



Correction

# Correction: Saarinen, N.V.V., et al. Multiplexed High-Throughput Serological Assay for Human Enteroviruses. *Microorganisms* 2020, 8, 963

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The authors wish to make the following correction to this paper [1]: The protein sequence corresponding to RV-A89 VP1 was erroneous in Table A2.

**Table A2.** Complete amino acid sequences of the recombinant VP1 antigens. VP1 parts unique to each antigen are typed in **bold**.

Antigen	Sequence
CVA4 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFEL GLEFPNLPYYIDGDVKLQSMIIIRYIADKHNMLGGCPKERAISMLEG AVLDIRYGVSRVIAYSKDFETLKVDFLSKLPMLKMFEDRLCHKTYLNGD HVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLK SSKYIAWPLQGQWQATFGGGDHPPKSDLVPRGSGDAIADAIQNTVTST IQRVTNTVGGQDATAANTAPSSHSLNTGLVPALQAAETGASSTATD GNLIETRCVVNSNGTRETTHIEHFFSRSLVGVMEVDDTGTSGKGF NWDIDIMAFVQLRRKLEAFTYMRFDAEFTFVTNLENGLTNNSVIQY MYVPPGAPKPDARESFWQQTATNPSVFQKMDSPPPQVSVPFMSPAS AYQWFYDGYPTFGPHSETSNLSYGQCPNNMLGTFSARVVSKQITN QKFQIRIYLRKRVRAWIPRLRSQPYIYRNYPTYGTTIQYLAKDRR KITETDYNAEQR THPGHHHHHHHPG

Table A2. Cont.

Antigen	Sequence
CVB1 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLE FPNLPYYIDGDVKTQSMARIYIADKHNMLGGCPKERAISMLEGAVLDIR YGVSRAYSKDFETLKVDFLSKLPPEMLKMFEDRLCHKTYLNGDHVTHPDFM LYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKYIAWPLQG WQATFGGGDHPPKSDLVPRGSGPVEESVERAMVRVADTVSSKPTNSESI PALTAAETGHTSQVVPSDTMQTRHVKNYHSRSESSIENFLCRSACVYY ATYTNNSSKGYAEWVINTRQVAQLRRKLELFTYLRFDLELTFVITSAQQ PSTATSVDAVPQTHQIMYVPPGGPVPTKVTDYAWQTSTNPSVFWTEG NAPPRMSIPFISIGNAYSFCYDGTQFSRNGVYGINLTNNMGTLYMRH VNEAGQGPIKSTVRIYFKPKHVKAWVPRPP RLCQYEKQKNVNFNPTGVTTRSNTITGAFPGHHHHHPG
PV1 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLE FPNLPYYIDGDVKTQSMARIYIADKHNMLGGCPKERAISMLEGAVLDI RYGVSRAYSKDFETLKVDFLSKLPPEMLKMFEDRLCHKTYLNGDHVTHPD FMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKYIAWPLQ GWQATFGGGDHPPKSDLVPRGSLGQMLSESMIDNTVRETVGAATSRDA LPNTEASGPAHSKEIPALTAIVETGATNPLVPSDTVQTRHVQHRSRSESS IESFFARGACVAIITVDNSASTKNKDKLFTVWKITYKDTVQLRRKLEFFT YSRFDMEFTFVV TANFTETNNGHALNQVYQIMYVPPGAPVPEKWDDY TWQTSNPSIFITYGTAPARISVPYVGISNAYSHFYDGFVKVPLKQDSAA LGDSLYGAASLNDFGILAVRVVNDHNPTKVTSKIRVYLKPKHIRVWCPR PPRAVAYYGPVVDYKDGTLTPLSTKDLTTY GHHHHHPG
EV-D68 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEF PNLPPYYIDGDVKTQSMARIYIADKHNMLGGCPKERAISMLEGAVLDIR YGVSRAYSKDFETLKVDFLSKLPPEMLKMFEDRLCHKTYLNGDHVTHPDFML YDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKYIAWPLQG WQATFGGGDHPPKSDLVPRGSLDHLDAEAAAYQIESIIKTATDVTKSEISA ELGVVPSLNAVETGASSNTEPEEAIQTRTVINQHG VSETLVENFLSRAAL VSKRSFEYKNHTSSKARTDKNFFKWTINTKSFVQLRRKLELFTYLRFDA EITILTTAVANGSSNSTYMGLPDLTLQAMFVPTGALTPEKQDSFHWQSG SNASVFFKISDPPARM TIPFMCINSAYSVFYDGFAGFEKSGLYGINPADI GNLCVRIVNEHQPIGFTVTVRVYMKPKHIKAWAPRPPRTL PYMSIANAN YRGKDRAPNALNAIIGNRESVKTMPHNI VTTPGHHHHHPG
RV-A89 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEF PNLPPYYIDGDVKTQSMARIYIADKHNMLGGCPKERAISMLEGAVLDIRY VSRAYSKDFETLKVDFLSKLPPEMLKMFEDRLCHKTYLNGDHVTHPDFM LYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKYIAWPLQGWQATF GGGDHPPKSDLVPRGS LDHLDAEAAAYQIESIIKTATDVTKSEISAELGVVPSLNAVETGASSNTEPEEAIQTR TVINQHG VSETLVENFLSRAALVSKRSFEYKNHTSSKARTDKNFFKWTINTKSFVQLR RKLELFTYLRFDAEITILTTAVANGSSNSTYMGLPDLTLQAMFVPTGALTPEKQDSFHW QSGSNASVFFKISDPPARM TIPFMCINSAYSVFYDGFAGFEKSGLYGINPADI GNLCVRIVNEHQPIGFTVTVRVYMKPKHIKAWAPRPPRTL PYMSIANAN YRGKDRAPNALNAIIGNRESVKTMPHNIVTTPGHHHHHPG
RV-B14 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDVK LTQSMARIYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRAYSKDFETLKVDFLSKLPPEML KMFEDRLCHKTYLNGDHVTHPDFM LYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKYIAWPLQGWQATF GGGDHPPKSDLVPRGSLGDELEEVIVEKTKQTVASISSGPKHTQK VPILTANETGATMPVLPDSIETRTTYMHFNSETDVECFLGRAACVHVTEIQNKDATGIDN HREAKLFNDWKINLSSLVQLRKKLELFTYVRFDSEYITLATASQPDSANYSSNLVVQAMVY PPGAPNPKEWDDYTWQSASNPSVFFKVGDTSRFSVPYVGLASAYNCFYDGYSHDDAETQ YGITVLNHMGSMFRIVNEHDEHKTLVKIRVYHRAKHV EAWIPRAPRALPYTSIGRTNYPKNTEPVIKRRKGDIKSYPGHHHHHPG
RV-C3 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDVK LTQSMARIYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRAYSKDFETLKVDFLSKLPPEML KMFEDRLCHKTYLNGDHVTHPDFM LYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKYIAWPLQGWQATF GGGDHPPKSDLVPRGSPNVEEFVEHTLKEVLVVPDTQASGPVHTTK PQALGAVEIGATADVGPETLIETRYVMNDNTNAEAAVENFLGRSALWANLRLLDQGRKW EINFQEAHQVRKKFEMFTYVRFDEITIVTNNKGLMQIMFVPPGIPPGGDKGREWDTAS NPSVFFQPNSGFPRFTIPFTGLGSAYMYFDGYDGTDDANINYGISLTNDMGTLCFRALDG TGASDIKVFVKPKHITAWIPRPPRATQYLHKFSTNYNPKP TSGSTELEPKHFFKYRQDITSITNLPGHHHHHPG

To the correct version, as follows:

**Table A2.** Complete amino acid sequences of the recombinant VP1 antigens. VP1 parts unique to each antigen are typed in **bold**.

Antigen	Sequence
CVA4 VP1	MSPILGYWKIKGLVQPTRLLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGD VKLTQSMIIIRYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRIAYSKDFETLKVDFLSKLP EMLKMFEDRLCHKTYLNGDHVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIPOI DKYLKSSKYIAWPLQGWQATFGGGDHPPKSDLVPRGSGDAIADAIQNTVTSTIQRVTTNTV GQDATAANTAPSSHSLNTGLVPALQAAETGASSTATDGNLIETRCVVNSNGTRETTHIEHF FSRSLVGVMEVDDTGTSGKGFNSWDIDIMAFVQLRRKLEAFTYMRFDAEFTFVNTLEN GLTNNSVIQYMYVPPGAPKPDARESFQWQTATNPSVFQKMDSPPPQVSVPFMSPASAYQ WFYDGYPTFGPHSETSNSYGCPCNNMLGTFSARVVSQKITNQKFQIRIYRLRLKRVRAWI <b>PRPLRSQPYIYRNYPTYGTTIQYLAKDRRKITETDYNAEQR</b> THPGHHHHHHHPG
CVB1 VP1	MSPILGYWKIKGLVQPTRLLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDVK LTQSMIIIRYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRIAYSKDFETLKVDFLSKLP LKMFEEDRLCHKTYLNGDHVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIPOIDK YLKSSKYIAWPLQGWQATFGGGDHPPKSDLVPRGSGPVEESVERAMVRVADTVSSKPTNSE <b>SIPALTAETGHTSQVVPSTMQTRHVKNYHSRSESSIENFLCRSACVYATYTNNSKK</b> <b>GVAEWWINTRQVAQLRRKLELFTYLRFDLELTFVITSAQQPSTATSVDAVPQTHQIMYVP</b> <b>PGGPVPTKVTDYAWQSTNPSVFWTEGNAPPRMSIPFISIGNAYSCFYDGTQFSRNGV</b> <b>YGINTLNNMGTYMRHVNEAGQGQPIKSTVRIYFKPKHVKAWVPRPP</b> <b>RLCQYEKQKNVNFNPTGVTTRSNITTTGAFFGHHHHHHHPG</b>
VP1 VP1	MSPILGYWKIKGLVQPTRLLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDV KLTQSMIIIRYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRIAYSKDFETLKVDFLSKLP EMLKMFEDRLCHKTYLNGDHVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIPOI IDKYLKSSKYIAWPLQGWQATFGGGDHPPKSDLVPRGSLDHLDAEAAEQIESIITATDTVKS <b>RDALPNTASGPAHSKEIPALTAVETGATNPLVPSDTVQTRHVQHRSRSESSIESFFARG</b> <b>ACVAIITVDNSASTKNKDKLFTVWKITYKDTVQLRRKLEFFYSRFDMEFTFVVTANFTE</b> <b>TNNGHALNQVYQIMYVPPGAPVPEKWDDYTWTSSNPSIFYTYGTAPARISVPYVGISN</b> <b>AYSHFYDGFSGVPLKQSAALGDSLYGAASLNDFGILAVRVVNDHNPTKVTSKIRVYLK</b> <b>PKHIRVWCPRPPRAVAYYGPVVDYKDGTLTPLSTKDLTTY</b> GHHHHHHHPG
EV-D68 VP1	MSPILGYWKIKGLVQPTRLLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDVK LTQSMIIIRYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRIAYSKDFETLKVDFLSKLP LKMFEEDRLCHKTYLNGDHVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIPOIDK YLKSSKYIAWPLQGWQATFGGGDHPPKSDLVPRGSLDHLDAEAAEQIESIITATDTVKS <b>EISALGVVPSLNAVETGASSNTEPEEAIQTRTVINQHGVSETLVENFLSRAVSKRSFE</b> <b>YKNHTSSKARTDKNFFKWTINTKSFVQLRRKLELFTYLRFDAEITLTTAVANGSSNSTYM</b> <b>GLPDLTLQAMFVPTGALTPEKQDSFHWQSGSNASVFFKISDPPARMTIPFMCINSAYSVF</b> <b>YDGFAGFEKSGLYGINPDTIGNLCVRIVNEHQPIGFTVTVRVYMKPKHIKAWAPRPPRT</b> <b>LPYMSIANANYRGKDRAPNALNAIIGNRESVKTMPHNI</b> VTTPGHHHHHHHPG
RV-A89 VP1	MSPILGYWKIKGLVQPTRLLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDV KLTQSMIIIRYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRIAYSKDFETLKVDFLSKLP PEMLKMFEDRLCHKTYLNGDHVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAI POIDKYLKSSKYIAWPLQGWQATFGGGDHPPKSDLVPRGSGNPVENYIDSVLNEVLVVPNIQ <b>PSTSVSSHAAPALDAAETGHTSSVQPEDMIETRYVITDQTRDETSIESFLGRSGCIAMIEF</b> <b>NTSSDKTEHDKIGKGFKTWVSLQEMAQIRRYELFTYTRFDSEITIVAAAAQGNDSG</b> <b>HIVLQFMVYVPPGAPVPEKRDDYTWQSGTNASVFWQEGQPYPRFTIPFMSIASAYMYFYD</b> <b>GYDGDASAASKYGSVVTNDMGTCVRIVTSNQKHDSNIVCRIYHKAKHIKAWCPRPPRA</b> <b>VAYQHTSTNYIPSNGEATTQIKTRPDVFTVTNVGPSSMFPGHHHHHHHPG</b>
RV-B14 VP1	MSPILGYWKIKGLVQPTRLLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDVK LTQSMIIIRYIADKHNMLGGCPKERAISMLEGAVLDIRYGVSRIAYSKDFETLKVDFLSKLP KMFEDRLCHKTYLNGDHVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIPOIDK YLKSSKYIAWPLQGWQATFGGGDHPPKSDLVPRGSGLGDELEEVIVEKTKQTVASISSGPKHT <b>QKVPILTANETGATMPVLPDSIETRTTYMHFNGSETDVECFLGRAACVHVTEIQNKDA</b> <b>TGIDNHREAKLFNDWKNLSSLVQLRKKLELFTYVRFDSEYITILATASQPDSANYSSNLVV</b> <b>QAMYVPPGAPNPKEWDDYTWQASANPSVFFKVGDTSRFSVPYVGLASAYNCFYDGYSH</b> <b>DDAETQYGITVLNHMGSMFRIVNEHDEHKTTLKIRVYHRAKHV</b> <b>EAWIPRAPRALPYTSIGRTNYPKNTEPVIKRKGDIKSYPGHHHHHHHPG</b>

Table A2. Cont.

Antigen	Sequence
RV-C3 VP1	MSPILGYWKIKGLVQPTRLLEYLEEKYEEHLYERDEGDKWRNKKFELGLEFPNLPYYIDGDVKLT QSMAIIRYIADKHNMLGGCPKERAEISMLEGAVLDIRYGVSR IAYSKDFETLKVDFLSKLPEMLKM FEDRLCHKTYLNGDHSVTHPDFMLYDALDVVLYMDPMCLDAFPKLVCFKKRIEAIQIDKYLKSSKY IAWPLQGWQATFGGGDHPPKSDLVPRGSDNPVEEFVEHTLKEVLVVPDTQASGPVHTTKPQALG AVEIGATADVGPETLIETRYVMNDNTNAEAAVENFLGRSALWANLRDQGFRKWEINFQEHA QVRKKFEMFTYVRFDEITIVTNNKGLMQIMFVPPGITPPGGKDGREWDTASNPSVFFQPNS GFPRFTIPFTGLGSAYYMFYDGYDGTDDANINYGISLTNDMGTLCFRALDGTGASDIKVF GK PKHITAWIPRPPRATQYLHKFSTNYNKPK TSGSTELEPKHFFKYRQDITSITNLPGHHHHHHPG

The authors would like to apologize for any inconvenience caused to the readers by this change.

**Conflicts of Interest:** H.H. and M.K. own stocks Vactech Ltd., which develops vaccines against picornaviruses. H.H. is the chairman of the Vactech board. H.H. and M.K. also serve on the scientific advisory board of Provention Bio Inc., which is developing an enterovirus vaccine. The other authors have no conflict of interest to declare. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

## References

1. Saarinen, N.V.V.; Lehtonen, J.; Veijola, R.; Lempainen, J.; Knip, M.; Hyöty, H.; Laitinen, O.H.; Hytönen, V.P. Multiplexed High-Throughput Serological Assay for Human Enteroviruses. *Microorganisms* **2020**, *8*, 963. [[CrossRef](#)] [[PubMed](#)]



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