The synthesis of novel hybrid ferrocenylpyrrolidine ligands $L_a^*$ and $L_b^*$ via [3+2] cycloadditions has been described by our group. Both ligands in turn provided densely substituted unnatural L- and D-proline derivatives in a stereodivergent manner. The powerful feature of having nitro and ester groups gives the opportunity to orthogonally synthesize different γ-proline oligopeptides with different substitution patterns and chiral centers. Supported by the efficiency of Proline-based organocatalysts in numerous chemical transformations, our densely substituted pyrrolidine derivatives have been used in aldol reactions with good results. In this communication, we present our results on the structure/activity relationship of the new generation of oligomeric catalysts. The main conclusion is that in the case of the γ-dipeptides, the stereochemistry of the aldol adducts depends on both monomeric units in a nearly additive manner.