**Supplementary Information**

**Hydrogen bonding in Amorphous Indomethacin**

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**Figure S1.** 1H-13C CP-MAS (nr = 20 kHz) ssNMR spectra for (A) amorphous indomethacin, (B) gamma indomethacin, and (C) alpha indomethacin.



**Figure S2.** 1H-13C CP-MAS (nr = 20 kHz) ssNMR spectra for amorphous (A) indomethacin, and (B) d1-indomethacin.



**Figure S3.** FT-IR spectra of Indomethacin polymorphs from 650 cm-1to 3300 cm-1 (a) and the carbonyl stretching region from 1600 cm-1 to 1800 cm-1 (b). The carbonyl region contains assignments of characteristic stretching bands for each polymorph. These assignments are made in reference to the work of Van Duong, et al.1 ATR-FTIR spectra were collected from 650 cm−1 to 4000 cm−1 using an Agilent Cary 630 FTIR spectrometer with a diamond ATR. Samples were collected using 128 background and 128 sample scans with a resolution of 2 cm−1. All samples were run as a powder at room temperature (293°C) and pressed in order to have consistent contact with the diamond ATR.



**Figure S4.** FT-IR spectra of deuterated vs. natural abundance gamma Indomethacin from 650 cm-1to 3300 cm-1 (a) and in the carbonyl stretching region from 1600 cm-1 to 1800 cm-1 (b).



**Figure S5.** FT-IR spectra of deuterated vs. natural abundance amorphous Indomethacin from 650 cm-1to 3300 cm-1 (a) and in the carbonyl stretching region from 1600 cm-1 to 1800 cm-1 (b).

**Supplementary References.**

[S1] Van Duong, T, et al. Polymorphism of indomethacin in semicrystalline dispersions: formation, transformation, and segregation. Mol Pharm, 2018. 15(3): p. 1037-1051.