

Development of a functionalized SBA-15 mesoporous silica matrix and its application in the purification of the ribonucleic acid

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Ribonucleic acid (RNA) is of great importance in a wide range of laboratory tests, especially in the diagnosis of viral, bacterial and parasitic diseases, the diagnosis of hereditary disorders and tumors, as well as basic research. To provide relevant and reliable results, the molecular biology techniques used for such purposes require pure and intact molecules of purified RNA. RNA can be extracted from prokaryotic or eukaryotic organisms, from various heterogeneous materials, such as fresh or frozen tissues, cell lines, PCR products or chemically preserved samples for a long time. Therefore, RNA purification becomes a critical step, to obtain good quality RNA molecules (pure and intact). The first is based on organic extraction using phenol: chloroform. The second group encompasses RNA purification methods through their ability to adsorb at specific salts, and the third group includes methods that exploit RNA isolation on isopycnic gradients. Precisely, the adsorption methods, which are based on the ability of RNA to bind to a specific surface in the presence of chaotropic salts, are one of the most available kits on the market, in addition to providing RNA with high quality and purity.

Biography

César Alejandro Díaz Cano was born in Santiago de Querétaro (Querétaro, Mexico) in 1994. He studied Nanotechnology Technician at the University Technology of Querétaro (UTEQ) and the Nanotechnology Engineering at the University Technology of Tulancingo (UTEC), receiving his degree in 2014 as the Technician and 2016 Engineering respectively. He is currently doing his Master in Science (Nanotechnology) at the University Autonoma of Querétaro.