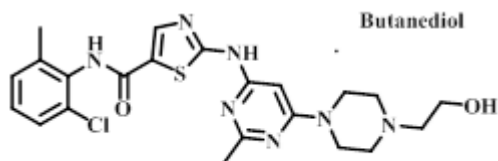


CLAIMS

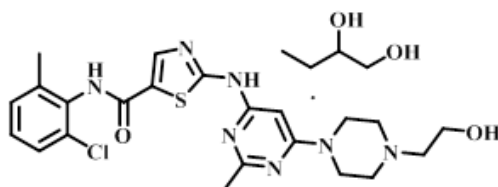
1. A crystalline dasatinib butanediol solvate, of **Formula Ic (or) Id (or) Ie (or) Ig**



Formula Ic (or) Id (or) Ie (or) Ig

- 5 wherein, Butanediol is selected from (±)-1, 2-Butanediol (Ic) or (R)-1, 2-Butanediol (Id) or (S)-1, 2-Butanediol (Ie) or (±)-2, 3-Butanediol (Ig).

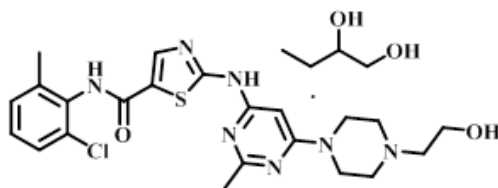
2. The crystalline dasatinib (±)-1,2-Butanediol solvate of **Formula Ic** of claim 2



Formula Ic

- 10 which is characterised by XPRD pattern comprising peaks at approximately 5.61±0.2, 10.99±0.2, 11.22±0.2 and 24.11±0.2 degrees 2θ.

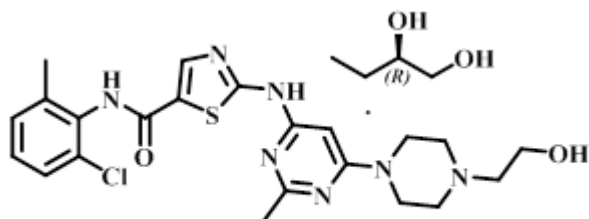
3. The crystalline dasatinib (±)-1,2-Butanediol solvate of **Formula Ic** of claim 2



Formula Ic

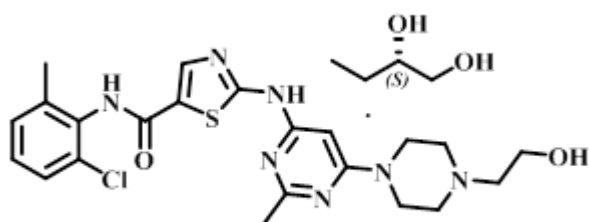
- which is characterised by differential scanning calorimetry thermogram having peaks approximately at 169 & 285 °C.

- 15 4. The crystalline dasatinib (R) - 1,2-Butanediol solvate of **Formula Id** of claim 2

**Formula Id**

which is characterised by XPRD pattern comprising peaks at approximately 5.69 ± 0.2 , 11.30 ± 0.2 , 12.62 ± 0.2 and 17.35 ± 0.2 degrees 2θ .

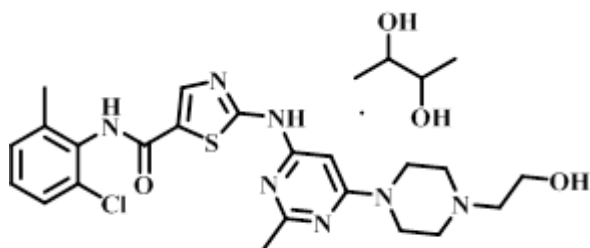
5. The crystalline dasatinib (S) -1,2-Butanediol solvate of **Formula Ie** of claim 2

**Formula Ie**

5

which is characterised by an XPRD pattern comprising peaks at approximately 5.56 ± 0.2 , 11.18 ± 0.2 , 16.81 ± 0.2 and 17.12 ± 0.2 degrees 2θ .

6. The crystalline dasatinib ($\pm$) - 2, 3-Butanediol solvate of **Formula Ig** of claim 2

**Formula Ig**

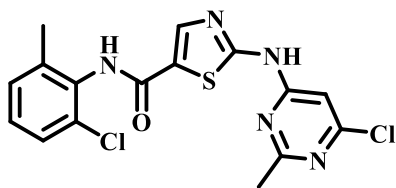
10

which is characterised by an XPRD pattern comprising peaks at approximately 5.67 ± 0.2 , 11.35 ± 0.2 , 17.06 ± 0.2 and 17.29 ± 0.2 degrees 2θ .

7. A process for the preparation of a crystalline Dasatinib-Butanediol solvate of **Formula Ic (or) Id (or) Ie (or) Ig** according to any one of claims 1-6, comprising the following steps,

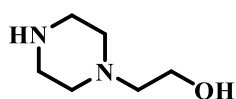
15

treating the Dichloro intermediate of **Formula II**



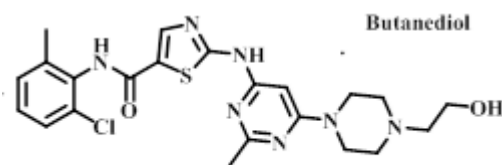
Formula II

with 2-(piperazin-1-yl) ethan-1-ol of **Formula III**



Formula III

5 in a suitable organic solvent, a Butanediol and a suitable organic base, to obtain corresponding a novel crystalline Dasatinib-Butanediol solvate of **Formula Ic (or) Id (or) Ig**,



Formula Ic (or) Id (or) Ig

Wherein, Butanediol = ($\pm$) - 1, 2-Butane diol or (R)-1, 2-Butanediol or (S)-1, 2-Butanediol or ($\pm$)-2, 3-Butanediol and

10 **Formula Ic** = Dasatinib-($\pm$) -1,2-Butane diol solvate

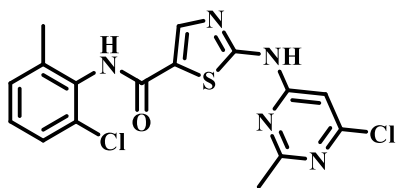
Formula Id = Dasatinib-(R) -1,2-Butanediol solvate

Formula Ie = Dasatinib-(S) -1,2-Butanediol solvate

Formula Ig = Dasatinib-($\pm$) -2,3-Butane diol solvate.

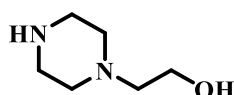
8. A process for the preparation of crystalline Dasatinib-Butanediol solvate of **Formula Ic (or) Id (or) Ie (or) Ig** according to any one of claims 1-6, comprising the following steps,

15 treating the Dichloro intermediate of **Formula II**



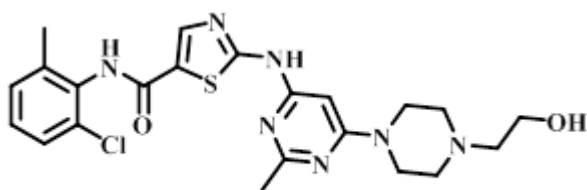
Formula II

with 2-(piperazin-1-yl) ethan-1-ol of **Formula III**



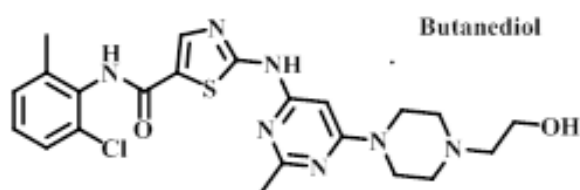
Formula III

in the presence of suitable organic solvent and a suitable organic base at a suitable temperature to obtain **Formula I** (*In-situ*)



Formula I

treating the mass containing the **Formula I** with a suitable Butanediol, to obtain crystalline Dasatinib-Butanediol solvate of **Formula Ic (or) Id (or) Ie (or) Ig**,

**Formula Ic (or) Id (or) Ie (or) Ig**

Formula Ic = Dasatinib-(±) - 1, 2-Butane diol solvate

Formula Id = Dasatinib-(R) - 1, 2-Butanediol solvate

Formula Ie = Dasatinib-(S) - 1, 2-Butanediol solvate

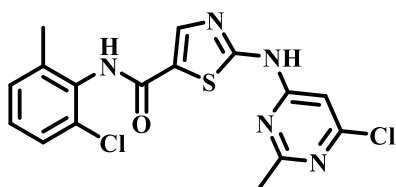
Formula Ig = Dasatinib-(±) - 2, 3-Butane diol solvate.

9. The process of claim 7 or 8, wherein suitable organic base is selected from the group consisting of tertiary amine, preferably *N,N*-Diisopropylethylamine or Triethylamine, more preferably Triethylamine.

10. The process of claim 7 or 8, a suitable organic solvent is selected from, Dimethyl sulfoxide, *N,N*-Dimethyl acetamide, preferably *N,N*-Dimethyl acetamide.

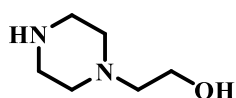
11. A process for the preparation of Amorphous Dasatinib, comprising the following steps,

5 treating the Dichloro intermediate of **Formula II**



Formula II

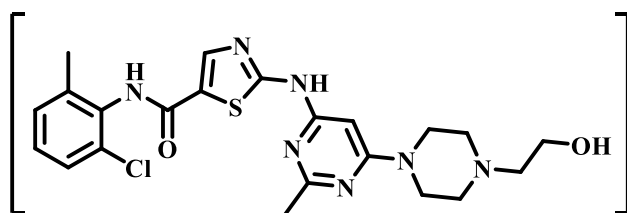
with 2-(piperazin-1-yl) ethan-1-ol of **Formula III**



Formula III

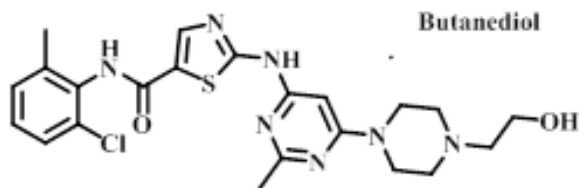
in the presence of a suitable organic solvent and a suitable organic base to obtain Dasatinib of **Formula I** (*in-situ*)

10



Formula I (*In-situ*)

followed by treating the reaction mass with a suitable Butanediol to obtain a crystalline Dasatinib-Butanediol solvate of **Formula Ic (or) Id (or) Ie (or) Ig** according to any one of claims 1-6,



Formula Ic (or) Id (or) Ie (or) Ig

Formula Ic = Dasatinib-(±) - 1, 2-Butane diol solvate

Formula Id = Dasatinib-(R) - 1, 2-Butanediol solvate

Formula Ie = Dasatinib-(S) - 1, 2-Butanediol solvate

Formula Ig = Dasatinib-(±) - 2, 3-Butane diol solvate.

5

treating crystalline Dasatinib-Butanediol solvate of **Formula Ic (or) Id (or) Ie (or) Ig**, with citric acid solution followed by treating with Aqueous Ammonia solution to obtain Amorphous Dasatinib.

12. The process for the preparation of Amorphous Dasatinib of claim 11, suitable organic solvent is selected from the group consisting of Sulfoxide, Amide solvents preferably, Dimethyl sulfoxide, *N,N*-Dimethyl acetamide.
13. The process for the preparation of Amorphous Dasatinib of claim 11, suitable organic base is selected from the group consisting of tertiary amine preferably, *N,N*-Diisopropylethylamine, Triethylamine.

10