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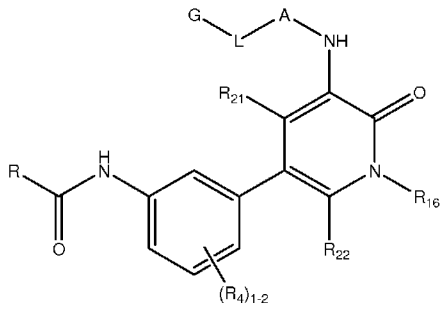
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(I)

(57) Abstract: At least one chemical entity chosen from compounds of Formula 1 and pharmaceutically acceptable salts, solvates, chelates, non-covalent complexes, prodrugs, and mixtures thereof is described herein. Pharmaceutical compositions comprising at least one chemical entity of the invention, together with at least one pharmaceutically acceptable vehicle chosen from carriers adjuvants, and excipients, are described. Methods of treating patients suffering from certain diseases responsive to inhibition of Btk activity and/or B-cell activity are described. Methods for determining the presence of Btk in a sample are described.

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