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Progress in Helicene Stationary Phases

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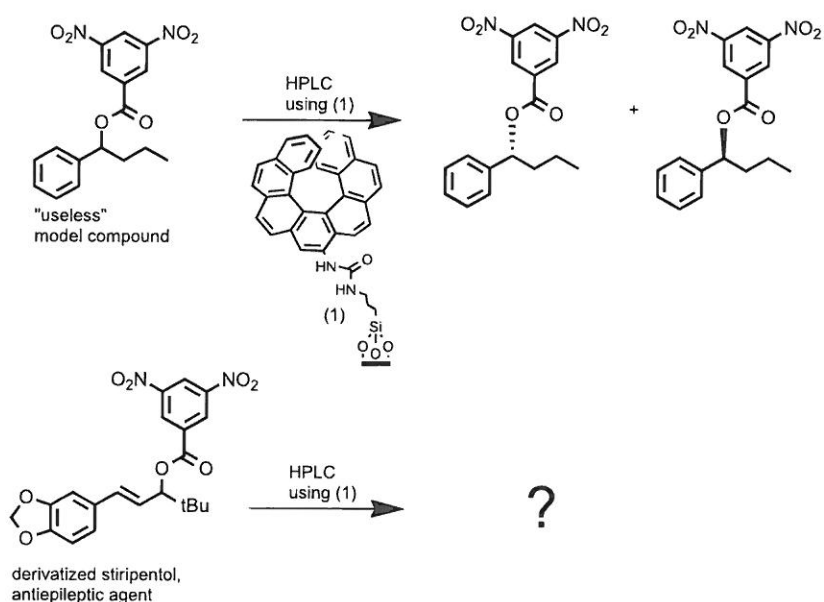
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Curious structure of helicenes, inherently chiral *o*-condensed polycyclic aromatic compounds, grants them several interesting properties (e. g. high α value). Typically, silica can be modified by various organic species; however using the unique helicene motif as a chiral selector brings some complexity to this field of interest.

We prepared silica-based phases modified by various racemic helicenes used for preliminary testing of their general properties and one stationary phase covered with pure enantiomer of 9-amino[7]helicene. We have proposed and tested a few chiral racemic compounds for their potential separation using mentioned stat. phase. We achieved one positive result (sign of resolution; see scheme below); however the model compound is pretty much useless and just showed us structural



specifics needed for these resolution. For example, the model compound shares some structural motifs with stiripentol, chiral antiepileptic agent exhibiting eutomer *in vivo* properties.¹

Furthermore, we have improved one racemic stationary phase using stable 2-amino[6]helicene (compare with unstable 9-amino[7]helicene in phase (1), problems connected with unstability of this material were discussed last year). Results of testing this phase in non-chiral HPLC are satisfying so far; chiral HPLC testing is in progress. Hopefully, the resolution of stiripentol derivative will be discussed during oral presentation.

References

1. Arends, R. H.; Zhang, K.; Levy, R. H.; Baillie T. A., Shen D. D. *Epilepsy Res.* **1994**, *18* (2), 91–96.