Abstract

Adenovirus are non-enveloped, icosahedral viruses containing a DNA genome. Adenovirus D1327 is a serotype known to cause upper respiratory infection. Studies were done preparatory to developing an adenovirus mouse model to determine the antiviral sensitivity of adenovirus strain D1327 before putting it into mice. The use of cell lines A549 (ATCC® CCL-185™), KB (ATCC® CCL-179®) and Hela-Ohio (ATCC, Rockville, MD, USA), were used to test the cytopathic effect (CPE) of the D1327 virus and obtain a titer (lowest concentration of virus effective for infection). These cell lines were used for testing the effectiveness of known drugs in treating the virus (concentration of virus effective for infection). These cell lines were used for cytopathic effect (CPE) of the D1327 virus and obtain a titer (lowest concentration of virus effective for infection). These cell lines were used for testing the effectiveness of known drugs in treating the virus.

Materials and Methods

- Hela-Ohio cells were cultured with MEM+FBS 10% in 96 8-well T-flasks.
- Once the cells became confluent the media was removed from 4 T-flasks and 4 ml MEM with 4μM ddC was added to 3 of them (one had no virus added to provide a mock flask.
- These flask were shaken for one hour before adding 2 ml MEM with Gentamicin and 4 ml MEM +4%FBS
- This was cultured for about 6 days at 37°C and 5% CO2 before Freezing.
- This new pool of virus was labeled V2426 and placed in 0.5 ml vials after thawing.
- ddC was used as a positive control
- Once titers were determined plates were thawed and 4 ml MEM+FBS 10% in 8 75ml T-flasks.
- The diagram below shows how the wells were designated during drug rounds.

Conclusions

- ODE-HPMP was determined to be a poor drug for adenovirus D1327.
- Several other variations of HPMP drugs are possibly more effective treatments.
- HPMP drugs with different natural nucleotide analogs such as HPMPG or HPMPC may be more effective and should be tested.

Acknowledgements

A special thanks to Brett Hurst of the USU ADVS dept. for providing cell line A-549 for testing.