# POLY(P–ARYLTRIAZOLE) FOLDAMER

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## ABSTRACT

The specific folding of biological molecules leads to an impressive array of precise biological molecules with specific functions. The helix is a particularly interesting motif, since it is central to all life. To attain these unparalleled levels of organization, nature builds information into the smallest building blocks, *e.g.* amino acids, for example in the form chirality, steric constraints, hydrogen bonding capacity and electrostatic potential.[1] Foldamer[2] research has come to the fore as it offers a less onerous route to unraveling some of nature's architectural secrets.[3, 4] Aryl-based helical foldamers have a well-defined cylindrical cavity which can be utilized for molecular recognition whilst the periphery can be used as a scaffold for chiral orientation of functional groups.[5] Therefore it is paramount to discover new foldamer backbones as this can lead to new materials with unprecedented properties and uses. Recently foldamer systems based on oligo(*m*–aryl–1,4–1,2,3–triazoles) have been reported. The crescent was induced by the *meta* connectivity around the benzene ring, the specific 1,4 disubstitution around the 1,2,3-triazole moiety as well as the preference for an *anti-anti* conformation in 2,6-bis(1,2,3-triazol-4-yl)pyridines (BTPs).[6] Helical folding could also be induced by halide ions.[7] By attaching oligo(ethylene oxide) side chains to the aryl rings the hetero aromatic oligomers become amphiphilic therefore solvophobic effects can be used to drive the folding and to stabilize the helically folded conformation. The helically folded conformation is further stabilized by π–π–stacking. In this contribution we show that a helically folded conformation can be realized with poly(p-aryl-1,4-disubstituted-1,2,3-triazoles) [P(*p*–AT)]. Evidence of this is provided for by UV–vis, circular dichroism and fluorescence spectroscopy.

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