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PII: S0956-5663(16)31312-4
DOI: <http://dx.doi.org/10.1016/j.bios.2016.12.062>
Reference: BIOS9455

To appear in: *Biosensors and Bioelectronics*

Received date: 23 October 2016
Revised date: 14 December 2016
Accepted date: 29 December 2016

Cite this article as: Shima Gholizadeh, Mohamed Draz, Maryam Zarghooni, Amir Sanati Nezhad, Saeid Ghavami, Hadi Shafiee and Mohsen Akbari, Microfluidic Approaches for Isolation, Detection, and Characterization of Extracellular Vesicles: Current Status and Future Directions, *Biosensors and Bioelectronics*, <http://dx.doi.org/10.1016/j.bios.2016.12.062>

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Microfluidic Approaches for Isolation, Detection, and Characterization of

Extracellular Vesicles: Current Status and Future Directions

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Abstract:

Extracellular vesicles (EVs) are cell-derived vesicles present in body fluids that play an essential role in various cellular processes, such as intercellular communication, inflammation, cellular homeostasis, survival, transport, and regeneration. Their isolation and analysis from body fluids have a great clinical potential to provide information on a variety of disease states such as cancer, cardiovascular complication and inflammatory disorders. Despite increasing scientific and clinical interest in this field, at the time of writing there are still no standardized procedures available for the purification, detection, and characterization of EVs. Advances in microfluidics allow for chemical sampling with increasingly high spatial resolution and under precise

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