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Plasticenta: First evidence of microplastics in human placenta

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Free article

Abstract

Microplastics are particles smaller than five millimeters deriving from the degradation of plastic objects present in the environment. Microplastics can move from the environment to living organisms, including mammals. In this study, six human placentas, collected from consenting women with physiological pregnancies, were analyzed by Raman Microspectroscopy to evaluate the presence of microplastics. In total, 12 microplastic fragments (ranging from 5 to 10 μm in size), with spheric or irregular shape were found in 4 placentas (5 in the fetal side, 4 in the maternal side and 3 in the chorioamniotic membranes); all microplastics particles were characterized in terms of morphology and chemical composition. All of them were pigmented; three were identified as stained polypropylene a thermoplastic polymer, while for the other nine it was possible to identify only the pigments, which were all used for man-made coatings, paints, adhesives, plasters, finger paints, polymers and cosmetics and personal care products.

Keywords: Human placenta; Microplastics; Raman microspectroscopy.

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