J Nanomed Nanotechnol 2013, 4:6
http://dx.doi.org/10.4172/2157-7439.S1.015

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Nanotek & Expo

December 02-04, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Genetic structure and diversity of soybean by SSR markers associated with protein content and biological nitrogen fixation

Adalgisa Ribeiro Torres
CNPq fellow, Embrapa Soja, Brazil

Knowing the structure of the population within a germplasm collection is essential to understanding and correctly interpreting the associations between functional and molecular diversity. This study aimed to determine the genetic structure and diversity of soybean cultivated in Brazil, based on SSR loci for protein content and biological nitrogen fixation (BNF). A total of 191 cultivars of soybean, developed and released by public and private institutions, were chosen. The cultivars were genotyped with 22 SSR markers associated with protein content. Genetic diversity and population structure were evaluated with DARwin 5.0 and STRUCTURE software, respectively. A total of 101 alleles were generated, ranging from 2 to 11, with an average of 5.05 alleles per locus. Only two markers revealed no polymorphism among 191 cultivars. The average of effective number of alleles was 4.28, ranging from 1.46 to 10.6. The polymorphism information-content values ranged from 0.2 - 0.8, with an average of 0.48. The mean linkage disequilibrium (LD) value (D') for all statistically significant loci pairs was lower than 0.30. Genetic structure revealed two distinct subpopulations. To date, no investigation focusing protein content in grains and BNF has been done on soybeans cultivated in Brazil. Therefore, the results shown in our study will be useful for breeders for a more efficient conservation of germplasm and for association analyzes of protein content and BNF efficiency.

Biography

Adalgisa Ribeiro Torres is postdoctoral student at EMBRAPA Soja (Brazilian Agricultural Research Corporation). She has completed her Ph.D. in Genetics and Plant Breeding at the Universidade de São Paulo. She has experience in Agronomy with emphasis in Molecular Biology; Genetics of Microorganisms; Microbiology; Proteomics; Molecular markers and association mapping. She has published papers in reputed journals.

adalgisa@cnpso.embrapa.br

Laser and radiofrequency-induced hyperthermia treatment via gold-coated magnetic nanocomposites

Ahmed Elshahawy
Misr University for Science and Technology, Egypt

The current radiofrequency ablation technique requires invasive needle placement. On the other hand, most of the common photo thermal therapeutic methods are limited by lack of accuracy of targeting. Gold and magnetic nanoparticles offer the potential to heat tumor tissue selectively at the cellular level by noninvasive interaction with laser and radiofrequency. Gold nanospheres and gold-coated magnetic nanocomposites were used for inducing hyperthermia to treat subcutaneous Ehrlich carcinoma implanted in female mice. The results revealed that, in mice treated with gold nanospheres, tumors continued to grow but at a slow rate. In contrast, more than 50% of the tumors treated with gold-coated magnetic nanocomposites completely disappeared. So, this simple and noninvasive method shows great promise as a technique for selective magnetic photo thermal treatment.

Biography

Ahmed Elshahawy has acquired his BS and MS in Biophysics then Ph.D. in Nanotechnology and Applied Medical Physics from Fculty of Science, Cairo University in 2012. Ahmed thesis was evaluated externally from the Department of Medical Applied Physics and Material Science, Johns Hopkins University, USA and Department of Medical Applied Physics, Lab of Nanotechnology & Magnetism (NANOMAG) Research Technological Institute, University of Santiago de Compostela, Spain. Ahmed has over 15 years superintending the MRI & CT Scan in several sites in Cairo. Ahmed is a Biomedical physics consultant & applications developer at the Children Cancer Hospital 57357. Shahawy is a lecturer at Misr University for Science and Technology (MUST) and applications consultant at Siemens healthcare.

aabdelwahab73@yahoo.com