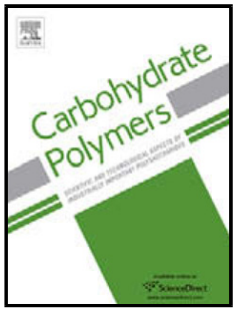

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Characterization of Alginate/Chitosan-based nanoparticles and mathematical modeling of their SpBMP-9 release inducing neuronal differentiation of human SH-SY5Y cells

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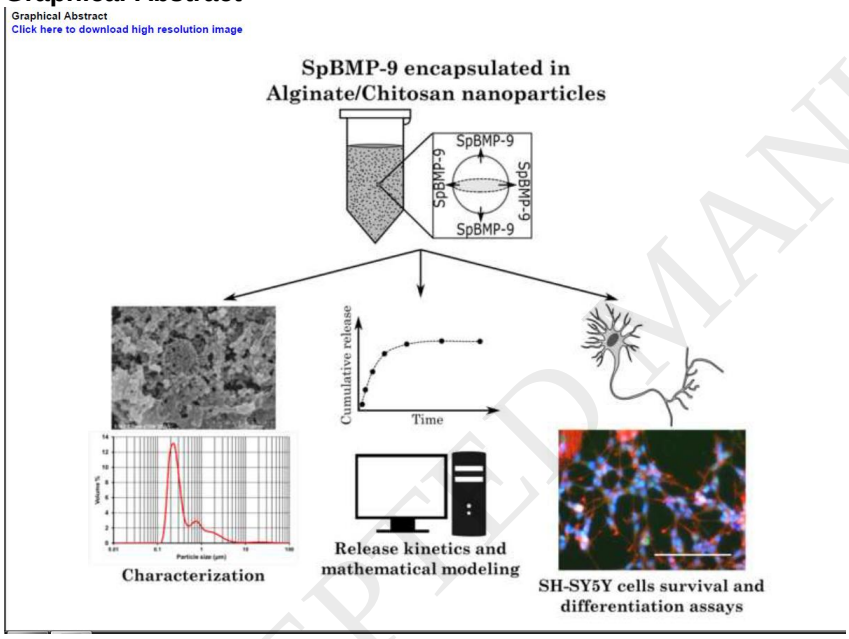
Graphical Abstract



Highlights

- Alg/Chit NPs, with a diameter of 240 nm, successfully encapsulated SpBMP-9
- Release kinetics were diffusion based with the presence of interactions
- Implementation of a mechanistic mathematical model corroborated experimental results
- Alg/Chit NPs alone promoted human neuroblastoma cells SH-SY5Y survival
- SpBMP-9 released from the Alg/Chit NPs promoted the neuronal differentiation