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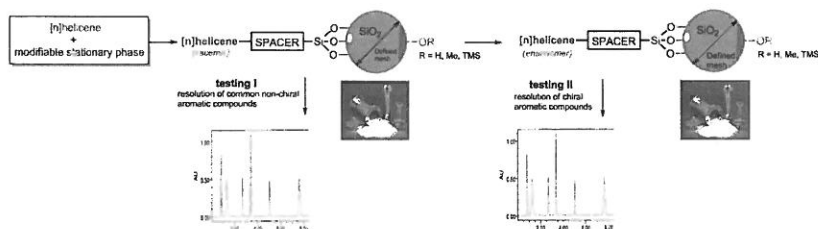
Chiral Stationary Phases Based on Silica Modified by Helicenes

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Helicenes are inherently chiral *o*-condensed polyaromatic compounds with various potential applications such as chiral selectors in separation techniques. We have developed a multigram-scale synthesis of various helicenes [1] based on photocyclization, some of them purposely derivatized [2] for anchoring on proper matrices via covalent bond. There are commercially available spherical stationary phases of defined parameters, possibly SiO₂ surface is covered by appropriate reactive species enabling diverse approaches to further modifications. Recently, we have prepared silica-based phases modified by various racemic helicenes used for preliminary testing of their general properties (except the studies of *chiral* activity). Both proper stationary phase and helicene are connected together with variable spacer forming the preferred material (suitable for use in non-chiral HPLC). Further, considering the target *chiral* activity of our prepared materials, the most ambitious stationary phase was prepared in the form containing just one enantiomer of helicene. This material is subjected to testing in chiral HPLC and results should show us the way of further optimizing—potential final imperfections of our materials (e.g. spacer length, helicene substitution) are tunable. *Scheme* describing the chronological stages of the process is shown below, current state of knowledge will be discussed.



Scheme

Acknowledgement

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References

1. Storch J., Círka V., Bernard M., Vokál J., Pat. No. 303997/PV 2012–245, applied: 12.04.11.
2. Žádný J., Velíšek P., Jakubec M., Sýkora J., Círka V., Storch J., Tetrahedron 2013, 69 (30), 6213–6218.