

## Polyphosphorhydrazone PROXYL radical dendrimers

Songbai Zhang, Vega Lloveras and José Vidal-Gancedo

Institut de Ciència de Materials de Barcelona ICMAB-CSIC; Campus UAB, 08193 Bellaterra, Barcelona (Spain) and CIBER-BBN, Barcelona (Spain)

E-mail: [szhang@icmab.es](mailto:szhang@icmab.es)

In our group we are focused on the study of molecular materials based on radical dendrimers, their magnetic properties as well as their biomedical applications.<sup>1</sup>

Here we describe the synthesis and EPR study of different generations of PROXYL terminated Polyphosphorhydrazone (PPH) radical dendrimers. The interaction between pendant stable radicals at the exterior of the dendritic surface and their dynamic behaviour can be studied by Electron Paramagnetic Resonance (EPR) spectroscopy. This is important to understand the magnetic properties and other ones like relaxivity of these functionalized dendrimers. The properties of the radical dendrimers depend on the core dendrimer, the size (generation of the dendrimer), the radical and the linker between the radical and the dendrimer branches. Using lysine as a spacer to bind the radical to the dendrimer, we increase the water solubility of the molecule, something important to keep in mind if we are thinking about biomedical applications.

The synthesis of the radical dendrimers have been followed by several spectroscopic techniques: <sup>1</sup>H NMR, <sup>13</sup>C NMR, <sup>31</sup>P NMR, FT-IR, SEC-GPC and EPR, showing the successful synthesis of different generations of Polyphosphorhydrazone.

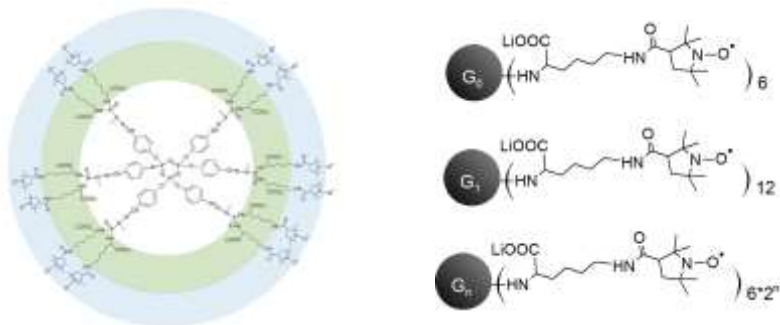


Figure1: Schematic structure of radical dendrimer

### References

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