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In vitro biocompatibility assessment of dental composite using confocal time lapse imaging

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It is generally accepted that *in vitro* cell material interaction is a useful criterion in the evaluation of dental material biocompatibility. The objective of this study was to use 3D CLSM time lapse confocal imaging to assess the *in vitro* biocompatibility of dental composites. This method provides an accurate and sensitive indication of viable cell rate in contact with dental composite extracts. The ELS extra low shrinkage, a dental composite used for direct restoration, has been taken as example. *In vitro* assessment was performed on cultured primary human gingival fibroblast cells using Live/Dead staining. Images were obtained with an FV10i confocal biological inverted system and analyzed with the FV10-ASW 3.1 Software. Image analysis showed a very slight cytotoxicity in the presence of the tested composite after 5 hours of time lapse. A slight decrease of cell viability was shown in contact with the tested composite extracts compared to control cells. The findings highlighted the use of 3D CLSM time lapse imaging as a sensitive method to qualitatively and quantitatively evaluate the biocompatibility behavior of dental composites.

Biography

Nina Attik has completed her PhD (European PhD) with high honors from Nancy University (Pharmacy school) and Postdoctoral studies from Lyon University (Dental school). She is the winner of the Support Program for the Creation of Innovative Companies in the Mediterranean (PACEIM: 2011). She has published more than 15 papers in reputed journals and has participated as speaker in different conferences and meetings (national and international). She had also conducted many research European projects and manages many laboratory budgets.

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