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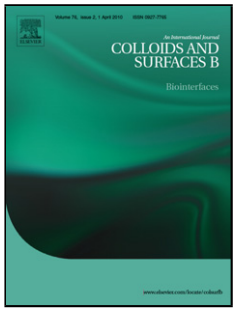

Title: Physicochemical properties of ionic and non-ionic biocompatible hydrogels in water and cell culture conditions: relation with type of morphologies of bovine fetal fibroblasts in contact with the surfaces

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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

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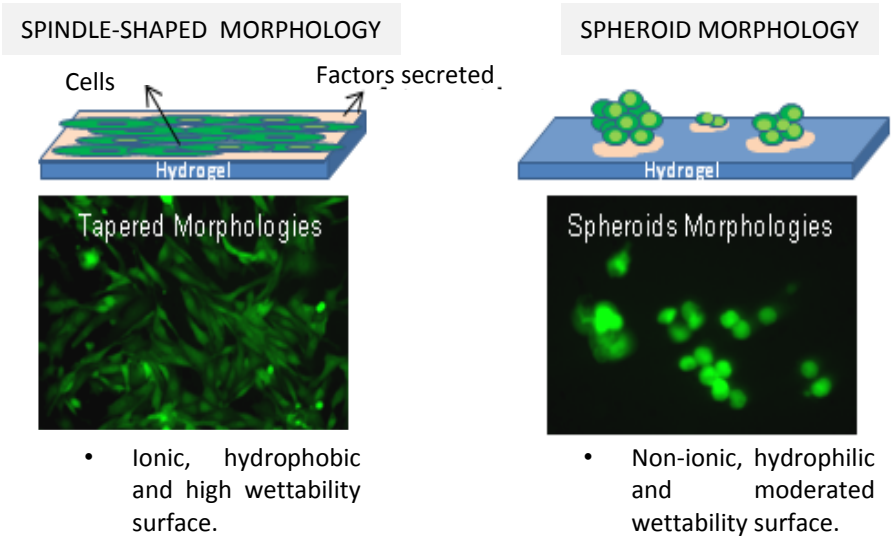
Graphical abstract



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