



## SYNTHESIS AND BIOMEDICAL APLICATIONS OF BAPAD: BISAMINOALKYLPOLYAMIDE DENDRIMERS

Ezequiel Perez-Inestrosa<sup>1,2</sup>, Antonio Jesus Ruiz-Sanchez<sup>1,2</sup>, Yolanda Vida<sup>1,2</sup>, Daniel Collado<sup>1,2</sup>, Francisco Najera<sup>1,2</sup>, Pablo Mesa<sup>1,2</sup>, Isabel Morato<sup>1,2</sup>, Nekane Barbero<sup>1,2</sup>

<sup>1</sup> *Organic Chemistry Department, University of Malaga, 29071, Malaga, Spain*

<sup>2</sup> *Andalusian Centre for Nanomedicine and Biotechnology-BIONAND, Parque Tecnológico de Andalucía, 29590, Malaga, Spain*

A new class of Dendrimeric Systems (Dendrimers and Dendrons) and the study of their properties in molecular recognition processes are presented. These Dendrimers (BAPAD: BisAminoalkylPolyAmideDendrimers), are designed to present peripheral amino groups and based on a skeletal amide bonds. They will be prepared by iterative condensation of di(beta-amino)acids prepared by reduction of the corresponding azido or nitro compounds. Dendron-like systems will be prepared following the same methodology.

The versatility of these dendrimeric structures can be exploited by the dinitroderivative approach, according to the synthetic strategies that can be applied in the dendrimer construction.

These dendrimeric structures have been haptenized with the allergenic determinant to Amoxicillin and assayed in RAST inhibition studies letting us check that inhibition occurred, so recognition existed between IgE of patients allergic to Amoxicillin and BAPAD-AXO structures.

The introduction of a fluorescent unit (a 1,8-naphthalimide) in a haptenized Dendron structure bound over the surface of cellulose disks allowed a characterization of solid supports for RAST assays, having a new property, fluorescence, to measure the haptenization degree and the reproducibility, and providing also an effective control on the manufacture of the cellulose disks for RAST assays. This material meet all the requirements for it potential use in clinical diagnostic tests.