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Co-crystal Structures with No Single Crystals. Colin C. Seaton¹, P.T. Gavan¹, P. Marshall², N. Blagden¹,
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A crystal structure determined by single crystal X-ray diffraction is the main source for insight into structure-property relationships for a material. However in many cases, single crystals of sufficient quality and size are unable to be obtained and so recourse to other techniques such as structure determination from powder diffraction (SDPD) [1] or structure prediction [2] is required. These techniques have been applied to a range of molecular systems of increasing complexity, but have rarely been utilised in the investigation of co-crystals [3] due to the inherent difficulty of such systems.

Here we report on the structural investigation into a sulfathiazole:glucose co-crystal, synthesised as part of a current investigation into pharmaceutical co-crystal systems [4], using a number of techniques including; SDPD, molecular modelling and solid state NMR.

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[4] P.T. Gavan, N. Blagden, C.C. Seaton, I.M. Grimsey, P. Marshall (2005), *CrystEngComm.*, submitted.