Jan 1st, 12:00 AM

15. Pharmacy

University of Central Oklahoma

Abstracts from the 2014 Oklahoma Research Day

Held at the University of Central Oklahoma

05. Mathematics and Science

15. Pharmacy

05.15.01 The Effect of Human Papillomavirus on the Adolescent Male Population.

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Northwestern State University

Research and cause for human papillomavius mostly has been focus on the female population. While research and end results have shown positive outcome for the female population, there is also a male population to think about. Therefore what is the effect of vaccination of the adolescent male population and would it be a benefit to implement these vaccines in the standard protocol? Human papillomavirus (HPV) is the most common sexually transmitted infection. There are over 40 types of HPV that can infect males and females. Health problems caused by HPV can range from genital warts and respiratory warts to many forms of cancers effecting both the male and female population. Usually HPV is carried without any signs and symptoms, therefore the infected person is not aware they are passing the virus. This research was selected to focus on forms of adolescent males from the ages 12-19. The basis was formed to see if vaccination occurred during this time frame if there was a significance outcome to lower infection rate and show a positive effect of the vaccine. The majority of all research pertaining to the vaccines indicated a highly positive outcome. These outcomes have shown to provide up to a 95% reduction in infection and cancers in adolescent males. These findings would indicate a base to start implementation of the human papillomavirus vaccine with all regulated standards. This will help reduce the effect of outbreaks and cancers on both spectrum of the population.

05.15.02 Prophage SF370.1 Is The Helper Phage Of Streptococcus Pyogenes Chromosomal Island SPYCIM1

Craig, Land

Redlands Community College

Streptococcus pyogenes is a pathogen causing a wide range of infections, from pharyngitis to rheumatic fever. Chromosomal island SpyCIM1 mediates a growth-dependent mutator phenotype in S. pyogenes. Lacking structural genes, SpyCIM1 relies upon a helper prophage to package its DNA into phage capsids. We demonstrated that pyrogenic exotoxin C (speC) carrying prophage SF370.1 is this helper phage. Strains CEM1∆1, CEM1∆Φ, OKM77, and OKM78 were used. Mitomycin C was used to induce prophages, which were purified by centrifugation. PCR and electron microscopy were used to identify the presence of SF370.1 or SpyCIM1 phage particles. Strains CEM1∆1 and CEM1∆Φ were used as a hosts for phage reinfection. Electron microscopy and molecular analysis demonstrated that prophage SF370.1 must be present to package and release SpyCIM1. Strains with SF370.1 but lacking SpyCIM1 released only phages with 65nm heads while those with both released a mixed population of differing tail fibers. Strains lacking SF370.1 produced neither phage particles. Induced SF370.1 phages tagged with ermB were used to demonstrate rescue of SpyCIM1 packaging following its reintroduction. Optimum infection with SF370.1 occurred in early logarithmic growth. The presence of prophage SF370.1 in the S. pyogenes genome is required for the packaging and release of SpyCIM1. SpyCIM1 and related chromosomal islands are very frequent in S. pyogenes, and our studies are the first to demonstrate

05.15.03 Novel Cyclen Based Antimalarial Agent: In Vitro And In Vivo Studies

Prince, Amoyaw , Josiah Dittrich

Southwestern Oklahoma State University