Comparative analysis of the thermal decomposition kinetics of β-cyclodextrin inclusion complexes with anabasine at different heating rates

Zeynolla Muldakhmetov, Serik Fazylov, Oralgazy Nurkenov, Meiram Burkeev, Akmaral Sarsenbekova, Arstan Gazaliev, Aigul Muratbekova and Santay Davrenbekov
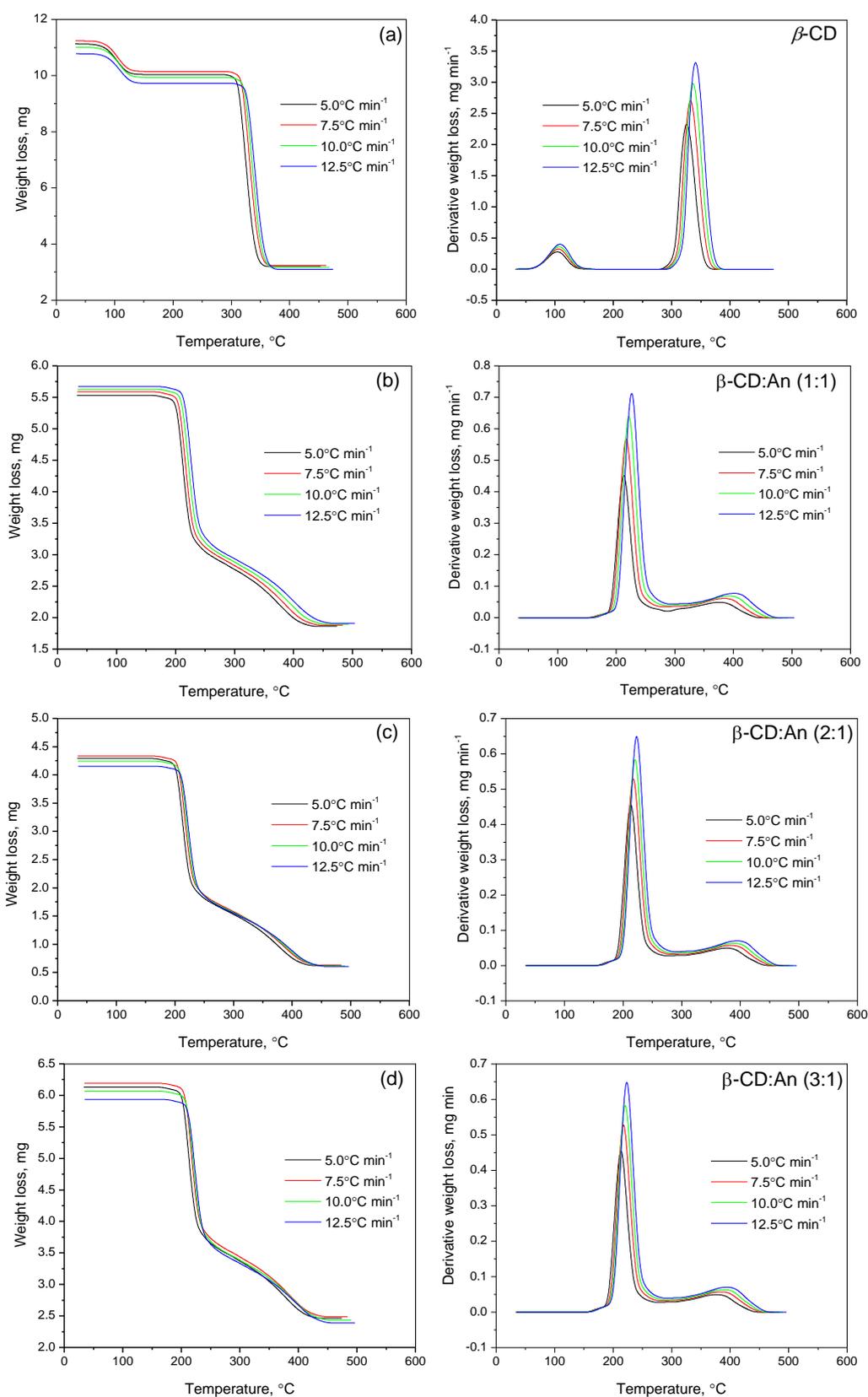
Figure S1 Temperature dependences of weight change, rate of weight change for β-CD (a) and inclusion complex β-CD–An (1:1) (b), β-CD–An (2:1) (c) and β-CD–An (3:1) (d) (under nitrogen atmosphere).
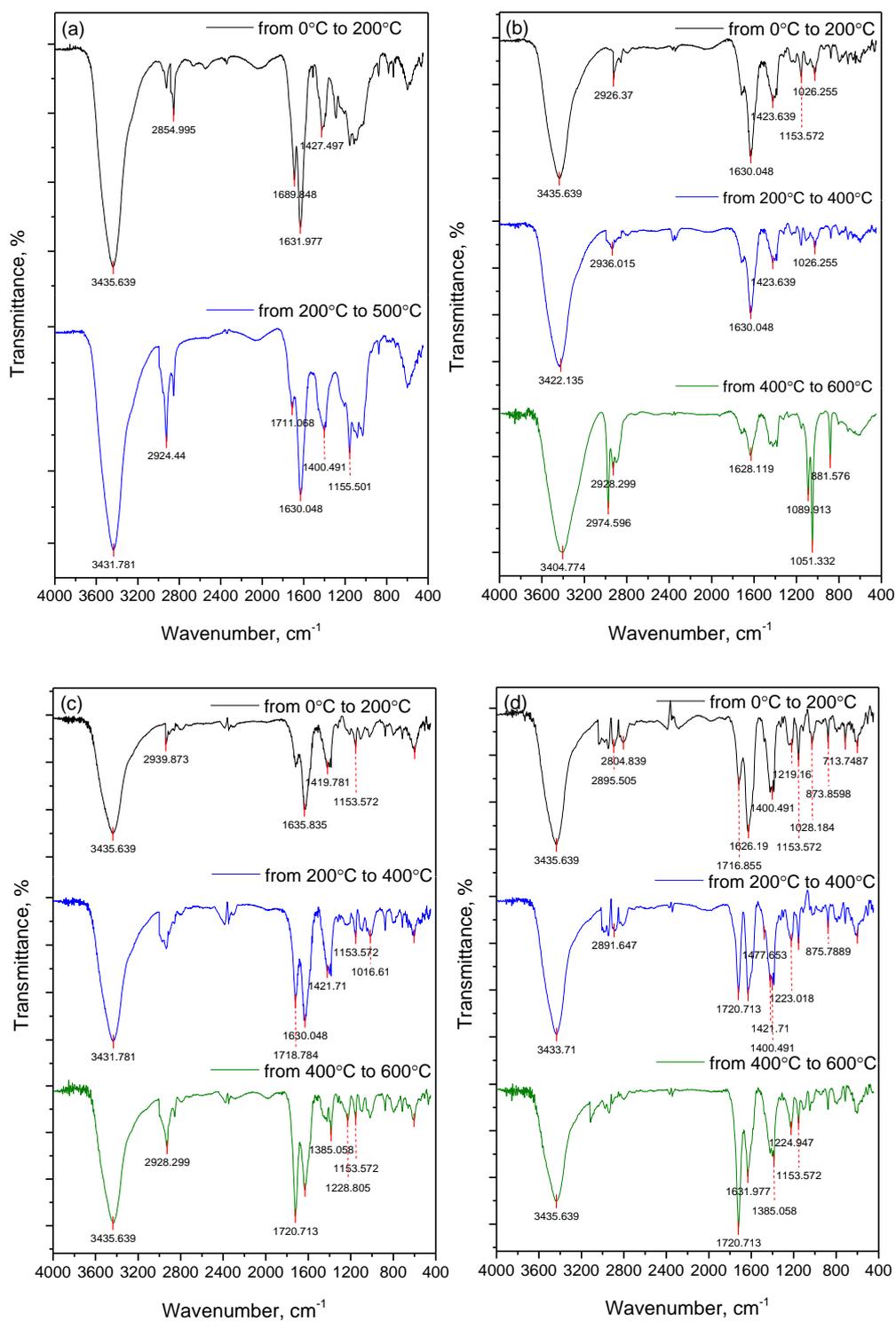
Figure S2 IR spectra of decomposition products of β-CD (a) and inclusion complex β-CD–An (1:1) (b), β-CD–An (2:1) (c) and β-CD–An (3:1) (d) fixed at temperature from 0 to 600°C.
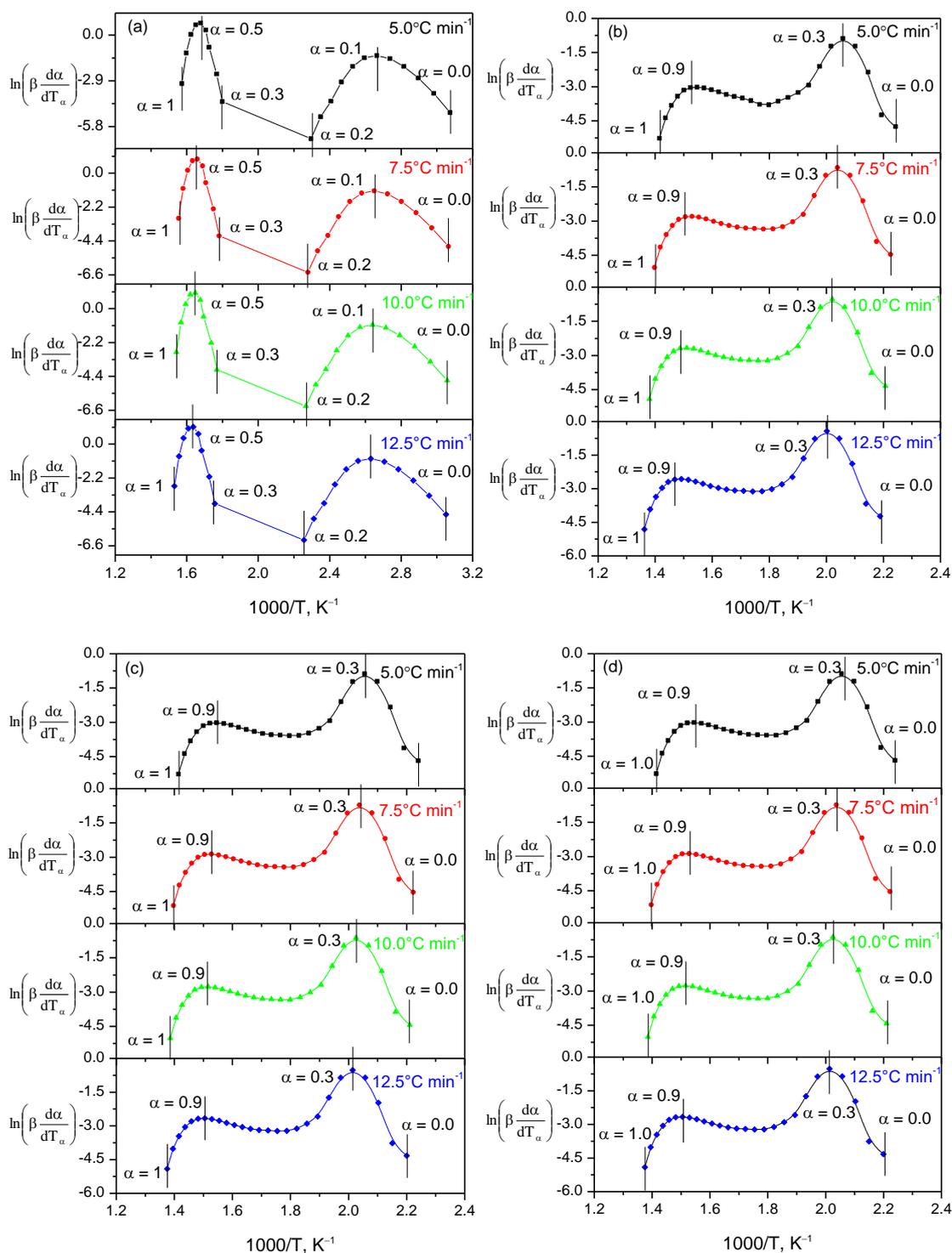
Figure S3 Linear fit of thermogravimetric data for β-CD (a) and inclusion complex β-CD–An (1:1) (b), β-CD–An (2:1) (c) and β-CD–An (3:1) (d) at various heating rates (from 5.0 to 12.5 ℃) in a nitrogen atmosphere according to the FR method.
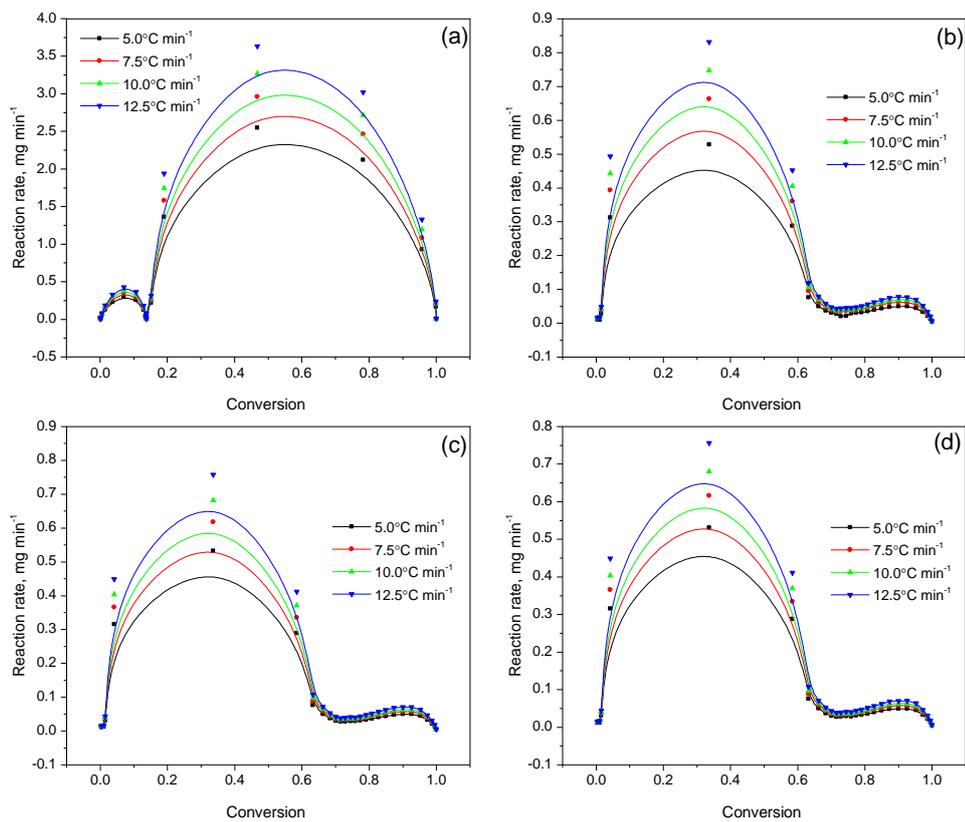
Figure S4 Family of curves of reaction rate (dα/dT) versus degree of conversion (α) for β-CD (a) and inclusion complex β-CD–An (1:1) (b), β-CD–An (2:1) (c) and β-CD–An (3:1) (d).
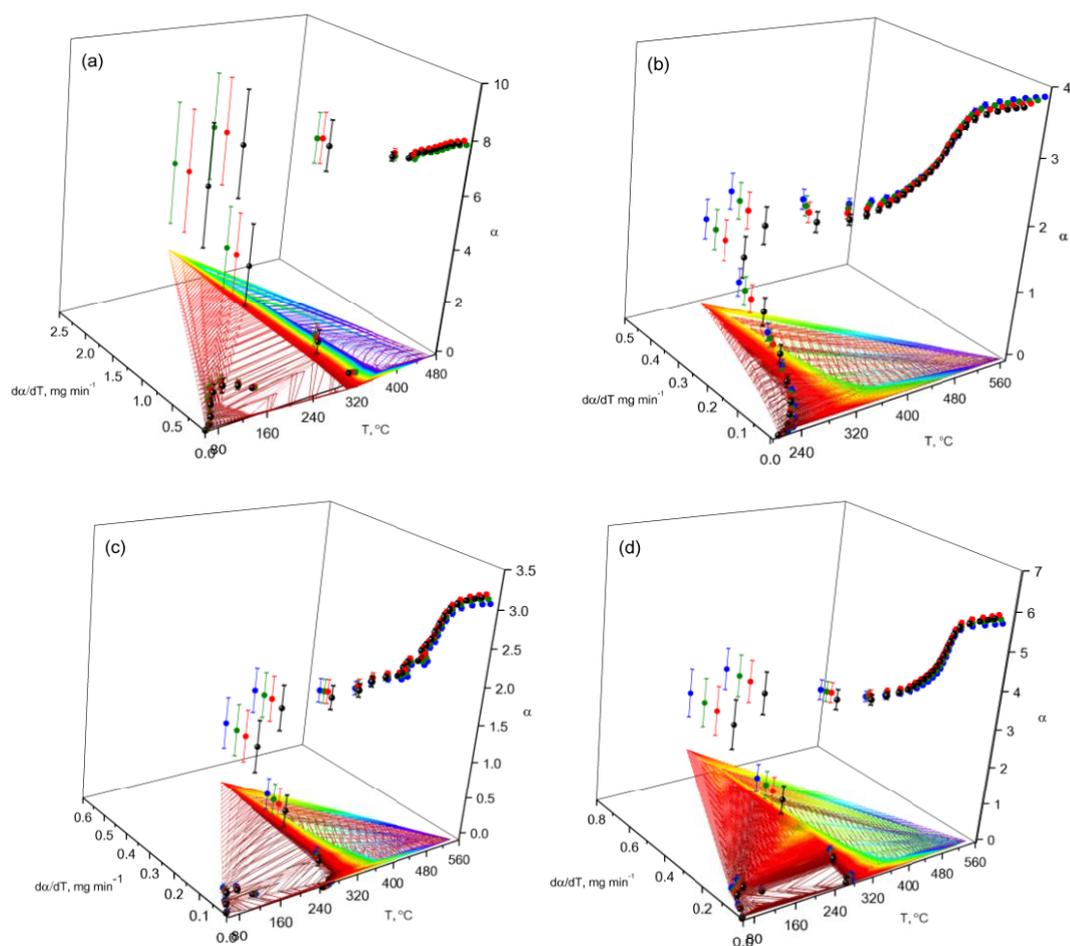
Figure S5 Surface of β-CD (a) and inclusion complex of β-CD–An (1:1) (b), β-CD–An (2:1) (c) and β-CD–An (3:1) (d) in three-dimensional space: the dependence of the reaction rate ($\beta \cdot d\alpha/dT$) on temperature (T) and degree of conversion (α).