

A Monoclonal Anti-Fullerene Antibody Binds Single Wall Nanotubes (SWNTs)

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Various applications are being sought for Fullerene-based compounds in fields as diverse as electronics and pharmacotherapeutics. With respect to the latter, it was of interest to determine whether it was possible to produce monoclonal anti-fullerene antibodies. We succeeded in doing so and characterized one of them with respect to its specificity. Its structure and interaction with fullerenes was also ascertained by X-ray crystallography. The same monoclonal antibody cross-reacted with single wall nanotubes as determined immunochemically and by atomic force microscopy. The antibody, therefore, serves as a bridge between two disciplines: Biology and electronics.