (GFP) hence usually does not have expression problems in systems expressing GFP. eYFP has been previously demonstrated as a label suitable for localisation microscopy. [1]

Here we present data on imaging an eYFP fusion protein in a bacterial sample where we tested the effect of different buffers, all previously described as STORM buffers [2, 3, 4]. We demonstrate how variations in image analysis settings can influence decision on suitable buffer conditions. Finally we show how changes in the optical configuration in combination with optimised buffer conditions enable us to image eYFP in the bacterial sample successfully.

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