OMICS International
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5ᵗʰ Asia-Pacific Summit on
Cancer Therapy

July 20-22, 2015   Brisbane, Australia

An innovative platform for rapid and multiplexed cancer biomarker detection with surface-enhanced raman scattering nanotags

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Surface enhanced Raman scattering (SERS) nanotags are a new class of labels for optical detection based on Raman scattering. Central advantages include the tremendous spectral multiplexing capacity for simultaneous target detection due to the narrow width of vibrational Raman bands, the need for only a single laser excitation wavelength to excite the Raman spectra of all SERS nanotags, quantification using the fingerprint intensity of the corresponding SERS nanotags; high photostability and optimal contrast by using red to near-infrared (NIR) excitation in order to minimize the disturbing auto fluorescence of cells and tissues.

In this contribution, the innovative platform for rapid and multiple cancer biomarker detection such as epigenetic biomarker (DNA methylation) and protein biomarker (HER2) by using rational designed SERS nanotags will be discussed.

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Biography

Yuling Wang has completed her PhD in March 2009 from Chinese Academy of Sciences, China. After finishing her postdoc work in Purdue University, USA, she obtained an Alexander von-Humboldt Fellowship in German. Currently, she is working as an ARC DECRA fellow in Prof. Matt Trau's group in Australian Institute for Bioengineering and Nanotechnology (AIBN), the University of Queensland. She has published more than 60 papers in reputed journals with an H-index of 26.

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J Cancer Sci Ther
ISSN: 1948-5956 JCST an open access journal

Cancer Summit-2015
July 20-22, 2015

Volume 7, Issue 6

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