J Vaccines & Vaccin 2015, 6:6
http://dx.doi.org/10.4172/2157-7560.C1.037

OMICS International
conferenceseries.com

9th Global Summit and Expo on
Vaccines & Vaccination
November 30-December 02, 2015 San Francisco, USA

Optimization of up-streaming production process of acellular pertussis vaccine

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Acellular pertussis vaccine requires fermentation, isolation and purification of antigenic components i.e. pertussis toxoid (PT), filamentous hemagglutinin (FHA), pertactin (69kD protein), fimbrie 2 and 3. The number of doses per fermentation batch of acellular pertussis vaccine is usually 20-25 times lower than whole cell pertussis vaccine. It is necessary to increase the titre of antigenic components and final yield during process of acellular pertussis vaccine. This study includes selecting the high titer strain of *B. pertussis*, optimization of growth medium and cultivation condition for maximum production of these antigens. An increase in the productivity by employing fed – batch rather than the currently used batch cultivation of *B. pertussis* could reduce the cost of acellular pertussis vaccine.

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