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Solid State Structures and Properties of Maxipost Prodrug Crystalline Forms. Shan-Ming Kuang, Dedong Wu, David Provencal, Chung-Pin Chen, Yadagiri Pendri, Yan Chen, Sing-Yuen Sit, Qi Gao, Bristol-Myers Squibb Pharmaceutical Research Institute, Wallingford, CT 06492 USA.

Characterization of solid-state properties is of great importance to the success of chemical and formulation development of a drug candidate, while knowledge of solid-state structures is crucial to a better understanding of what contribute to these properties. Most drugs are administered in crystalline form for reasons such as purity, stability and ease of handling during the various stages of drug development. The Food and Drug Administration approves such drugs only in a specific crystalline form since polymorphs, solvates or hydrates may differ significantly in physical properties and thus affect drug performance.

Maxipost was developed as a neuroprotective agent for stroke. Due to the low aqueous solubility, great efforts were made to produce a water-soluble phosphate prodrug that would permit dosing to achieve μM levels of MaxiPost in brain. The main issue of the phosphate prodrug was its poor stability; therefore, salt formation approaches were employed. This poster will describe the crystal structures and solid-state properties of some crystalline salt forms and how a stable solid form was finally achieved.