IS-19  Gold nanoparticles as a drug carrier in nanomedicine

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Objective: To elicit the size-dependent immune properties of gold nanoparticles (GNPs) for the application of drug carrier targeting cancer tissues, a synthetic peptide corresponding to Foot-and-mouth disease virus (FMDV) viral proteins was conjugated to GNPs ranging from 2-50 nm in diameter (2 nm, 5 nm, 8 nm, 12 nm, 17 nm, 37 nm, and 50 nm). An extra cysteine was added to the C-terminus of the FMDV peptide (pFMDV), to ensure maximum conjugation. Methods: The pFMDV-GNP conjugates were injected into BALB/C mice. Immunization with pFMDV-keyhole limpet hemocyanin (KLH) conjugate was performed as the control. Blood was withdrawn from mice on weeks 4, 6, 8, and 10, and antibody titers against pFMDV and carriers were obtained. For pFMDV-GNP immunization, specific binding against peptide was detected in the sera of mice injected with 2 nm, 5 nm, 8 nm, 12 nm, and 17 nm GNP conjugates. Results: Maximum binding occurred with GNPs of sizes between 8 nm to 17 nm. The pFMDV-GNPs induced a 3-fold increase in antibody response compared to pFMDV-KLH. In particular, all sera exhibited undetectable binding against GNP, while antisera of pFMDV-KLH presented high levels of binding activity against KLH. The uptake of pFMDV-GNP in spleen was examined by ICP-MS and TEM. Conclusion: The amount of GNP accumulated in the spleen correlated to the immune response induced by pFMDV-GNP. In conclusion, we demonstrated the size-dependent immunogenic properties of pFMDV-GNP conjugates. GNPs ranging from 8 nm to 17 nm promotes the most intense immune response, thus should be avoided if used as drug carrier. GNPs of sizes outside of this zone will be potential drug carriers in the application of nanomedicine.

IS-20  Frequent loss of heterozygosity in ovarian cancer arising from endometriosis: possible involvement in malignant transformation

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[Objective] The molecular mechanisms underlying malignant transformation of endometriosis are poorly understood mainly due to the rarity of cases and the difficulty of detection. Here we investigated mutations of tumor-related genes, loss of heterozygosity (LOH), and protein expressions in 12 ovarian cancer cases arising from endometriosis that fulfill histopathological criteria. [Methods] Under approval of IRB and informed consent, each section was microdissected to isolate endometriosis epithelium, transitional epithelium and cancer cells. Extracted DNA was amplified by nested PCR. LOH was identified by fluorescence-labeled microsatellite markers. The expression of steroid receptors, apoptosis-related and tumor-related proteins was examined by immunohistochemistry (IHC). [Results] Totally 31 LOH events were detected with 13 microsatellite markers on 6 chromosomes. Of them 13 LOH exist in all cancer, transitional and endometriosis cells while 18 LOH were in cancer cells only. LOH was found in 9 cases (75%) on chromosomes 10q flanking PTEN, 8 cases (66.7%) on 9q flanking p16INK4A, and 6 cases (50%) on 13q. Only 2 point mutations were detected in cancer cells in 1 case. Of the 12 proteins studied, only aromatase was differentially expressed between endometriosis and cancer tissues. [Conclusion] LOH in some candidate gene loci may be involved in malignant transformation of endometriosis.

IS-21  Health Beliefs of Taiwanese Women seeking HPV Vaccination

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In Taiwan, human papillomavirus (HPV) vaccine is recommended to women aged 9 to 26 years. The purpose of this study was to examine health beliefs among women aged 9-26 years and women aged over 26 years who seek HPV vaccination. Subjects were recruited from three hospitals in southern Taiwan. One hundred and eighty-nine women with initiated HPV vaccination completed a questionnaire of health belief. 38% (n = 72) of the women with initiating vaccine were over the age of 26 years. Health beliefs about HPV vaccination were different between women aged 18 to 26 years and women aged over 26 years. Women aged 18-26 years were more likely than women aged over 26 years to concern the cost and availability. Recommendations from others are main reasons for young adult women to initiate HPV vaccination; while self-awareness at high risk for cervical cancer and personal gynecologic diseases are main reasons for adult women to initiate HPV vaccination. Media plays an important role to trigger women to seek HPV vaccination.