Supplementary Information

Structure of Spherulites in Insulin, β-Lactoglobulin and Amyloid β

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Figure S1

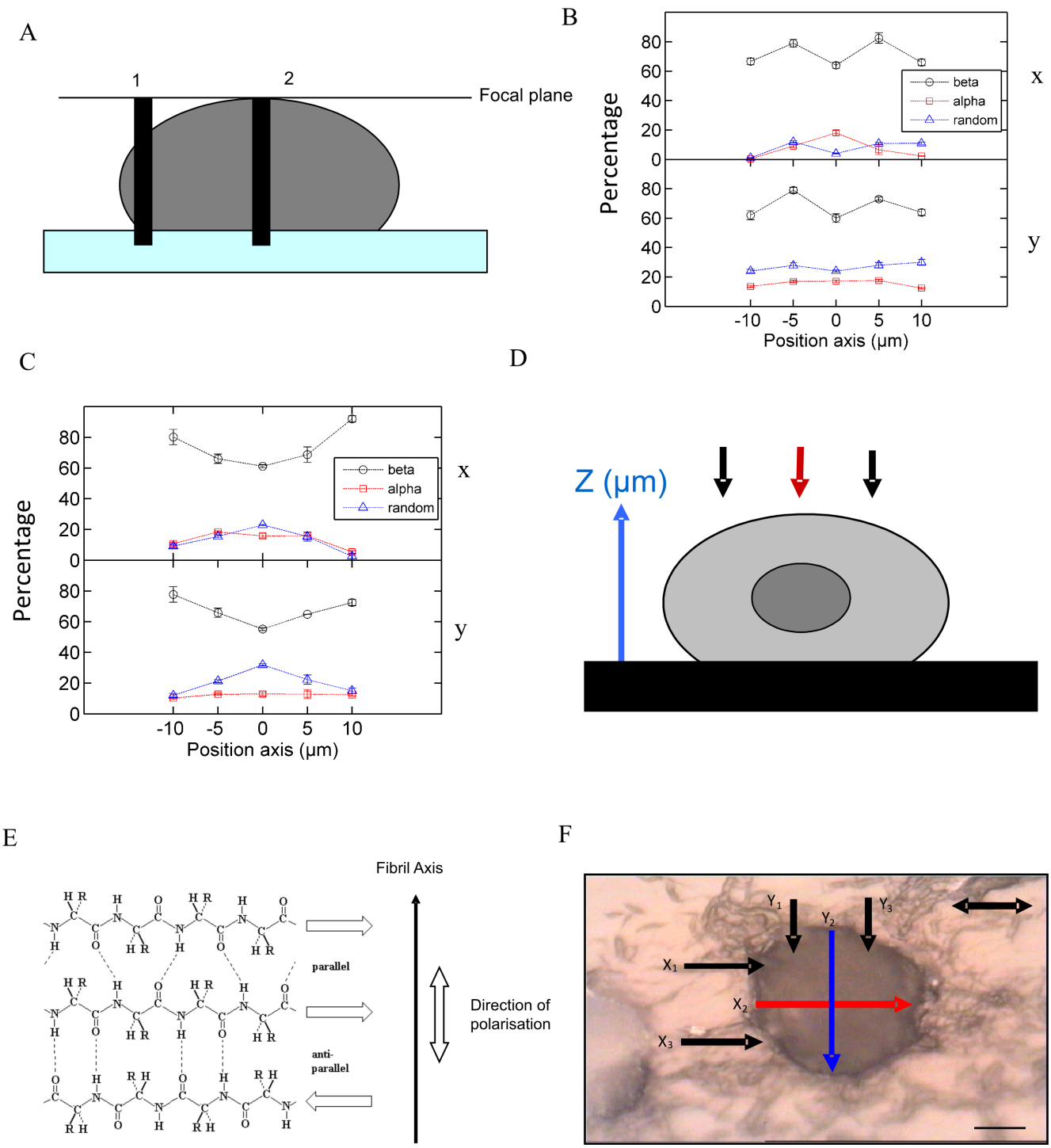
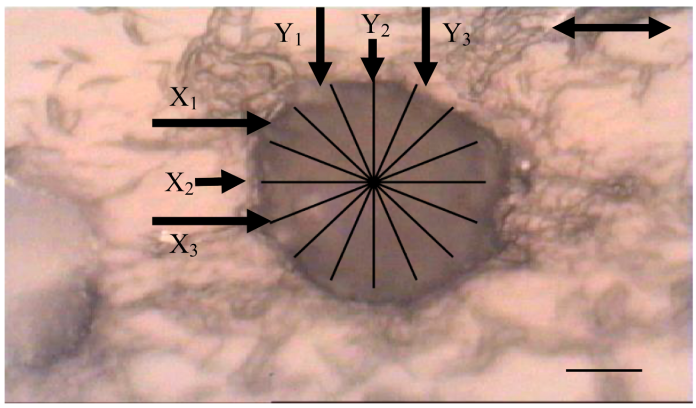

A
1
2
Focal plane
B
Percentage
beta
alpha
random
x
y
Position axis (μm)
C
Percentage
beta
alpha
random
x
y
Position axis (μm)
D
Z (μm)
E
Fibril Axis
parallel
anti-
parallel
Direction of
polarisation
F
Y1
Y2
Y3
X1
X2
X3

Figure S2

A



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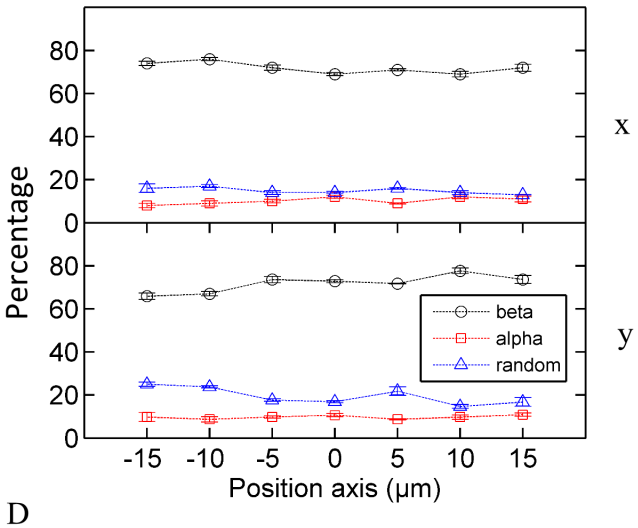

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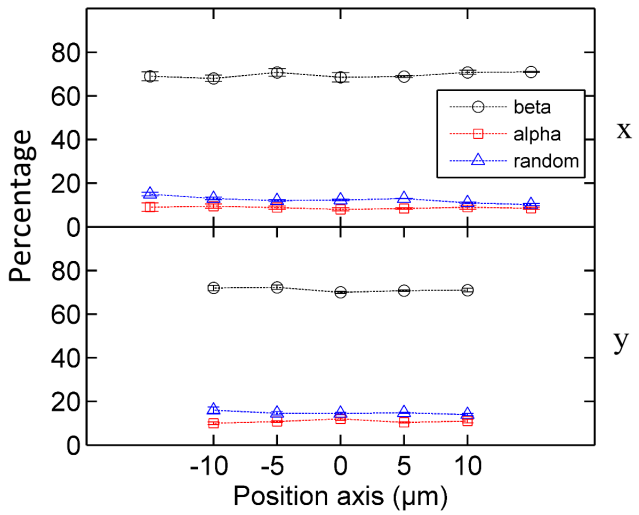

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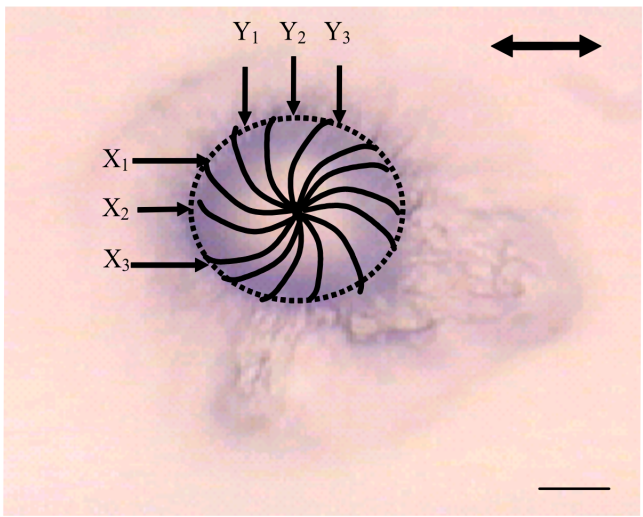

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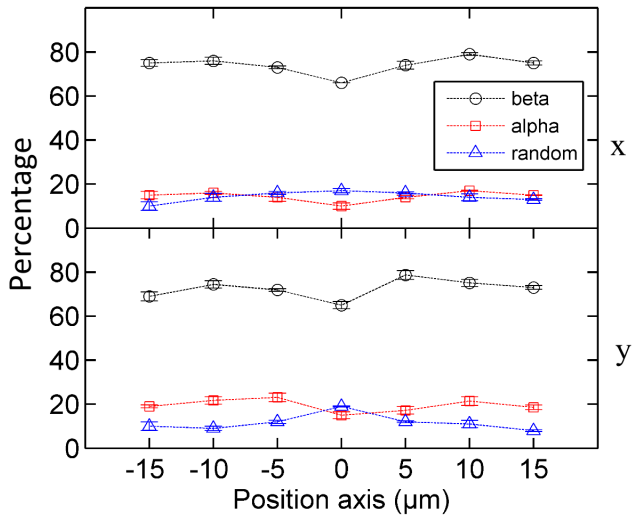

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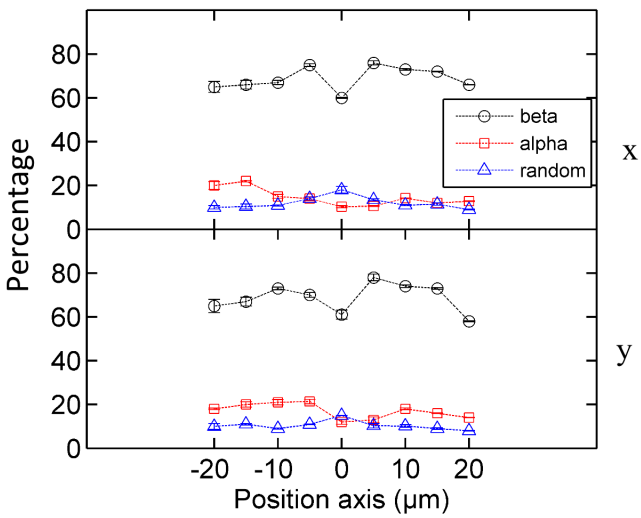

Figure S1 A) Schematic diagram of laser penetration through a spherulite, where the material volume will be significantly greater at position 2 than at position 1. B) Percentage contributions of β-sheet, α-helix and random coil in the x- and y-direction within a second insulin spherulite. C) Percentage contributions of β-sheet, α-helix and random coil in the x- and y-direction within a third insulin spherulite. D) Schematic side-on view of insulin spherulite on coverslip, where the dark shaded area represents the core. Blue arrow indicates increasing depth within the spherulite. The β-sheet content was recorded at three locations indicated by the black and red arrows. E) Schematic image showing β-strands within an amyloid fibril. F) an insulin spherulite visualized using confocal microscopy in 2D; the direction of the laser polarization is given by the black double headed arrow which is parallel to the defined *x*-axis of the spherulite. The intensity across the spherulite is recorded along six paths; three in the *x*-direction, X_1, X_2 and X_3 and three in the *y*-direction Y_1, Y_2 and Y_3, where X_2 and Y_2 go through the core. Scale bar 10 μm.

Figure S2 A) Schematic interpretation of an insulin spherulite with radiating fibrils from the core to the edge. Black double headed arrow shows the direction of polarization. Single headed arrows show the direction of measurements in the x- and y- direction. Scale bar 10 μm. B) Percentage of β-sheet, α-helix and random coil across a second BLG spherulite in the *x*- and *y*-direction. C) Percentage of β-sheet, α-helix and random coil across a third BLG spherulite in the *x*- and *y*-direction. D) Schematic interpretation of BLG spherulite with spiralling fibrils from the core to the edge. Black doubled headed arrow shows the direction of polarization. Single headed arrows show the direction of measurements in the x and y directions. Scale bar 10 μm. E) Percentage of β-sheet, α-helix and random coil across a second Aβ40 spherulite in the *x*- and *y*-direction. F) Percentage of β-sheet, α-helix and random coil across a third Aβ40 spherulite the x- and y-direction.