Purification of 2,3,6,7,10,11-hexamethoxytriphenylene and Preparation of hexakiscarbonylmethyl and hexakiscyanomethyl derivatives of 2,3,6,7,10,11-hexahydroxytriphenylene

2,3,6,7,10,11-Hexamethoxytriphenylene (1) was subjected to an improved purification procedure and demethylated to give 2,3,6,7,10,11-hexahydroxytriphenylene (2) as the relatively stable trihydrate. Compound 2 was alkylated with reactive halogen reagents giving 2,3,6,7,10,11-hexakis(cyanomethyl)triphenylene (3), 2,3,6,7,10,11-hexakis(N,N-diethylcarbamoylmethyl)triphenylene (4) and 2,3,6,7,10,11-hexakis(ethoxycarbonylmethyl)triphenylene (5). Reduction of 4 gave 2,3,6,7,10,11-hexakis(acetylaminoethyl)triphenylene (6) and reduction of 5 followed by acetylation gave 2,3,6,7,10,11-hexakis(acetyloxyethyl)triphenylene (7). Hydrolysis of 5 gave 2,3,6,7,10,11-hexakis(carboxyethyl)triphenylene (8). Compound 8 could be converted to its corresponding active N-hydroxysuccinimide ester (9) by the DCC method. Compound 9 was found to be a versatile core molecule that could be coupled with glycine-t-butyl ester, L-phenylalanine and L-phenylalanine-t-butyl ester giving compounds 10, 11 and 12.

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