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Authors: Rebeca Rivero, Fabrisio Alustiza, Virginia Capella, Cecilia Liaudat, Nancy Rodriguez, Pablo Bosch, Cesar Barbero, Claudia Rivarola

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## Physicochemical properties of ionic and non-ionic biocompatible hydrogels in water and cell culture conditions: relation with type of morphologies of bovine fetal fibroblasts in contact with the surfaces

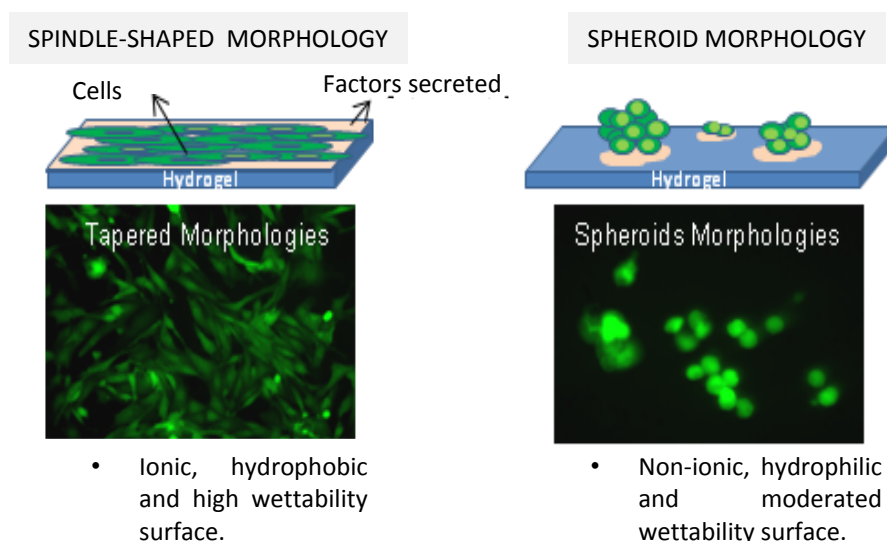
Rebeca Rivero<sup>ε,‡</sup>, Fabrisio Alustiza<sup>ε,‡</sup>, Virginia Capella<sup>ε,‡</sup>, Cecilia Liaudat<sup>‡</sup>, Nancy Rodriguez<sup>‡</sup>, Pablo Bosch<sup>‡</sup>, Cesar Barbero<sup>ε</sup> and Claudia Rivarola<sup>ε\*</sup>

<sup>ε</sup> Chemistry Department, Faculty of Exact, Physical-Chemical and Natural Sciences. National University of Rio Cuarto-CONICET, Rio Cuarto (Cordoba), Argentina.

<sup>‡</sup> Molecular Biology Department, Faculty of Exact, Physical Chemical and Natural Sciences. National University of Rio Cuarto-CONICET, Rio Cuarto (Cordoba), Argentina. Present address: Marcos Juarez Agricultural Experimental Station INTA, Animal Health. Marcos Juarez (Córdoba), Argentina.

\*Corresponding author: E-mail: crivarola@exa.unrc.edu.ar.

### Graphical abstract



### Highlights

- Ionic and non-ionic hydrogel surfaces are studied as scaffolds of BFF cells.
- Physicochemical and superficial properties of hydrogel change with medium conditions.
- Flattened and spindle-shaped and spheroid cell morphologies are formed on different surfaces.
- Non-ionic and hydrophilic surfaces with moderated wettability induce the formation of cell spheroids.

### ABSTRACT

Cationic, anionic and non-ionic hydrogels having acrylamide polymer backbones were synthesized via free radical polymerization with N,N-methylenebisacrylamide (BIS) as crosslinker. The chemical structures of the hydrogels were characterized by Fourier Transform Infrared Spectroscopy (FTIR). Physicochemical properties such as swelling kinetic, maximum swelling capacity, volume phase

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