Genetic Engineering-2013

International Conference on
Genetic Engineering & Genetically Modified Organisms

August 12-14, 2013 Raleigh-North Carolina, USA

Progress towards generation of transgenic lines of chicken with a green fluorescent protein gene in the female specific (w) chromosome by sperm-mediated gene transfer

Emmanuel S. Quansah
Charles Strut University, Australia

Abstract

We aim to generate stable lines of transgenic chickens expressing green fluorescent protein (GFP), from a transgene in the female specific W chromosome. It is hoped these lines of transgenic chicken will be useful for determination of the sex of chicks in ova. It is also hoped these lines of chicken will be useful to the egg industry which currently disposes of billions of male day old chicks per year worldwide.

Plasmids containing a GFP gene driven by the Human elongation factor-1 alpha (EF-1α) promoter, cytomegalovirus early enhancer element and chicken beta-actin composite (CAG) promoter and the murine phosphoglycerate kinase 1 (PGK) promoter have been produced in a mini circle vector (System Biosciences). Plasmids are being used to transform sperm which will be eventually used to generate transgenic chicks by artificial insemination via sperm mediated gene transfer (SMGT). This study aims to determine factors affecting the efficiency of transformation by SMGT and the fate of transforming DNA in chicken. Our progress will be reported and specifically the results of experiments to transform and express GFP in chicken sperm.

Biography

Emmanuel S. Quansah is a 2nd year Ph.D. candidate in Molecular Genetics at Charles Sturt University in Australia. He obtained his MS in Animal Nutrition at University of Maryland (USA), followed by a 6-month internship at Animal Production and Health division of the United Nations Food and Agricultural Organization Headquarters in Rome. He also published an FAO working document.