

## **Establishment and characterisation of a new cell line derived from *Culex quinquefasciatus* (Diptera: Culicidae).**

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### **Abstract**

Insect cell cultures are an important biotechnological tool for basic and applied studies. The objective of this work was to establish and characterise a new cell line from *Culex quinquefasciatus* embryonic tissues. Embryonated eggs were taken as a source of tissue to make explants that were seeded in L-15, Grace's, Grace's/L-15, MM/VP12, Schneider's and DMEM culture media with a pH range from 6.7-6.9 and incubated at 28°C. The morphological, cytogenetic, biochemical and molecular characteristics of the cell cultures were examined by observing the cell shapes, obtaining the karyotypes, using a cellulose-acetate electrophoretic system and performing random amplified polymorphic DNA-polymerase chain reaction analysis, respectively. The Grace's/L-15 medium provided the optimal nutritional conditions for cell adhesion and proliferation. Approximately 40-60 days following the explant procedure, a confluent monolayer was formed. Cellular morphology in the primary cultures and the subcultures was heterogeneous, but in the monolayer the epithelioid morphology type predominated. A karyotype with a diploid number of six chromosomes ( $2n = 6$ ) was observed. Isoenzymatic and molecular patterns of the mosquito cell cultures matched those obtained from the immature and adult forms of the same species. Eighteen subcultures were generated. These cell cultures potentially constitute a useful tool for use in biomedical applications.