# Screening Procedures and Selection of the best Solid-State Form of a Drug Subsstance

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The presentation at PhandTA-8 was focused on high-throughput experimentation and included a discussion of HTS technologies in comparison with conventional laboratory scale experimentation. Evaluation of the most suitable solid-state form of a new drug substance in a timely and cost effective manner can still be challenging problem of the pharmaceutical industry.

There is of course, a great diversity of all existing substances in development. The development of a given compound in one case can be very straightforward because no substantial difficulties arise, and in another case the developability can even become questionable. Latter situation is typically encountered in cases when a drug substance candidate apparently cannot be obtained in a crystalline form.

Solvias AG has improved it's new proprietary HTS technologies [1-4] tailored to the needs of chemical and pharmaceutical development of new drug substances. These technologies are particularly useful for the discovery and preparation of new crystalline salts, polymorphs, solvates and hydrates, and recently we have extended the screening processes to crystallization of amorphous compounds and co-crystals.

The substance availability for new compounds in development is generally limited and therefore one important objective is to develop screening processes with high "hit"-rates. 50 to 500 experiments each conducted with about 3 to 5 mg should be sufficient for a whole screening program either for crystalline material, polymorphs, salts, or co-crystals.
For this reason Solvias has developed four different types of screening procedures specially designed for polymorphs, salts, crystallization of amorphous compounds, and co-crystals.

This presentation discusses the different screening procedures and their impact on the development of drug substances with inherent challenges regarding their solid-state properties.

References:
[1] Rolf Hilfiker, Editor; *Polymorphism in the Pharmaceutical Industry*, Wiley, 2006
[2] Fritz Blatter et. al.; *WIPO-PCT Publication, WO 2005/037424.*
[3] Martin Szelagiewicz et. al.; *WIPO-PCT Publication, WO 2004/045769.*
[4] Fritz Blatter et. al.; *WIPO-PCT Publication, WO 2003/026797.*