„*Syntheses and Properties of Biological Active, Enantiomerically Pure Nature Products of the Ellagitannin Class*“

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This work deals with the total syntheses of some selected nature products of the ellagitannin class. This tannin class is in the focus of scientific interest, because of their biological activities against HIV and cancer.

Starting from the three protected buildingblocks (*R*)- or (*S*)-2,2',3,3',4,4'-hexabenzyloxy-6,6'-diphenic acid, 3,4,5-tri-*O*-benzylgallic acid and the respective functionalized derivatives of D-glucose the corresponding total protected precusors of the biological active ellagitannin could be build up by *Steglich*-esterification. In the last step of the sequence of the synthesis the nature product is set free by removing all protecting groups. By this methods the following nature products were synthesized for the first time: 2,3-*O*-(*S*)-hexahydroxydiphenoyl-D-glucose, galloyl 2-*O*-galloyl-4,6-*O*-(*S*)-hexahydroxydiphenoyl-β-D-glucose and galloyl 3-*O*-galloyl-4,6-*O*-(*S*)-hexahydroxydiphenoyl-β-D-glucose.

Another success is the optimized total synthesis of *Pedunculagin* by the direct reaction of enantiomerically pure (*S*)-hexabenzyloxydiphenic acid with *o*-nitrobenzyl β-D-glucopyranoside and followed by the removement of all protecting groups. Moreover some contributions to the total syntheses of the nature products *Corilagin*, *Casuarictin* und *Lagerstannin A* in the form of precursors were made.