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## Chirality and diastereoselectivity of four coordinated non-planar metal(II)-complexes induced by chiral N<sup>^</sup>O-chelate ligands

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Four coordinated non-planar and C<sub>2</sub>-symmetrical metal(II)-complexes with tetrahedral to distorted square-planar geometry exhibit chirality-at-metal center induced by chiral N<sup>^</sup>O-chelate ligands. The chirality of the whole coordination unit is designated by  $\Delta$  (right) - and  $\Lambda$  (left)-handed descriptors. The chirality and diastereoselection of R or S-N<sup>^</sup>O-chelate ligands on coordination with the metal(II) ions will lead to the formation of opposite  $\Lambda$ - or  $\Delta$ -configuration at-metal center and provide two diastereomers,  $\Lambda$ -M(R-N<sup>^</sup>O)<sub>2</sub> and  $\Delta$ -M(R-N<sup>^</sup>O)<sub>2</sub> {or  $\Delta$ -M(S-N<sup>^</sup>O)<sub>2</sub> and  $\Lambda$ -M(S-N<sup>^</sup>O)<sub>2</sub>}. While the racemic ligands (R/S-N<sup>^</sup>O) provide a mixture of all four diastereomers (Scheme 1). Intra molecular non-covalent interactions that shows within the metal-chiral chelate unit lead to a free-energy divergence between the two diastereomers ( $\Lambda$  vs.  $\Delta$ ), thereby one of the diastereomers is thermodynamically preferred,  $\Lambda$ -M(R-N<sup>^</sup>O)<sub>2</sub> {or  $\Delta$ -M(S-N<sup>^</sup>O)<sub>2</sub>} [1-5].

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