Poster presentations- Organic and bioorganic chemistry

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ATTEMPTED SYNTHESIS OF 2,6,10-TRIBROMO AND 2,6,10-TRIMETHYLTRIBENZOTRIQUINACENE

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Tribenzotriquinacene (TBTQ) is a bowl-shaped hydrocarbon, synthesized for the first time in 1984 by employing a 2-(diphenylmethyl)-1,3-indanediol derivative as an intermediate, which is subjected to a cyclodehydration reaction to yield the desired compound [1]. If a symmetrically substituted TBTQ is required, however, this method is not the best suited, as it leads to a mixture of isomers. An alternative way to synthesize the TBTQ framework was described in 2012 [2], that makes use of a 1,3-diphenyl-1,3-propanediol derivative as an intermediate. While both methods suffer from moderate yields at best, the advantage of the latter is that symmetrically substituted TBTQs can be obtained as single products and not as mixtures of isomers.

In this work, we describe the attempted synthesis of two trisubstituted TBTQs, namely 2,6,10-tribromo (5a) and 2,6,10-trimethyl tribenzotriquinacene (5b) using the appropriately substituted 1,3-propanediols. While in the case of 5a, only side-chain reaction products were identified, 5b was obtained with an isolated yield of 6%. All products were characterized using NMR spectroscopy. All brominated products were also characterized through single crystal X-Ray diffraction.

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References

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