**Supplementary table 1: Primer and probe sequences**

Detection of neurotropic astroviruses BoAstV-CH13 & ovAstV-CH16

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| Name | Primer/Probe Sequence ( 5' - 3' ) a | Target | Reference |
| CH13-A\_Forward  CH13-A\_Reverse  CH13-A\_Probe | AGGCATGACTATGAGCGCGT  AATCCGGTTGTGCCACCTCA  FAMGGCAACGCACAGGCACTTGBHQ1 | BoAstV-CH13: Part of 5' end of ORF1a | Lüthi R, Boujon CL, Kauer R, Koch MC, Bouzalas IG, and Seuberlich T. 2018. Accurate and precise real-time RT-PCR assays for the identification of astrovirus associated encephalitis in cattle. Scientific Reports 8:9215. 10.1038/s41598-018-27533-8 |
| CH13-B\_Forward  CH13-B\_Reverse  CH13-B\_Probe | TTTTGGCTCGTCACTTTGTG  ACAACCTCCTTGGCAATCTG  FAMGATAAGCTTTGGAGGGGAGGBHQ1 | BoAstV-CH13: Center of ORF2 |
| CH16\_Forward  CH16\_Reverse  CH16\_Probe | CGTAGCACCCCCTTACAGCA  CCTCGATCCTACTCGGCGTG  FAMCTTAGAGGCCACGCAGAAGCBHQ1 | OvAstV-CH16: 3' end of ORF2 | Kuchler L, Koch MC, Seuberlich T, and Boujon CL. 2019. Archive Mining Brings to Light a 25-Year Old Astrovirus Encephalitis Case in a Sheep. Front Vet Sci 6:51. 10.3389/fvets.2019.00051 |

aFAM, 6-Carboxyfluorescein; BHQ1, Black Hole Quencher 1

Detection of various astroviruses using PanAstV-RT-PCR

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| Name | Primer/Probe Sequence ( 5' - 3' ) a | Target | Reference |
| PanAstV\_Forward1  PanAstV\_Forward2  PanAstV\_Reverse  PanAstV\_Forward\_nested1  PanAstV\_Forward\_nested2 | GARTTYGATTGGRCKCGKTAYGA  GARTTYGATTGGRCKAGGTAYGA  GGYTTKACCCACATNCCRAA  CGKTAYGATGGKACKATHCC  AGGTAYGATGGKACKATHCC | Various AstV: 3' end of ORF1b | Chu DK, Chin AW, Smith GJ, Chan KH, Guan Y, Peiris JS, and Poon LL. 2010. Detection of novel astroviruses in urban brown rats and previously known astroviruses in humans. J Gen Virol 91:2457-2462. 10.1099/vir.0.022764-0 |

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| Name | Primer/Probe Sequence ( 5' - 3' ) a | Target |
| CapAstV-G2.1\_500R  CapAstV-G2.1\_301R | GTGATGTTAGGACCGCGTCA  AGTGGGCCAACTGAGTGTAA | 5' end position as indicated in primer-annotation |
| CapAstV-G3.1\_508R  CapAstV-G3.1\_320R | ACGAATAAGGCATGACCGCA  AAAGCCTGTGATCCATGCCA |
| CapAstV-G5.1\_519R  CapAstV-G5.1\_325R | TCCGTTGTGGAAGTGGTTGT  GGCACGATCATTCATCAGCG |
| OvAstV-S5.1\_518R  OvAstV-S5.1\_325R | CTGTCTTCATGGCGTTCTCA  ATTACGGTGTTGGGCCAGTT |
| OvAstV-S6.1\_501R  OvAstV-S6.1\_309R | TGTATGATGGGTGTGGACTGT  AGTGGTGCTCCTCTCTTCAT |

Rapid amplification of cDNA-ends

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| Name | Primer/Probe Sequence ( 5' - 3' ) a | Target |
| G2.1\_F  G2.1\_R  G2.1\_P | GGGCCAGCATGAAATACACCAG  AGGGATGACCAGCTGACTTGAG  FAMCCGAGTGTCAGCCGTTCCTA BHQ1 | Position 4'006 to 4'305 (ORF2) |
| G3.1\_F  G3.1\_R  G3.1\_P | CCAACACAAGTGTCGTGGTCAG  CAAGTTCATTAGGCCAGGCTGC  FAMAACACTCTGACACCACCCCG BHQ1 | Position 4'219 to 4'518 (ORF2) |
| G5.1\_F  G5.1\_R  G5.1\_P | CAACCACGCTGGATAATGGTGG  AGGCATTTTGAGGGGTCCTGAT  FAMCCAGGCACAGGCTCAGATCA BHQ1 | Position 5'385 to 5'684 (ORF2) |
| S5.1\_F  S5.1\_R  S5.1\_P | CCTTGCATTGCCTGTTGGAGAG  TGTGCCTGGGTGTATGATGGTC  FAMCCAACGCGAGGTATCCCTGT BHQ1 | Position 5'155 to 5'454 (ORF2) |
| S6.1\_F  S6.1\_R  S6.1\_P | ACACAAACATCGTGGAGTGCAC  AAGCAAATTCACCATCCCAGGC  FAMCGCTGGAACACTGGAATGCC BHQ1 | Position 4'285 to 4'548 (ORF2) |

Detection of neurotropic astroviruses BoAstV-CH13 & ovAstV-CH16; PanAstV-RT-PCR