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A Flexible Porphyrin–Annulene Hybrid: A Nonporphyrin Conformation for \textit{meso}-Tetraaryldivacatporphyrin


**Porphyrid–Annulene Hybrid**

\[ 
\begin{array}{c}
\text{H} \equiv \text{MgBr} \\
+ \text{O} \\
\text{Ar} \equiv \text{H} \\
\text{THF} \\
\text{OH} \\
\text{H} \equiv \text{H} \\
\text{Ar} \equiv \text{Ar} \\
\text{CuI, NiCl}_{2} \cdot 6\text{H}_{2}\text{O} \\
\text{THF, TMEDA, O}_{2} \\
\text{Glaser coupling} \\
\text{H} \equiv \text{H} \\
\text{Ar} \equiv \text{Ar} \\
\text{HCl} \\
\text{boiling solvent} \\
\text{HCl} \\
\text{Ar} \equiv \text{Ph}, \text{or} 4\text{-MeOC}_{6}\text{H}_{4} \\
\text{MeOH} \,* \text{H}_{2}\text{O} \\
\text{MeCOOAg} \\
\text{MeOH} \,* \text{H}_{2}\text{O} \\
\text{NaHTe} \\
\text{Te + NaBH}_{4} \,* \text{H}_{2}\text{O} \\
\text{N} \equiv \text{N} \\
\text{Ar} \equiv \text{Ar} \\
\text{Ar} \equiv \text{Ar} \\
\text{Ar} \equiv \text{Ar} \\
\end{array} \]

**Significance:** Porphyrin–annulene hybrid molecule 2 was synthesized via the tellurium-containing macrocyclic intermediate 1. Treatment of 1 with HCl gave 2 in a good yield, which is attributed to the facility of tellurium extrusion. The substitution of HCl by DCl led to deuterium incorporation at the β-positions of the tellurophene and the pyrrole moieties.

**Comment:** The hybrid molecule still possesses porphyrin-like structure and aromaticity, and the flexibility of annulene. The four periphery aryl groups are expected to contribute to the stability of 2.