

Amino acid derived sensors for fluorometric enantiodifferentiation of chiral anions

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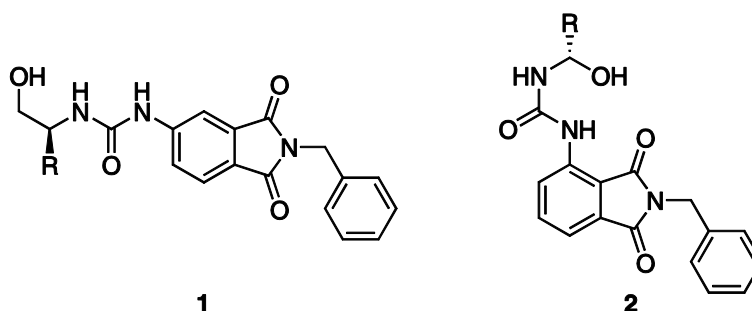
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During the last decade, the interest in new chemosensors for the identification of chiral anionic species with high selectivity and sensitivity has increased. The benefits range from relatively low priced equipment to a broad area of application. Many chemosensors possess a complicated design and require a multistep synthesis. The herein described chemosensors show good enantiodifferentiations for the differentiation of small, chiral anions and are relatively easy to synthesize.

Our sensors exhibit primary interactions via a urea function. For the secondary interaction we focused on alcohols derived from amino acids. These amino alcohols are the basis of our work [1, 2].

As fluorophore we concentrated on the phthalimide subunit, which we already used in previous publications [1, 3]. We synthesized chemosensors like **1** with 4-amino phthalimide for a more flexible binding and like **2** with a 3-amino phthalimide for a more rigid binding (see figure 1).

One major advantage is the last step combination of receptor and fluorophore. This allows an easy way to produce different combinations of receptor and fluorophore [2].



References:

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- [2] S. Hanft, **2014**, *Phthalimide-urea conjugates as fluorescence sensors and chiral templates for [4+4]-cycloadditions*, PhD thesis, University of Cologne, Germany.
- [3] R. Perez-Ruiz, Y. Díaz, B. Goldfuss, D. Hertel, K. Meerholz, A. G. Griesbeck, *Org. Biomol. Chem.* **2009**, 7, 3499 - 3504.