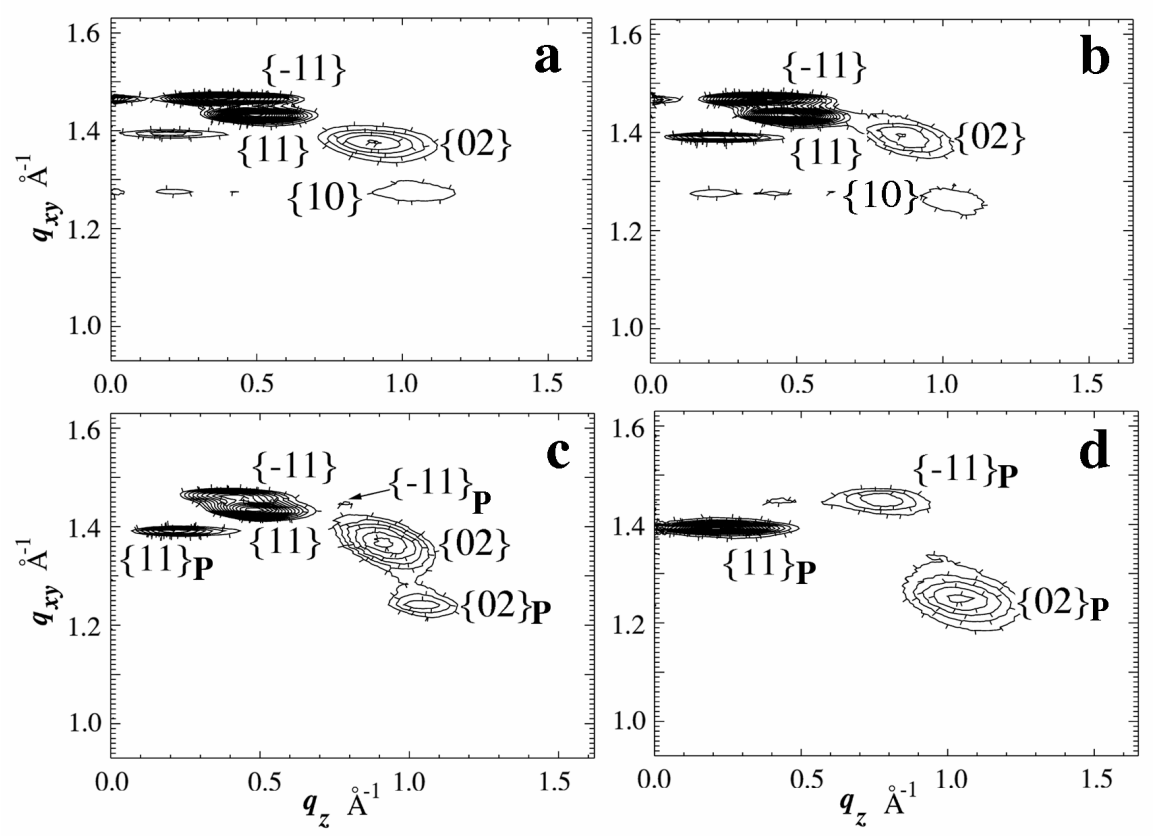
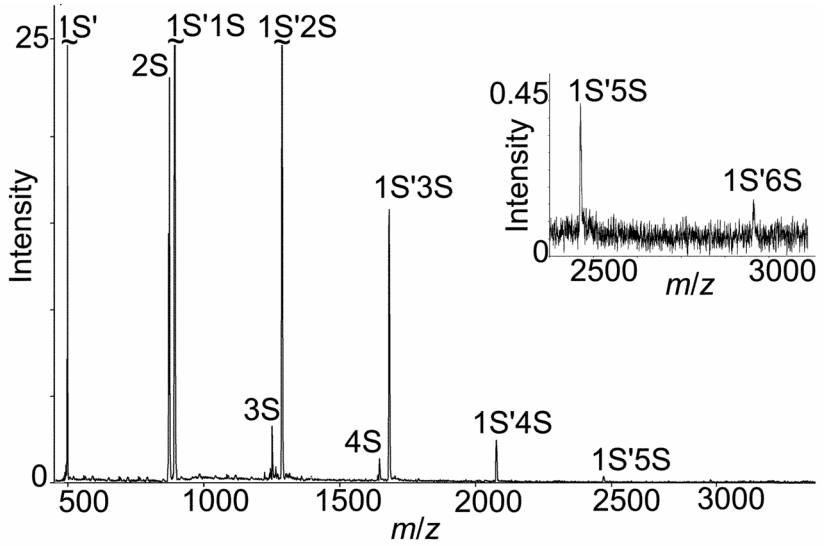


GIXD patterns as 2D contour plots of scattered intensity as a function of the horizontal q_{xy} and vertical q_z components of the scattering vector, $I(q_{xy},q_z)$, of the self-assembled 2D crystallites of: (a) (*RS*)-C_{18}-TE-Lys; (b) 0.5:0.25:0.25 (*R*)-C_{18}-TE-Lys**:**(*S*)-C_{18}-TE-Lys:(*S*)-C_{18}-OE-Lys; (c) *quasi*-racemate 1:1 (*R*)-C_{18}-OE-Lys:(*S*)-C_{18}-TE-Lys; (d) product of the polycondensation of either (*RS*)-C_{18}-TE-Lys or *quasi*-racemates. The Bragg peaks are assigned Miller {*h*,*k*} indexes corresponding to a *pseudo*-rectangular representation of the unit cell.



MALDI-TOF mass spectrum from the product obtained by polycondensation of 1:1 of (*S*)-C_{18}-TE-Lys:(*S*)(deuterated)-C_{18}-OE-Lys. The insert show magnified region *m*/*z*=2300-3000.

Note on the Isotope Effects.

Previous studies performed on the packing arrangement of self-assembled two-dimensional (*R*,*S*)-C_{18}-TE-Lys crystallites and of "*quasi*-racemates", where either the *R* - or *S*-enantiomer was tagged with 35 deuterium atoms, by grazing incidence X-ray diffraction, as well as on the ionization efficiency and polymer distribution of deuterated and non-deuterated oligopeptides by MALDI-TOF mass spectrometry measurements could not detect isotope effects beyond the accuracy of the measurements. The mass spectrometry measurements have been done on samples obtained by the polycondensation of "*quasi*-racemates" both with *R*- or the *S* - enantiomer tagged with deuterium[1-4] and the histogram of the mole fractions of the oligopeptides products is shown in Fig 1c.

In the present study we did not observed differences in the distribution of the oligopeptides when initiated by the *S*-ester untagged or tagged with deuterium.

In summary, the isotope effects should be below the sensitivity of present analytical methods and therefore they should not affect the conclusion of the present study.

References:

1 H. Zepik, E. Shavit, M. Tang, T. R. Jensen, K. Kjaer, G. Bolbach, I. Weissbuch, L. Leiserowitz and M. Lahav, *Science*, 2002, **295**, 1266.

2 I. Weissbuch, G. Bolbach, H. Zepik, E. Shavit, M. Tang, J. Frey, T. R. Jensen, K. Kjaer, L. Leiserowitz and M. Lahav, *J. Am. Chem. Soc.*, 2002, **124**, 9093.

3 I. Weissbuch, H. Zepik, G. Bolbach, E. Shavit, M. Tang, T. R. Jensen, K. Kjaer, L. Leiserowitz, M. Lahav, *Chem. Eur. J.*, 2003, **9**, 1782.

4 I. Rubinstein, G. Bolbach, M. J. Weygand, K. Kjaer, I. Weissbuch, M. Lahav, *Helv. Chim. Acta*, 2003, **86**, 3851.