CLAIMS

1. Co-crystal of Ketoprofen Lysine (Form 4) characterized by having an X ray diffraction pattern with characteristic peaks at 13.6; 16.0; 16.5; 17.3; 19.1; 19.4; 20.5; 21.8; 22.9; 23.5; 24.9; 25.9; 27.6° 2theta ± 0.20 degrees.

2. The co-crystal according to claim 1, characterized by having a X ray diffraction pattern as represented in Figure 2.

3. The co-crystal according to claim 1 or 2, wherein the molecular ratio between Ketoprofen and Lysine is 1:1.

4. The co-crystal according to any one of claims 1 to 3, characterized by an endothermic peak at 158.8°C ± 2°C measured by DSC analysis,
wherein the DSC analysis is carried out using a DSC Mettler Toledo DSC1 according to the following temperature data and calorimetric data:

Temperature data

Temperature range	25°C to 320 ºC
Temperature accuracy	± 0.2 K
Temperature precision	± 0.02 K
Heating rate	10 K/min
Cooling time	5 min (100°C … 0ºC)

Calorimetric Data

Sensor type	FRS5
Sensor material	Ceramic
Number of thermocouples	56
Signal time constant	1.8 s
Indium peak (height to width)	17
TAWN resolution	0.12
Sensitivity	11.9
Resolution	0.04 µW
Digital resolution	16.8 million points

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5. The co-crystal according to any one of claims 1 to 4, characterized by a particle size distribution wherein D90 is lower than 220 µm, preferably lower than 150 µm, measured according to the method reported in the description.

6. A pharmaceutical composition comprising the co-crystal of Ketoprofen Lysine (Form 4) of any one of the preceding claims and at least a physiologically acceptable excipient.

7. The pharmaceutical composition according to claim 6, wherein said excipients are selected from the group consisting of: povidone, colloidal silica, hydroxypropylmethylcellulose, eudragit EPO, sodium dodecyl sulfate, stearic acid, magnesium stearate, aspartame, mannitol, xylitol, talc, flavors.

8. The pharmaceutical composition of claim 6 or 7, wherein said pharmaceutical composition is in solid granulate form.

9. A pharmaceutical composition comprising the co-crystal of Ketoprofen Lysine (Form 4) according to any one of claims 1 to 5 in combination with at least another pharmaceutically active ingredient.

10. The co-crystal of Ketoprofen Lysine (Form 4) of any one of claims 1 to 5 or the pharmaceutical composition of any one of claims 6 to 9 for use as a medicament.

11. Use of the co-crystal of Ketoprofen Lysine (Form 4) of any one of claims 1 to 5 or the pharmaceutical composition of any one of claims 6 to 9 in the manufacture of a medicament for the treatment of pain or inflammation diseases.

12. The use according to claim 11, wherein said pain is selected from the group consisting of: acute pain, headache, toothache, menstrual pain, muscle pain, osteoarticular pain.

13. The use according to claim 11, wherein said inflammation diseases is selected from the group consisting of rheumatitis disease.

14. A process for the preparation of the co-crystal of Ketoprofen Lysine (Form 4) of any one of claims 1 to 5, wherein said process comprises the following steps:
a) preparing a non-saturated solution of Ketoprofen in a solvent, wherein the solvent is 2-methyl -1- propanol;
b) mixing the non-saturated solution of Ketoprofen with solid lysine to provide an admixture.

15. The process according to claim 14, wherein the non-saturated solution of step a) has a concentration of Ketoprofen from 50 to 150 mg/ml, preferably from 70 to 120 mg/m, more preferably from 80 to 100 mg/ml.

16. The process according to claim 14 or 15 wherein the molar ratio Ketoprofen : Lysine is from 1.5:1 to 3.5:1, more preferably from 2:1 to 3:1.

17. The process according to any one of claims 14 to 16, wherein the admixture obtained at step b) has a water content from 0.3 to 1.5% (v/v), more preferably from 0.8% to 1.1 % (v/v).