

REFERENCES:

- ABI Prism Comparative PCR sequencing guide, Perkin Elmer 1995.
- ABI Prism DNA Sequencing, Chemistry guide, Perkin Elmer 1995.
- Annunziata, P., C. Cioni, S. Toneatto and E. Paccagnini.** 1998. HIV-1 gp120 increases the permeability of rat brain endothelium cultures by a mechanism involving substance P. *AIDS* **12**, 2377-2385.
- Au, K., W. Chan, J.W. Burns and M.K. Estes.** 1989. Receptor activity of rotavirus nonstructural glycoprotein NS28. *J. Virol.* **63**, 4553-4562.
- Au, K., N.M. Mattion and M.K. Estes.** 1993. A subviral particle binding domain on the rotavirus nonstructural glycoprotein NS28. *Virology* **194**, 665-673.
- Ausubel, F.M., R. Brent, R.E. Kingston, D.D. Moore, J.G. Seidman, J.A. Smith and K. Struhl.** 1988. *Current protocols in molecular biology.* John Wiley and sons, New York.
- BAC-TO-BAC baculovirus expression system manual*, Life technologies GIBCO BRL.
- Ball, J.M., P. Tian, C.Q.-Y Zeng, A.P. Morris and M.K. Estes.** 1996. Age-dependant diarrhea induced by a rotaviral nonstructural glycoprotein. *Science* **272**, 101-104.
- Bansal, O.M., A. Stokes, A. Bansal, D. Bishop and P. Roy.** 1998. Membrane organisation of bluetongue virus nonstructural glycoprotein NS3. *J. Virol.* **72**, 3362-3369.
- Barco, A and L. Carrasco.** 1998. Identification of regions of poliovirus 2BC protein that are involved in cytotoxicity. *J. Virol.* **72**, 3560-3570.
- Basak, A.K., P. Gouet, J. Grimes, P. Roy and D. Stuart.** 1996. Crystal structure of the top domain of African horsesickness virus VP7: comparisons with bluetongue virus VP7. *J Virol* **70**, 3797-3806.
- Bassel-Duby, R., A. Jayasuriya, D. Chatterjee, N. Soneberg, J.V. Maizel and B.N. Fields.** 1985. Sequence of reovirus haemagglutinin predicts a coiled-coil structure. *Nature* **315**, 421-423.
- Belsham, G.J.** 1992. Dual initiation sites of protein synthesis on foot-and-mouth disease virus RNA are selected following internal entry and scanning of ribosomes *in vivo*. *EMBO J.* **11**, 1105-1110.
- Belyaev, A.S. and P. Roy.** 1992. Presentation of hepatitis B virus preS2 epitoped on bluetongue virus core-like particles. *Virology* **190**, 840-844.
- Benedetto, A., G.B. Rossi, C. Amici, F. Belardelli, L. Cioe, G. Carruba and L. Carrasco.** 1980. Inhibition of animal virus production by means of translation inhibitors unable to penetrate normal cells. *Virology* **106**, 123-132.
- Bentley, L., J. Fehrsen, F. Jordaan, H. Huismans and D.H. Du Plessis.** 2000. Identification of antigenic regions on VP2 of African horsesickness virus serotype 3 by using phage-display epitope libraries. *J. Gen. Virol.* **81**, 993-1000.

- Birnboim, H.C. and J. Doly.** 1979. A rapid alkaline extraction procedure for screening recombinant plasmid DNA. *Nucleic Acids Res.* **7**, 1513-1523.
- Borden, E.C., R.E. Shorpe and F.A. Murphy.** 1971. Physicochemical and morphological relationships of some arthropod-borne viruses to bluetongue virus – a new taxonomic group. Physicochemical and serological studies. *J. Gen. Virol.* **13**, 261-271.
- Bremer, C.W.** 1976. A gel electrophoretic study of the protein and nucleic acid components of African horsesickness virus. *Onderstepoort J. vet. Res.* **43**, 193-200.
- Browne, E.P., A.R. Bellamy and J.A. Taylor.** 2000. Membrane–destabilising activity of rotavirus NSP4 is mediated by a membrane-proximal amphipathic domain. *J. Gen. Virol.* **81**, 1955-1959.
- Burrage, T.G., T. Trevejo, M. Stone-Marschat and W.W. Laegried.** 1993. Neutralising epitopes of African horsesickness virus serotype 4 are located on VP2. *Virology* **196**, 799-803.
- Burrage, T.G. and W.W. Laegried.** 1994. African horsesickness: pathogenesis and immunity. *Comp. Immun. Microbiol. Infect. Dis.* **17**, 275-285.
- Burroughs, J.N., R.S. O’Hara, C.J. Smale, C. Hamblin, A. Walton, R. Armstrong and P.P.C. Mertens.** 1994. Purification and properties of virus particles, infectious subviral particles, cores and VP7 crystals of African horsesickness virus serotype 9. *J. Gen. Virol.* **75**, 1849-1857.
- Butko, P., F. Huang, M. Pusztai-Carey and W.K. Surewicz.** 1996. Membrane permeabilisation induced by cytolytic δ -endotoxin CytA from *Bacillus thuringiensis* var. *israelensis*. *Biochemistry* **35**, 11355-11360.
- Cao, X., I.E. Bergmann, R. Fullkrug and E. Beck.** 1995. Functional analysis of the two alternative translation initiation sites of foot-and-mouth disease virus. *J. Virol.* **69**, 560-563.
- Carrasco, L.** 1994. Modification of membrane permeability by animal viruses. *Adv. Vir. Res.* **45**, 61-112.
- Carrasco, L., M.J. Otero and J.L. Castrillo.** 1989. Modification of membrane permeability by animal viruses. *Pharmac. Ther.* **40**, 171-212.
- Chambers, M.A., G. Dougan, J. Newman, F. Brown, J. Crowther, A.P. Mould, M.J. Humphries, M.J. Francis, B. Clarke, A.L. Brown and D. Rowlands.** 1996. Chimeric hepatitis B virus core particles as probes for studying peptide-integrin interactions. *J. Virol.* **70**, 4045-4052.
- Chan, W.K., K.S. Au, and M.K. Estes.** 1988. Topography of the simian rotavirus nonstructural glycoprotein (NS28) in the endoplasmic reticulum membrane. *Virology* **164**, 435-442.
- Chang, Y., C. Liao, C. Tsao, M. Chen, C. Liu, L. Chen and Y. Lin.** 1999. Membrane permeabilisation by small hydrophobic nonstructural proteins of Japanese encephalitis virus. *J. Virol.* **73**, 6257-6264.
- Chenik, M. K. Chebli and D. Blondel.** 1995. Translation initiation at alternate in-frame AUG codons in the rabies virus phosphoprotein mRNA is mediated by a ribosomal leaky scanning mechanism. *J. Virol.* **69**, 707-712.

- Chuma, T., H. Le Blois, J.M. Sánchez-Vizcaíno, M. Diaz-Laviada and P. Roy.** 1992. Expression of the major core antigen VP7 of African horsesickness virus by a recombinant baculovirus and its use as a group-specific diagnostic reagent. *J. Gen. Virol.* **73**, 925-931.
- Chung, C.T. and R.H. Miller.** 1988. A rapid and convenient method for the preparation and storage of competent cells. *N.A.R.* **16**, 3580.
- Coetzer, J.A.W. and B.J. Erasmus.** 1994. African horsesickness virus. In *Infectious diseases of Livestock with Special Reference to South Africa*. eds J.A.W Coetzer, G.R. Thomas, R.C. Tustin. Oxford University Press. pp 460-475.
- Crowe, J., B.S. Masone and J. Ribbe.** 1995. One-step purification of recombinant proteins with the 6xHis tag and Ni-NTA resin. *Mol. Biotechnol.* **4**, 247-258.
- Dabrowski, C and J.C. Alwine.** 1988. Translational control of synthesis of simian virus 40 late proteins from polycistronic 19S late mRNA. *J. Virol.* **62**, 3182-3192.
- De Sá, R., Zellner, M. and M.J. Grubman.** 1994. Phylogenetic analysis of segment 10 from African horsesickness virus and cognate proteins from other orbiviruses. *Vir. Res.* **33**, 157-165.
- Devaney, M.A., J. Kendall and M.J. Grubman.** 1988. Characterisation of a nonstructural protein of two orbiviruses. *Virus Res.* **11**, 151-164.
- Doms, R.W., R.A. Lamb, J.K. Rose and A. Helenius.** 1993. Folding and assembly of viral membrane proteins. *Virology* **193**, 545-562.
- Dong, Y., C.Q.-Y. Zeng, J.M. Ball, M.K. Estes and A.P. Morris.** 1997. The rotavirus enterotoxin NSP4 mobilizes intracellular calcium in human intestinal cells by stimulating phospholipase C-mediated inositol 1,4,5-triphosphate production. *Proc. Natl. Acad. Sci. USA* **94**, 3960-3965.
- Du Toit, R.M.** 1944. The transmission of blue-tongue and horse-sickness by *Culicoides*. *Onderstepoort J.* **19**, 7-16.
- Erasmus, B.J.** 1972. The pathogenesis of African horsesickness. *Proc. 3rd Int. Conf. Equine. Infectious diseases*, Paris, pp 1-11.
- Estes, M.K., G. Kang, C.Q. Zeng, S.E. Crawford and M. Ciarlet.** 2001. Pathogenesis of rotavirus gastroenteritis. *Novartis Found. Symp.* **238**, 82-96.
- Felgner, P.L, T.R. Gadek, M. Holm, R. Roman, H.W. Chan, M. Wenz, J.P. Northrop, G.M. Ringold and M. Danielsen.** 1987. Lipofection: a highly efficient, lipid mediated DNA-transfection procedure. *Proc. Natl. Acad. Sci USA* **84**, 7413-7417.
- Fernandez-Fernandez, M.R., J.L. Martinez-Torrecedrada, J.I. Casal and J.A. Garcia.** 1998. Development of an antigen presentation system based on plum pox potyvirus. *FEBS Lett.* **427**, 229-235.
- Frangione-Beebe, M., B. Albrecht, N. Dakappagari, R.T. Rose, C.L. Brooks, S.P. Schwendeman, M.D. Lairmore and P.T. Kaumaya.** 2000. Enhanced immunogenicity of a conformational epitope of human T-lymphotropic virus type 1 using a novel chimeric peptide. *Vaccine* **19**, 1068-1081.

- French, T.J., S. Inumaru and P. Roy.** 1989. Expression of two related nonstructural proteins of bluetongue virus (BTV) type 10 in insect cells by a recombinant baculovirus; production of polyclonal ascitic fluid and characterization of the gene product in BTV-infected BHK cells. *J. Virol.* **63**, 3270-3278.
- French, T.J and P. Roy.** 1990. Synthesis of bluetongue virus (BTV) corelike particles by a recombinant baculovirus expressing the two major structural core proteins. *J. Virol.* **64**, 1530-1536.
- Gale, M., S.-L. Tan and M.G. Katze.** 2000. Translational control of viral gene expression in eukaryotes. *Micro. Mol. Biol. Rev.* **64**, 239-280.
- Gallina, A., A. De Koning, F. Rossi, R. Calogero, R. Manservigo and G. Milanese.** 1992. Translational modulation in Hepatitis B virus preS-S open reading frame expression. *J. Gen. Virol.* **73**, 139-148.
- Garoff, H.** 1985. Using recombinant DNA techniques to study protein targeting in eukaryotic cells. *Ann. Rev. Cell. Biol.* **1**, 403-450.
- Geourjon, C., G. Deleage and B. Roux.** 1991. Antheprot: an interactive graphics software for analyzing protein structures from sequences. *J. Mol. Graph.* **9**, 188-190.
- Good, P.J., R.C. Welch, A. Barkan, M.B. Somasekhar and J.E. Mertz.** 1988. Both VP2 and VP3 are synthesised from each of the alternatively spliced late 19S RNA species of Simian virus 40. *J. Virol.* **62**, 944-953.
- Gonzalez, M.E. and L. Carrasco.** 1998. The human immunodeficiency virus type 1 Vpu protein enhances membrane permeability. *Biochem.* **29**, 13710-13719.
- Gorman, B.M. and J. Taylor.** 1985. Orbiviruses. In: *Virology*. eds B.M. Fields. Raven press, New York. pp 907-925.
- Grimes, J.M., A.K. Basak, P. Roy and D. Stuart.** 1995. The crystal structure of bluetongue virus VP7. *Nature* **373**, 167-170.
- Grubman, M.J., and S.A. Lewis.** 1992. Identification and characterisation of the structural and nonstructural proteins of African horsesickness virus and determination of the genome coding assignments. *Virology* **186**, 444-451.
- Haarr, L., H.S. Marsden, C.M. Preston, J.R. Smiley, W.C. Summers and W.P. Summers.** 1985. Utilization of internal AUG codons for initiation of protein synthesis directed by mRNAs from normal and mutant genes encoding Herpes simplex virus-specified thymidine kinase. *J. Virol.* **56**, 512-519.
- Harlow, E. and D. Lane.** 1988. *Antibodies: A laboratory manual*. Cold Spring Harbour Laboratory, USA, 726 pp.
- Hassan, S.H., C. Wirblich, M. Forzan and P. Roy.** 2001. Expression and functional characterisation of bluetongue virus VP5 protein: role in cellular permeabilisation. *J. Virol.* **75**, 8356-8367.
- Heal, K.G., H.R. Hill, P.G. Stockley, M.R. Hollingdale and A.W. Taylor-Robinson.** 1999. Expression and immunogenicity of a liver stage malaria epitope presented as a foreign peptide on the surface of RNA-free MS2 bacteriophage capsids. *Vaccine.* **18**, 251-258.

- Hedge, R.S. and V.R. Lingappa.** 1997. Membrane protein biogenesis: Regulated complexity at the endoplasmic reticulum. *Cell* **91**, 575-582.
- Heermann, K.H., U. Goldman, W. Schwartz, T. Seyffarth, H. Baumgarten and W.H. Gerlich.** 1984. Large surface proteins of hepatitis B virus containing the pre-S sequence. *J. Virol.* **52**, 396-402.
- Hewat, E.A., T.F. Booth, P.T. Loudon and P. Roy.** 1992. Three-dimensional reconstruction of baculovirus expressed bluetongue virus core-like particles by cryo-electron microscopy. *Virology* **189**, 10-20.
- Hjelmeland, LM.** 1990. Solubilisation of native membrane proteins in *Methods in Enzymology*. Academic Press Inc. New York.
- Hopp, T.P. and K.R. Woods.** 1981. Prediction of protein determinants from amino acid sequences. *Proc. Natl. Acad. Sci USA* **78**, 3824-3828.
- Hochuli, E., H. Döbeli, A. Schaber.** 1987. New metal chelate adsorbent selective for proteins and peptides containing neighbouring histidine residues. *J. Chromatography* **411**, 177-184.
- Holton, R.H. and G.A. Gentry.** 1996. The Epstein-Barr virus genome encodes deoxythymidine kinase activity in a nested internal open reading frame. *Interviol.* **39**, 270-274.
- Horton, P. and K. Nakai.** 1996. A probabilistic classification system for predicting the cellular localisation sites of proteins. *Proc. Int. Conf. Intell. Syst. Mol. Biol.* **4**, 109-115.
- Horton, P. and K. Nakai.** 1997. Better prediction of protein cellular localisation sites with the k nearest neighbors classifier. *Proc. Int. Conf. Intell. Syst. Mol. Biol.* **5**, 147-152.
- Howell, P.G.** 1962. The isolation and identification of further antigenic types of African horsesickness virus. *Onderstepoort J. vet. Res.* **29**, 139-149.
- Huismans, H.** 1979. Protein synthesis in bluetongue virus-infected cells. *Virology* **92**, 385-396.
- Huismans, H. and H.J. Els.** 1979. Characterisation of the tubules associated with the replication of three different orbiviruses. *Virology* **92**, 397-406.
- Hwang, G., Y. Yang, J. Chiou and J.K. Li.** 1992. Sequence conservation among the cognate nonstructural NS3/3A protein genes of six bluetongue viruses. *Virus Res.* **23**, 151-161.
- Hyatt, A.D., A.R. Gould, B. Coupar and B.T. Eaton.** 1991. Localisation of the non-structural protein NS3 in bluetongue virus-infected cells. *J. Virol.* **72**, 2263-2267.
- Hyatt, A.D., Y. Zhao and P. Roy.** 1993. Release of bluetongue virus-like particles from insect cells is mediated by BTV nonstructural protein NS3/NS3A. *Virology* **193**, 592-603.
- Jecht, M., C. Probst and V. Gauss-Müller.** 1998. Membrane permeability induced by hepatitis A virus proteins 2B and 2BC and proteolytic processing of HAV 2BC. *Virology* **252**, 218-227.
- Jensen, M.J., I.W. Cheney, L.H. Thompson, J.O. Mecham, W.C. Wilson, M. Yamakawa, P. Roy and B.M. Gorman.** 1994. The smallest genome segment of the orbivirus, epizootic hemorrhagic disease, is expressed in virus-infected cells as two proteins and the expression differs from that of the cognate gene of bluetongue virus. *Virus Res.* **32**, 353-364.

- Jensen, M.J and W.C. Wilson.** 1995. A model for the topology of the NS3 protein as predicted from the sequence of segment 10 of epizootic haemorrhagic disease virus serotype 1. *Arch. Virol.* **140**, 799-805.
- Johnston, J.C. and D.M. Rochon.** 1996. Both codon context and leader length contribute to efficient expression of two overlapping open reading frames of cucumber necrosis virus bifunctional subgenomic mRNA. *Virology* **221**, 232-239.
- Kirkwood, C.D., B.S. Coulson and R.F. Bishop.** 1996 G3P2 rotaviruses causing diarrhoeal disease in neonates differ in VP4, VP7 and NSP4 sequence from G3P2 strains causing asymptomatic neonatal infection. *Arch. Virol.* **141**, 1661-1676.
- Kirkwood, C.D and E.A. Palombo.** 1997. Genetic characterization of the rotavirus nonstructural protein, NSP4. *Virology* **236**, 258-265.
- Kozak, M.** 1987. At least six nucleotides preceding the AUG initiator codon enhance translation in mammalian cells. *J. Mol. Biol.* **196**, 947-950.
- Kozak, M.** 1991. An analysis of vertebrate mRNA sequences: Intimations of translational control. *J. Cell. Biol.* **115**, 887-903.
- Kozak, M.** 1995. Adherence to the first AUG rule when a second AUG codon follows closely upon the first. *Proc. Natl. Acad. Sci. USA* **92**, 2662-2666.
- Kozak, M.** 1999. Initiation of translation in prokaryotes and eukaryotes. *Gene* **234**, 187-208.
- Kuo, M.D., C. Chin, S.L. Hsu, J.Y. Shiao, T.M. Wang and J.H. Lin.** 1996. Characterisation of the NTPase activity of Japanese encephalitis virus NS3 protein. *J. Gen. Virol.* **77**, 2077-2084.
- Laegried, W.W., T.G. Burrage, M. Stone-Marschat and A. Skowneck.** 1992a. Electron microscopical evidence for endothelial infection by African horsesickness virus. *Vet. pathol.* **29**, 554-556.
- Laegried, W.W., M. Stone-Marschat, A. Skowneck and T. Burrage.** 1992b. Infection of endothelial cells by African horsesickness virus. In: *Bluetongue, African horsesickness, and related orbiviruses*. Eds. T.E Watson and B.I. Osburn. CRC Press Boca Raton, FL. pp. 807-814.
- Laegried, W.W., A. Skowneck, M. Stone-Marshcat and T. Burrage.** 1993. Characterisation of virulence variants of African horsesickness virus. *Virology* **195**, 836-839.
- Lamb, R.A., S.L. Zebedee and C.D. richardson.** 1985. Influenza virus M2 protein is an integral membrane protein expressed on the infected cell-surface. *Cell* **40**, 627-633.
- Lasnik, M.A., V.G. Porekar and A. Stalc.** 2001. Human granulocyte colony stimulating factor (hG-CSF) expressed by methylotrophic yeast *pichia pastoris*. *Pflugers Arch.* **442**, R184-186.
- Laviada, M.D., M. Arias and J.M. Sanchez-Vizcaino.** 1993. Characterisation of African horsesickness virus serotype 4-induced polypeptides in Vero cells and their reactivity in Western immunoblotting. *J. Gen. Virol.* **74**, 81-87.

- Le Blois, H. and P. Roy.** 1993. A single point mutation in the VP7 major core protein of bluetongue virus prevents the formation of core-like particles. *J. Virol.* **67**, 353-359.
- Lecat, S., P. Verkade, C. Theile, K. Fiedler, K. Simons and F. Lafont.** 2000. Different properties of two isoforms of annexin XIII in MDCK cells. *J. Cell Sci.* **113**, 2607-2618.
- Lewin, B.** 1994. *Genes V.* Oxford University Press, Oxford. pp 1272.
- Lewis, S.A. and M.J. Grubman.** 1991. VP2 is the major exposed protein on orbiviruses. *Arch. Virol.* **121**, 233-236.
- Lin, Y., Y-X Liu, T. Ciso, B.L. Mason and M.W. Yu.** 1991. Expression and characterization of the pre-S1 peptide of Hepatitis B virus surface antigen in *Escherichia coli*. *J. Med. Virol.* **33**, 181-187.
- Loddenkotter, B., B. Kammerer, K. Fischer and U. Flugge.** 1993. Expression of the functional mature chloroplast triose phosphate translocator in yeast internal membranes and purification of the histidine-tagged protein by a single metal-affinity chromatography step. *Proc. Natl. Acad. Sci. U.S.A.* **15**, 2155-2159.
- López de Quinto, S. and E. Martinez-Salas.** 1999. Involvement of the Aphthovirus RNA region located between the two functional AUGs in start codon selection. *Virology* **255**, 324-336.
- Lubroth, J.** 1988. African horsesickness and the epizootic in Spain 1987. *Equine Pract.* **10**, 26-33.
- Luckow, V.A., S.C Lee, G.F Barry and P.O. Olins.** 1993. Efficient generation of infectious recombinant baculoviruses by site-specific transposon mediated insertion of foreign genes into a baculovirus genome propagated in *Escherichia coli*. *J Virol* **67**, 4566-4579.
- Maass, D.R. and P.H. Atkinson.** 1990. Rotavirus proteins VP7, NS28, and VP4 form oligomeric structures. *J. Virol.* **64**, 2632-2641.
- Macreadie, I.G., C.K. Arunagiri, D.R. Hewish, J.F. White and A.A Azad.** 1996. Extracellular addition of a domain of HIV-1 Vpr containing the amino acid sequence motif H(S/F)RIG causes cell membrane permeabilization and death. *Mol. Micro.* **19**, 1185-1192.
- Maree, F.F.** 2000. Multimeric protein structures of African horsesickness virus and their use as antigen delivery systems. PhD thesis. Faculty of Biological and Agricultural Sciences, University of Pretoria.
- Maree, F.F. and H. Huismans.** 1997. Characterization of tubular structures composed of nonstructural protein NS1 of African horsesickness virus expressed in insect cells. *J. Gen. Virol.* **78**, 1077-1081.
- Maree, S, S. Durbach, F.F. Maree, F. Vreede and H. Huismans.** 1998. Expression of the major core structural proteins VP3 and VP7 of African horsesickness virus, and production of core-like particles. *Arch. Virol. Suppl.* **14**, 203-209.
- Martin, L.A., A.J. Meyer, R.S. O'Hara, H. Fu, P.S. Mellor, N.J. Knowles and P.P. Mertens.** 1998. Phylogenetic analysis of African horsesickness virus segment 10: sequence variation, virulence characteristics and cell exit. *Arch. Virol. Suppl.* **14**, 281-293.

- Martínez-Torrecuadrada, J.L., J.P.M. Langeveld, R.H. Melen and J.I. Casal.** 2001. Definition of neutralizing sites on African horse sickness virus serotype 4 VP2 at the level of peptides. *J. Gen. Virol.* **82**, 2415-2424.
- Mattion, N.M., J. Cohen and M.K. Estes.** 1994. Rotavirus proteins. In: *Viral infection in the Gastrointestinal Tract*. Eds. A. Kapikian. New York, Marcel Dekker. pp. 169-249.
- McGeoch, D.J.** 1985. On the predictive recognition of signal peptide sequences. *Virus Res.* **3**, 271-286.
- McIntosh, B.M.** 1958. Immunological types of horsesickness virus and their significance in immunisation. *Onderstepoort J. vet. Res.* **27**, 465-538.
- Mecham, J.O. and V.C. Dean.** 1988. Protein coding assignment of epizootic haemorrhagic disease virus. *J. Gen. Virol.* **69**, 1255-1262.
- Medina, M., E. Domingo, J.K. Brangwyn and G.J. Belsham.** 1993. The two species of the Foot-and-mouth disease virus leader protein, expressed individually, exhibit the same activities. *Virology* **194**, 355-359.
- Mellor, P.S.** 1993. African horse sickness: transmission and epidemiology. *Vet Res.* **24**, 199-212.
- Meyer, J.C., C.C. Bergmann and A.R. Bellamy.** 1989. Interaction of rotavirus cores with the nonstructural glycoprotein NS28. *Virology* **171**, 98-107.
- Mertens, P.P.C., F. Brown and D.V. Sangar.** 1984. Assignment of the genome segments of bluetongue virus type 1 to the proteins which they encode. *Virology* **135**, 207-217.
- Minai, L. A. Fish, M. Darash-Yahana, L. Vershovsky and R. Nechushtai.** 2001. The assembly of the PsaD subunit into the membranal photosystem I complex occurs via an exchange mechanism. *Biochemistry.* **30**, 12754-12760.
- Mikhailov, M., K. Monastyrskaya, T. Bakker and P. Roy.** 1996. A new form of particulate single and multiple immunogen delivery system based on recombinant bluetongue virus-derived tubules. *Virology* **217**, 323-331.
- Miller, M.A., M.W. Cloyd, J. Liebmann, C.R. Rinaldo, K.R. Islam, S.Z.S. Wang, T.A. Mietzner and R.C. Montelaro.** 1993. Alterations in cell membrane permeability by the lentivirus lytic peptide (LLP-1) of HIV-1 transmembrane protein. *Virology* **196**, 89-100.
- Miller, M.A. and R.C. Montelaro.** 1992. Amphipathic helical segments of HIV-1 transmembrane (TM) proteins and their potential role in viral cytopathicity. In "*Advances in Membrane Fluidity*". R.C. Aloia, Ed. A.R. Liss, New York. Vol 6, pp351-364.
- Miller, M.A., R.F. Gary, J.M. Jaynes and R.C. Montelaro.** 1991. A structural comparison between lentivirus transmembrane proteins and natural cytolytic peptides. *AIDS Res. Hum. Retroviruses* **7**, 511-519.
- Moore, D.L. and V.H. Lee.** 1972. Antigenic relationship between the virus of epizootic haemorrhagic disease of deer and bluetongue virus. *Arch. Gesamte. Virusforsch.* **37**, 282-284.

- Morris, A.P., J.K. Scott, J.M. Ball, C.Q. Zeng, W.K. O'Neal and M.K. Estes.** 1999. NSP4 elicits age-dependant diarrhes and Ca^{2+} mediated I^{-} influx into intestinal crypts of CF mice. *Am. J. Physiol.* **277**, 431-444.
- Moss, S.R., L.D. Jones and P.A. Nuttall.** 1992. Comparison of the nonstructural protein, NS3, of tick-borne and insect-borne orbiviruses. *Virology* **187**, 841-844.
- Murti, K.G., R.G. Webster and I.M. Jones.** 1988. Localisation of RNA polymerases on influenza viral ribonucleoproteins by immunogold labeling. *Virology* **164**, 562-566.
- Newton, K., J.C. Meyer, A.R. Bellamy and J.A. Taylor.** 1997. Rotavirus nonstructural glycoprotein NSP4 alters plasma membrane permeability in mammalian cells. *J. Virol.* **71**, 9458-9465.
- Nunez, E., X. Wei, C. Delgado, I. Rodriguez-Crespo, B. yelamos, J. Gomez-Gutierrez, D.L. Peterson and F. Gavilanes.** 2001. Cloning, expression and purification of histidine-tagged preS domains of hepatitis B virus. *Protein Expr. Purif.* **21**, 183-191.
- Oess, S. and E. Hildt.** 2000. Novel cell permeable motif derived from the preS2-domain of hepatitis-B virus surface antigens. *Gene Ther.* **7**, 750-758.
- O'Brein, J.A., J.A. Taylor and A.R. Bellamy.** 2000. Probing the structure of rotavirus NSP4: a short sequence at the extreme C terminus mediates binding to the inner capsid particle. *J. Virol.* **74**, 5388-5394.
- Oellerman, R.A., H.J. Els and B.J. Erasmus.** 1970. Characterisation of African horsesickness virus. *Archiv. gesammte Virusforsch.* **29**, 163-174.
- O'Hara, R.S., A.J. Meyer, L. Pullen, L-A Martin and P.P.C. Mertens.** 1998. Development of a mouse model system and identification of individual genome segments of African horsesickness virus serotypes 3 and 8 involved in determination of virulence. In: African horse sickness. P.S. Mellor, P.P.C. Mertens, M. Baylis, C. Hamblin (eds). Springer, Wien New York, pp 259-279.
- O'Reilly, D.R., L.K. Miller and V.A. Luckow.** 1992. Baculovirus expression vectors: A laboratory manual. W.H. Freeman and Company, New York.
- Parente, R.A., S. Nir and F.C. Szoka, Jr.** 1990. Mechanism of leakage of phospholipid vesicle contents induced by the peptide GALA. *Biochem.* **29**, 8720-8728.
- Parks, T.D., K.K. Leuther, E.D. Howard, S.A. Johnston and W.G. Dougherty.** 1994. Release of proteins and peptides from fusion proteins using a recombinant plant virus proteinase. *Anal. Biochem.* **216**, 413-417.
- Petrie, B.L., D.Y. Graham and M.K. Estes.** 1983. Effects of tunicamycin on rotavirus morphogenesis and infectivity. *J. Virol.* **46**, 270-274.
- Petty, I.T.D. and A.O. Jackson.** 1990. Two forms of the Major Barley Stripe Mosaic virus nonstructural protein are synthesised in vivo from alternative initiation codons. *Virology* **177**, 829-832.
- Piccone, M.E., E. Rieder, P.W. Mason and M.J. Grubman.** 1995. The Foot-and-mouth leader proteinase gene is not required for viral replication. *J. Virol.* **69**, 5376-5382.

- Piller, S.C., G.D. Edwart, A. Premkumar, G.B. Cox and P.W. Gage. 1996. Vpr protein of human immunodeficiency virus type 1 forms cation-selective channels in planar lipid bilayers. *Proc Natl Acad Sci USA* **93**, 111-115.
- Piller, S.C., P. Jans, P.W. Gage and D.J. Jans. 1998. Extracellular HIV-1 virus protein R causes a large inward current and cell death in cultured hippocampal neurons: Implications for AIDS pathology. *Proc. Natl. Acad. Sci. USA* **95**, 4595-4600.
- Pinto, L.H., L.J. Holsinger and R.A. Lamb. 1992. Influenza virus M2 protein has ion channel activity. *Cell* **69**, 517-528.
- Poisson, F., A. Severac, C. Hourieux, A. Goudeau and R. Roingard. 1997. Both pre-S1 and S domains of Hepatitis B virus envelope proteins interact with the core particle. *Virology* **228**, 115-120.
- Portner, A and K.G. Murti. 1986. Localisation of P, NP and M proteins on sendai virus nucleocapsid using immunogold labeling. *Virology* **150**, 469-478.
- Prasad, B.V. S. Yamaguchi and P. Roy. 1992. Three-dimensional structure of single-shelled bluetongue virus. *J. Virol* **66**, 2135-2142.
- Prober, J.M., G.L. Trainor, R.J. Dam, F.W. Hobbs, C.W. Robertson, R.J. Zagursky, A.J. Cocuzza, M.A. Jensen and K. Baumeister. 1987. A system for rapid DNA sequencing with fluorescent chain-terminating Dideoxynucleotides. *Science* **238**, 336-341.
- Roner, M.R., and W.K. Joklik. 2001. Reovirus reverse genetics: Incorporation of the CAT gene into the reovirus genome. *PNAS* **98**, 8036-8041.
- Roy, P. 1991. *Towards the control of emerging bluetongue disease*. Oxford Virology Publications, London, 71pp.
- Roy, P., T. Hirasawa, M. Fernandez, V.M. Blinov and J.J. Sanchez-Vixcain Rodrique. 1991. The complete sequence of the group-specific antigen, VP7, of African horsesickness disease virus serotype 4 reveals a close relationship to bluetongue virus. *J. Gen. Virol.* **72**, 1237-1241.
- Roy, P., P.P.C. Mertens and I. Casal. 1994. African Horsesickness virus structure. *Comp. Immun. Microbiol. Infect. Dis.* **17**, 243-273.
- Roy, P. 1996. Orbivirus structure and assembly. *Virology* **216**, 1-11.
- Ruiz, M.C., J. Cohen and F. Michelangeli. 2000. Role of Ca²⁺ in the replication and pathogenesis of rotavirus and other viral infections. *Cell calcium* **28**, 137-149.
- Rumlova, M., J. Benedikova, R. Cubinkova, I. Pichova and T. Ruml. 2001. Comparison of classical and affinity purification techniques of Mason-Pfizer monkey virus capsid protein: the alteration of the product by an affinity tag. *Protein Expr. Purif.* **23**, 75-83.
- Sailleau, C., C. Hamblin, J.T. Paweska and S. Zientara. 2000. Identification and differentiation of the nine African horse sickness virus serotypes by RT-PCR amplification of the serotype-specific genome segment 2. *J. Gen Virol.* **81**, 831-837.

- Sambrook, J., E.F. Fritsch and T. Maniatis.** 1989. *Molecular cloning, a laboratory manual*. Second edition. Cold Spring Harbor Laboratory Press.
- Sanderson, C.M., J.E. Parkinson, M. Hollinshead and G.I. Smith.** 1996. Over expression of the vaccinia virus A38L integral membrane protein promotes Ca²⁺ influx into infected cells. *J Virol* **70**, 905-914.
- Sangar, D., S.E. Newton, D.J. Rowlands and B.E. Clarke.** 1987. All foot-and-mouth disease virus serotypes initiate protein synthesis at two separate AUGs. *Nucleic Acids Res.* **15**, 3305-3315.
- Sanger, F., S. Nicklen and A.R. Coulson.** 1977. DNA sequencing with chain-terminating inhibitors. *Proc. Natl. Acad. Sci. USA* **74**, 5463-5467.
- Sansom, M.S.P., L.R. Forrest and R. Bull.** 1998. Viral ion channels: molecular modelling and simulation. *BioEssays* **20**, 992-1000.
- Santantonio, T., M. Jung, R. Schneider, D. Fernholz, M. Milella, L. Monno, G. Pastore, G.R. Pape and H. Will.** 1992. Hepatitis B virus genomes that cannot synthesize pre-S2 proteins occur frequently and as dominant virus populations in chronic carriers in Italy. *Virology* **188**, 948-952.
- Sanz, M.A., L. Perez, and L. Carrasco.** 1994. Semliki Forest virus 6K protein permeability after inducible expression in *Escherichia coli* cells. *J. Biol. Chem.* **269**, 12106-12110.
- Schlegel, R. and M. Wade.** 1985. Biologically active peptides of the vesicular stomatitis virus glycoprotein. *J. Virol.* **53**, 319-323.
- Schmidt, M., N. tuominen, T. Johansson, S.A. Weiss, K. Keinanen and C. Oker-Blom.** 1998. Baculovirus-mediated large-scale expression and purification of a polyhistidine-tagged rubella virus capsid protein. *Protein Expr. Purif.* **12**, 323-330.
- Sedman, S.A. and J.E. Mertz.** 1988. Mechanisms of synthesis of virion proteins from the functionally bigenic late mRNAs of simian virus 40. *J. Virol.* **62**, 954-961.
- Segrest, J.P., H. De Loof, J.G. Dohlman, C.G. Brouillette and G.M. Anantharamaiah.** 1990. Amphiphathic helix motif: classes and properties. *Proteins* **8**, 103-117.
- Sheu, S.Y. and S. Lo.** 1992. Preferential ribosomal scanning is involved in the differential synthesis of Hepatitis B virus surface antigens from subgenomic transcripts. *Virology* **188**, 353-357.
- Skowneck, A.J., L. LaFranco, M.A. Stone-Marschat, T.G. Burrage, A.H. Rebar and W. W. Burrage.** 1995. Clinical pathology and Hemostatic abnormalities in experimental African horsesickness. *Vet. Pathol.* **32**, 112-121.
- Small, I., H. Wintz, K. Akashi and H. Mireau.** 1998. Two birds with one stone: genes that encode products targeted to two or more compartments. *Plant Mol. Biol.* **38**, 265-277.
- Smit, C.C.** 1999. Identification of critical functional domains of nonstructural protein NS3 of African horsesickness virus. MSc Thesis, Faculty of Biological and Agricultural Sciences, University of Pretoria.

- Souicet, G., B. Menand, J. Ovesnat, A. Cosset, A. Dietrich and H. Wintz.** 1999. Characterization of two bifunctional *Arabidopsis thaliana* genes coding for mitochondrial and cytosolic forms of valyl-tRNA synthetase and threonyl-tRNA synthetase by alternative use of two in-frame AUGs. *Eur. J. Biochem.* **266**, 848-854.
- Stoltz, M.A., C.F. van der Merwe, J. Coetzee and H. Huismans.** 1996. Subcellular localisation of the nonstructural protein NS3 of African horsesickness virus. *Onderstepoort J. vet. Res.* **63**, 57-61.
- Stuart, D.I., P. Gouet, J. Grimes, R. Malby, J. Diprose, S. Zientara, J.N. Burroughs and P.P. Mertens.** 1998. Structural studies of orbivirus particles. *Arch Virol Suppl* **14**, 235-250.
- Summers, J., P.M. Smith, M. Huang and M. Yu.** 1991. Morphogenetic and regulatory effects of mutations in the envelope protein of an avian hepadnavirus. *J. Virol.* **65**, 1310-1317.
- Suzuki, N., M. Harada and T. Kusano.** 1991. Molecular analysis of rice dwarf phyto-reovirus segment S11 corresponding to wound tumour phyto-reovirus segment S12. *J. Gen. Virol.* **72**, 2233-2237.
- Suzuki, T., T. Yoshida and S. Tuboi.** 1992. Evidence that rat liver mitochondrial and cytosolic fumarases are synthesised from one species of mRNA by alternative translational initiation at two in-phase AUG codons. *Eur. J. Biochem.* **207**, 767-772.
- Swaggerty, C.L., A.A. Frolov, M.J. McArthur, V.W. Cox, S. Tong R.W. Compans and J.M. Ball.** 2000. The envelope glycoprotein of Simian immunodeficiency virus contains an enterotoxin domain. *Virology* **277**, 250-261.
- Tan, B-H, E. Nason, N. Staeuber, W. Jiang, K. Monastyrskaya and P. Roy.** 2001. RGD tripeptide of bluetongue virus VP7 protein is responsible for core attachment to *Culicoides* cells. *J. Virol.* **75**, 3937-3947.
- Taylor, J.A., J.C. Meyer, M.A. Legge, J.A. O'Brein, J.E. Street, V.J. Lord, C.C. Bergmann and A.R. Bellamy.** 1992. Transient expression and mutational analysis of the rotavirus intracellular receptor: the C-terminal methionine residue is essential for ligand binding. *J. Virol.* **66**, 3566-3572.
- Taylor, J.A., J.C. O'Brein, V.J. Lord, J.C. Meyer and A.R. Bellamy.** 1993. The RER-localised rotavirus intracellular receptor: a truncated purified soluble form is multivalent and binds virus particles. *Virology* **194**, 807-814.
- Taylor, J.A., J.A. O'Brein and M. Yeager.** 1996. The cytoplasmic tail of NSP4, the endoplasmic reticulum-localised non-structural glycoprotein of rotavirus, contains distinct virus binding and coiled coil domains. *EMBO J.* **15**, 4469-4476.
- Theiler, A.** 1921. African horsesickness. Science Bulletin no. 19, Department of Agriculture. S.A. Pretoria.
- Theron, J., J.M. Uitenweerde, H. Huismans and L.H. Nel.** 1994. Comparison of the expression and phosphorylation of the non-structural protein NS2 of three different orbiviruses: evidence for the involvement of an ubiquitous cellular kinase. *J. Gen. Virol.* **75**, 3401-3411.
- Tian, P., Y. Hu, W.P. Schilling, D.A. Lindsay, J. Eiden and M.K. Estes.** 1994. The nonstructural glycoprotein of rotavirus affects intracellular calcium levels. *J. Virol.* **68**, 251-257.

- Tian, P., J.M. Ball, C.Q.-Y. Zeng and M.K. Estes.** 1996. The rotavirus nonstructural glycoprotein NSP4 possesses membrane destabilization activity. *J. Virol.* **70**, 6973-6981.
- Tian, P., M.K. Estes, Y. Hu, J.M. Ball, C.Q.-Y. Zeng and W.P. Schilling.** 1996a. The rotavirus nonstructural glycoprotein NSP4 mobilizes Ca^{2+} from the endoplasmic reticulum. *J. Virol.* **69**, 5763-5772.
- Turnbull, P.J., S.B. Cormack and H. Huismans.** 1996. Characterization of the gene encoding core protein VP6 of two African horsesickness virus serotypes. *J. Gen. Virol.* **77**, 1421-1423.
- Ueda, K., T. Tsurimoto and K. Matsubara.** 1991. Three envelope protein of Hepatitis B virus: Large S, Middle S and Major S proteins needed for the formation of Dane particles. *J. Virol.* **65**, 3521-3529.
- Uitenweerde, J.M., J. Theron, M.A. Stoltz and H. Huismans.** 1995. The multimeric nonstructural NS2 proteins of bluetongue virus, African horsesickness virus and epizootic haemorrhagic disease virus differ in their single-stranded RNA binding ability. *Virology* **209**, 624-632.
- Urakawa, T and P. Roy.** 1988. Bluetongue virus tubules made in insect cells by recombinant baculoviruses: expression of the NS1 gene of bluetongue virus serotype 10. *J. Virol.* **62**, 3919-3927.
- Urbano U. and G.F. Urbano.** 1994. The Reoviridae family. *Comp. Immun. Microbiol. Infect. Dis.* **17**, 151-161.
- Van Dijk, A.A. and H. Huismans.** 1988. In vitro transcription and translation of bluetongue virus mRNA. *J. Gen. Virol.* **69**, 573-581.
- Van Niekerk, M., C.C. Smit, W.C. Fick, V. van Staden and H. Huismans.** 2001a. Membrane association of African horsesickness virus nonstructural protein NS3 determines its cytotoxicity. *Virology* **279**, 499-508.
- Van Niekerk, M., V. van Staden, A.A. van Dijk and H. Huismans.** 2001b. Variation of African horsesickness virus nonstructural protein NS3 in southern Africa. *J. Gen. Virol.* **82**, 149-158.
- Van Staden, V.** 1993. Characterization and expression of the gene that encodes nonstructural protein NS3 of African horsesickness virus. PhD Thesis, Faculty of Science, University of Pretoria 162pp.
- Van Staden, V. and H. Huismans.** 1991. A comparison of the genes which encode nonstructural protein NS3 of different orbiviruses. *J. Gen. Virol.* **72**, 1073-1090.
- Van Staden, V., C.C. Smit, M.A. Stoltz, F.F. Maree and H. Huismans.** 1998. Characterization of two African horsesickness virus nonstructural proteins, NS1 and NS3. *Arch. Virol.* **14**, 251-258.
- Van Staden, V., M.A. Stoltz and H. Huismans.** 1995. Expression of nonstructural protein NS3 of African horsesickness virus (AHSV): evidence for a cytotoxic effect of NS3 in insect cells, and characterisation of the gene products in AHSV-infected VERO cells. *Arch. Virol.* **140**, 289-306.
- Venter, G.J., S.D. Graham and C. Hamblin.** 2000. African horse sickness epidemiology: vector competence of South African Culicoides species for virus serotypes 3, 5 and 8. *Med. Vet. Entomol.* **12**, 245-250.

- Verwoerd, D.W., H. Huismans and B.J. Erasmus.** 1979. Orbiviruses. In: *Comprehensive Virology*, Vol. 14, H. Fraekel-Conrat and R.R. Wagner (Eds.), pp. 285-345. Plenum Press, New York.s
- Vreede, F.T. and H. Huismans.** 1994. The cloning, characterization and expression of the gene that encodes the major neutralisation-specific antigen of African horsesickness virus serotype 3. *J. Gen. Virol.*
- Wade-Evans, A.M., L. Pullen, C. Hamblin, R.S. O'Hara, J.N. Burroughs and P.P.C. Mertens.** 1997. African horsesickness virus VP7 sub-unit vaccine protects mice against a lethal, heterologous serotype challenge. *J. Gen. Virol.* **78**, 1611-1616.
- Wade-Evans, A.M., L. Pullen, C. Hamblin, R.S. O'Hara, J.N. Burroughs and P.P.C. Mertens.** 1998. VP7 from African horse sickness virus serotype 9 protects mice against a lethal, heterologous serotype challenge. *Arch. Virol.* **14**, 211-219.
- Walter, P. and V.R. Lingappa.** 1986. Mechanism of protein translocation across the endoplasmic reticulum membrane. *Annu. Rev. Cell. Biol.* **2**, 499-516.
- Westra, D.F., G.W. Welling, D.G. Koedijk, A.J. Scheffer, T.H. The and S. Welling-Wester.** 2001. Immobilised metal-ion affinity chromatography purification of histidine-tagged recombinant proteins: a wash step with a low concentration of EDTA. *J. Chromatogr. Biomed. Sci. Appl.* **25**, 129-136.
- Xia, X. and G. Serrero.** 1999. Multiple forms of p55PIK, a regulatory subunit of phosphoinositide 3-kinase, are generated by alternative initiation of translation. *Biochem J.* **341**, 831-837.
- Yamakawa, M., M. Kubo and S. Furuuchi.** 1999. Molecular analysis of the genome of Chuzan virus, a member of the Palyam serogroup viruses, and its phylogenetic relationship to other orbiviruses. *J. Gen. Virol.* **80**, 937-941.
- Zhang, M., C.Q. Zeng, A.P. Morris and M.K. Estes.** 2000. A functional NSP4 enterotoxin peptide secreted from rotavirus-infected cells. *J Virol* **74**, 11663-11670.
- Zhao, Y., C. Thomas, C. Bremer and P. Roy.** 1994. Deletion and mutational analysis of bluetongue virus NS2 protein indicates that the amino- but not the carboxy-terminal of the protein is critical for RNA-protein interactions. *J. Virol.* **68**, 2179-2185.