TN-001 **<Invited Talk>**

NanoBio-Technology for Practical Implementation in Drug Discovery

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To date, various nanobiotechnologicalapproaches for biosensors and drug development have been explosively studied. Despite of successful demonstrations, the new technologies hardly enjoyed routine applications in practical nanobiomedicine. Here, researchers trained at the interface of basic sciences and engineering are expected to play critical roles. In this tutorial, I will introduce recent studies which harness graphene derivatives for developing bioanalytical platforms to quantitatively analyze various enzyme activities and biomarkers. The systems rely on attractive interaction between graphene oxide and nucleic acids or phospholipids. Recently, one of the graphene-based bioassay system was applied to anti-viral drug screening and potent hit compounds were identified to treat hepatitis C. This study clearly shows that a new nanobio-technology can be routinely implemented in drug discovery, providing many advantages over conventional methods.

Keywords: Nanobiotechnology, Porous nanomaterials, Nanomedicine, Biosensor, Graphene