

# Mview

Multiple Sequence Alignment (MSA)

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## Results for Job ID: mview-I20240403-113720-0389-48783328-p1m

Tool Output

Result Files

Submission Details

Tool output

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MView

Reference sequence (1): Medaka-V2R  
Identities normalised by aligned length.  
Colored by: identity

|   | cov    | pid    | 1 [       | .      | .      | .                       |
|---|--------|--------|-----------|--------|--------|-------------------------|
| :   | .      | .      | . 80      |        |        |                         |
| 1 Medaka-V2R  | 100.0% | 100.0% |           |        |        |                         |
| <b>MKMAPLLTG</b> LF <b>FMGLLLACD</b> T <b>AGEDASDCHVLESPE</b> L <b>PLLSKDG</b> D <b>VMIGGA</b> F <b>SIH</b> S <b>KIAQPS</b> L <b>SFTEKPT</b> P <b>I</b> |        |        |           |        |        |                         |
| 2 Fugu-T1R3   | 96.8%  | 23.8%  | --MAVSP   | TLLVLF | WVFKMT | SATPAWFQNI---STSL---    |
| <b>FNLPGD</b> I <b>LKGLF</b> P <b>LNR-LTSNLSQR</b> TE-PDQIS <b>CDR---</b> I   |        |        |           |        |        |                         |
| 3 Puffer-T1R3   | 96.8%  | 25.6%  | --MAVP    | PTLLV  | FLLVCK | LTCSTPAWFQNI---STNL---  |
| <b>FNLPGD</b> I <b>LKGLF</b> P <b>INQ-LTSNLSQR</b> TE-PDQIT <b>CDR---</b> I   |        |        |           |        |        |                         |
| 4 Chicken-T1R3  | 96.3%  | 26.1%  | -----REIM | IPWVLL | CMSFG  | CAAALKPSC---LSAQ---     |
| <b>FRRPGD</b> Y <b>IIGGLF</b> P <b>FGM-DTINLTAR</b> SE-PTLIV <b>CER---</b>  |        |        |           |        |        |                         |
| 5 Opossum-T1R3  | 97.0%  | 24.7%  | -----MWG  | FLRCL  | GLSLGL | ACSTAQAKLC---LSRQ---    |
| <b>FRMKGD</b> Y <b>LGG</b> LF <b>PF</b> GI-KEEIL <b>LEKNQ-PK</b> GV <b>TCTK---</b> F  |        |        |           |        |        |                         |
| 6 Dog-T1R3  | 96.9%  | 23.7%  | -----MAG  | LMLLS  | MALLGL | GAGAPLC---LSRQ---       |
| <b>LRMQGD</b> Y <b>VLGG</b> LF <b>PLGTAED</b> T <b>GLSDRTQ-P</b> NATV <b>CTR---</b> F   |        |        |           |        |        |                         |
| 7 Human-T1R3  | 97.1%  | 24.0%  | -----MLG  | PAVLG  | LSLW   | ALLHPGTGAPLC---LSQQ---  |
| <b>LRMKGD</b> Y <b>VLGG</b> LF <b>PLGEAEEA</b> GL <b>RSRTR-P</b> SSPV <b>CTR---</b> F   |        |        |           |        |        |                         |
| 8 Opossum-T1R2  | 92.5%  | 24.9%  | -----     |        |        |                         |
| ---M <b>FTLHA-NIKG</b> T <b>THLNY-TQVPQCKD-YET</b>  |        |        |           |        |        |                         |
| 9 Dog-T1R2  | 96.4%  | 26.3%  | --MG      | PRAK   | AVCSL  | FILLQVLAEPA-----ENSD--- |
| <b>FYLPGD</b> Y <b>LLGG</b> LF <b>TLHA-NVKG</b> T <b>VHLSF-LQVPQCKK-YEM</b>   |        |        |           |        |        |                         |
| 10 Human-T1R2   | 96.8%  | 25.2%  | --MG      | PRAK   | TISSL  | FLLWVLAEPA-----ENSD---  |
| <b>FYLPGD</b> Y <b>LLGG</b> LF <b>SLHA-NMKG</b> I <b>VHLNF-LQVP</b> M <b>CKE-YEV</b>  |        |        |           |        |        |                         |
| 11 Fugu-T1R2  | 94.4%  | 28.1%  | -----MG   | CSLAC  | LCLLGC | VLVPLAQCTV---PASE---    |
| <b>FRLEGD</b> Y <b>LIGGLFEI</b> HY-EA <b>FPTFHGR--PQ</b> T <b>MDCSS-KFL</b>   |        |        |           |        |        |                         |
| 12 Puffer-T1R2  | 94.4%  | 27.1%  | -----MGR  | SLACL  | LCLGLV | LPLARGTV---PASE---      |
| <b>FRLEGD</b> Y <b>LLGG</b> LF <b>EI</b> HY-D <b>T</b> F <b>PTPHDR--PES</b> L <b>DCSS-KTL</b>   |        |        |           |        |        |                         |
| 13 Fugu-T1R1  | 97.6%  | 28.0%  | --MQ      | LQMK   | MLVA   | VLSATPLMLQLVTGELD---    |
| <b>YSTHGQGMQLHGNF</b> SI <b>AGFFPLHY-GEK</b> L <b>DGSL---</b> PALE <b>LCKD-GEI</b>  |        |        |           |        |        |                         |
| 14 Puffer-T1R1  | 97.6%  | 27.5%  | --MH      | LQTG   | TFVAIL | STTNLVLQLVRGELD---      |
| <b>RSSHGQGMQLHGNF</b> SI <b>AGFFPLHY-GYEP</b> D <b>GRL---</b> PALAL <b>CKD-GDL</b>  |        |        |           |        |        |                         |
| 15 Chicken-T1R1   | 78.9%  | 23.3%  | -----     |        |        | P-----                  |

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-----PRLPL-----
16 Opossum-T1R1    97.0%  27.4%    --MVHFKPYLVYLTLMFTCLFNCQETE-----THSD---
FKMPGDHTIAGLFPIHSVDDEVRLR----PEVTLGGRSKTF
17 Dog-T1R1        97.3%  27.4%    --MSLLAAHLVSLQLSLSCCWALSCHNTE---SSPD---
FSLPGDYLLAGLFPLHS-DCPGVRRR---PMVTLCDRPNSF
18 Human-T1R1      97.3%  27.6%    --MLLCTARLVGLQLLISCCWAFACHSTE---SSPD---
FTLPGDYLLAGLFPLHS-GCLQVRHR---PEVTLCDRSCSF
consensus/100%
.....
consensus/90%
.....hF.ht.....t...t.
consensus/80%
.....hh...h...h.h.h.....s.....h.h.Gsh.luGhFslt.....ph...Pp.
consensus/70%
.....thhhhhh.hh.hhh..h.h.....ssp...hph.GDahluGLFslp..tt.shhph...Pph

```

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cov pid 81 . 1 .
. . : . 160
1 Medaka-V2R    100.0% 100.0%    NLREFRFAQTMIFAIEEINKSK---
HLLPNVSGYRIYDNCSTLSSMRVAMALMNGDEL----LIEKNCSGQSAVHAII
2 Fugu-T1R3     96.8%  23.8%    NTYGLGMAIAMKYTVDEINANQ---
ILLPGIQLGYEIYDTCLQSAIIVRPTLSLLSAKHDNTFSVQCNYTNYETSISAVI
3 Puffer-T1R3   96.8%  25.6%    DSFGLGMAIVMKYAVDEINANQ---
FLLPGIRLGYEIHDTCRQSAVIIRPTIYYLRAKHDDNNLIAQCNYTNYETRISAVI
4 Chicken-T1R3  96.3%  26.1%    -LGGLIWLGMKFAIDEKST-----
SLLPGVELGYDIYDTCFEPLAALQPSLLFVTQNGTTGIGIACNYTDYQPRVTAVI
5 Opossum-T1R3  97.0%  24.7%    STMGLLWALAMKMAIEEINSSS---
ALLPGVSLGYDLYDCTCLPMVTMKPSLLFISQKGSRDIGAYCNYTQYWPVRVAVI
6 Dog-T1R3      96.9%  23.7%    SSLGLLWALAMKMAVEEVNRS---
TLLPGRLRLGYDLFDTCSEPVVAMKPSLMFMAKAGSCDIAAYCNYTQYQPRVLAVI
7 Human-T1R3    97.1%  24.0%    SSNGLLWALAMKMAVEEINNKS---
DLLPGRLRLGYDLFDTCSEPVVAMKPSLMFLAKAGSRDIAAYCNYTQYQPRVLAVI
8 Opossum-T1R2  92.5%  24.9%    KVLGYNLMQAMRFAVEEINNDS---SLLPGLLLGYEMVD
NNIQPVLYFLAKENFSLP-IQQDYSNYLPRVVAVI
9 Dog-T1R2      96.4%  26.3%    KVLGYNLMQAMRFAVEEINNRS---DLLPGVLLGYEIVD
NNVQPVLYFLAREDYSLP-IQEDYSHYVPRVLAVI
10 Human-T1R2   96.8%  25.2%    KVIGYNLMQAMRFAVEEINNDS---SLLPGVLLGYEIVD
NNVQPVLYFLAHEDNLLP-IQEDYSNYISRNVAVI
11 Fugu-T1R2    94.4%  28.1%    ILSNYRRFQLMRFAVAEINNST---SLLPNVTLGYEIVD
QSFSDVFKLLSVNNVIQPNVNP- -KNVSKVVAVL
12 Puffer-T1R2  94.4%  27.1%    FLSNYRRFQLMRFAVAEINNST---DLLPNVTLGYEIVD
RCFAGIFKLLSVNNVQPNVPG- -KKVSKVVAVV
13 Fugu-T1R1    97.6%  28.0%    NKHGFHLLQAMKLAVDEINKDAGTQALLPGVVLGYQLYD
AGILASLDVLEYWSPSASGKVPNF-DISQRPLAVI
14 Puffer-T1R1  97.6%  27.5%    NKHGFHLLHAMKLAVEEINSNTGAQSLLPGVMLGYQMYD
ASILASLDVLDYWSSASGTEPDFST-SQRPLAVI
15 Chicken-T1R1 78.9%  23.3%    -----
16 Opossum-T1R1 97.0%  27.4%    NGHGYHLFQAMRFGIEEINNSS---SLLPNVTLGYEIVD
SNVYATLSVLSQPRGNHIRFENVFNYYPKAVAVI
17 Dog-T1R1     97.3%  27.4%    NGHGYHLFQAMRFGIEEINNST---TLLPNVTLGQYLYD
ANVYATLNVLTSLGTHHIEIQADPSHYSPAALAVI
18 Human-T1R1   97.3%  27.6%    NEHGYYHLFQAMRLGVEEINNST---ALLPNITLGQYLYD
ANVYATLRVLSLPGQHIELQGDLHYSPTVLAVI
consensus/100%
.....
consensus/90%
...th.hh.hMhhsltEhst.....LLPs1.lGYphhD.C..s...h.s.h.hht..t.....t..p
consensus/80%
...sh.hh.sM+hul-
EINspp...tLLPs1.LGYplhDsC..s..sh.ssh.hls..t.....h...s..ph.spshAVI
consensus/70%
phhGthhh.um+hAl-
EINsss...sLLPs1hLGYclaDsC..s.ssh.sSL.hLsh.sspt..h.tsh.ph.s+l1AVI

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cov pid 161 . . .
. . . 240
1 Medaka-V2R    100.0% 100.0%
GESESSSTIVLSRTTGYPQIPVISHSATCECLSSRKEYPSFFRTIASDLHQSRALAQLVKHFGWSWVGAVN!
2 Fugu-T1R3     96.8%  23.8%
GPNNSEMVSVIGKLLGFFLMPQISYGATSEKFSDTALYPSFFRTVPSDKWQVEAMVLLLEFNWNWVAVVG!
3 Puffer-T1R3   96.8%  25.6%
GPNNSELVSVIGKLLGFFLMPQISYGATSDKFSDNILYPSFFRTVPSDKGQVEAMVLLLEFNWNWVAVVG!
4 Chicken-T1R3  96.3%  26.1%
GPHKSDLCLLTAKLFSFFLIPQVSYGASSEKLSNKELYPSFYRTVPSDKNLVEAVVLLLDEFGWNIATIG!
5 Opossum-T1R3  97.0%  24.7%

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GPHSSELALITGKLGFFFLMPQVSYGASTDRLSSRAIFPSFFRTIPSDRVQLQAIVDLLNLFSSNNWVAAVG!  
6 Dog-T1R3 96.9% 23.7%  
GPHSSELALITGKFFSFFLMPQVSYGASTDRLSNRETFPSFFRTVSSDRVQAVAMVELLQELGWNWVAAVG!  
7 Human-T1R3 97.1% 24.0%  
GPHSSELAMVTGKFFSFFLMPQVSYGASMELLSARETFPSFFRTVPSSDRVQLTAAAEALLQEFGWNWVAALG!  
8 Opossum-T1R2 92.5% 24.9%  
GPDTAESVVTVNHLSSLFLLPQITYSAISNELRDRSRFSLFRTIPSGSHQMEAMIRIIHFHWNWVILLV!  
9 Dog-T1R2 96.4% 26.3%  
GPDNSESTTTVAHFLSLFLLPQITYSAISDDLDRDKQRFAPALLRTVAGADHQIEAMVQLLLHFNNWNIIVLV!  
10 Human-T1R2 96.8% 25.2%  
GPDNSESMTVANFLSLFLLPQITYSAISDELDRDKVRFPALLRTTPSADHHIEAMVQLMLHFRWNWNIIVLV!  
11 Fugu-T1R2 94.4% 28.1%  
GLFSSTSTLTVAPLFMSDFIPLISYGSSSSIFSEKAKFPSFLRTVHSSKKVMEVIVKILQYFKWHWVAFLY!  
12 Puffer-T1R2 94.4% 27.1%  
GLFTSTFTLTVAPLFMMDFIPMISYGSSSSILSEKVKFPSFLRTVHSSQEVIVKILQYFKWHWVAFLY!  
13 Fugu-T1R1 97.6% 28.0%  
GPDSSNSFTPATLLGAHLIPQISYEASNEMLSNNKVLPSFFRTIPSDKNQVAAMIQLLVRFNWTWIALLG!  
14 Puffer-T1R1 97.6% 27.5%  
GPDSSKSFTPATLLGAYLVPQVSYEASNEMLSNNKIFYPAFFRTIPSDKNQVAAMIQLLVRFNWTWVALLG!  
15 Chicken-T1R1 78.9% 23.3% -----  
QISYEASLEMLSTKRFYPSFLRTIPSDGQQVKAIGLLLQRFGWTVVALVGSNDTYGRDG  
16 Opossum-T1R1 97.0% 27.4%  
GPDSTELTSISASLLSTFLVPQISYEATSMFSEKQKYPSPFLRTIPSDKHQVQMILMLKKFGWSWISVIG!  
17 Dog-T1R1 97.3% 27.4%  
GPDTTNHAATAAALLSPFLVPVISYEASSVMLGVKRYPSFLRTIPSDKYQVEIMVLLLQRFGWVWISLVG!  
18 Human-T1R1 97.3% 27.6%  
GPDSTNRAATTAALLSPFLVPMISYAASSETLSVKRQYPSFLRTIPNDKYQVETMVLLLQKFGWTVISLVG!  
consensus/100%  
.....loatu....ht.p..aPuhhRTh.ss.....hhh.lh..htw.Wl.hl..!  
consensus/90%  
G..psp.s.h.s.hh....hp.loYtu....hp.p..aPuhhRTl.ust..hthhh.ll..FtwpWl.hlh!  
consensus/80%  
G.psop.s.h.uthhu.ahhp.lSYtAosphhus+.haPSFhRTlsSsp.phpshl.LL.cFtWswluhls!  
consensus/70% GPPsSp.shssupghuhalhPqISYuAoo-  
hLSs+thaPSFhRTlPSDchQlpAhl.LL.cFswWluhlsSss-YGppG

|   | cov    | pid    | 241                           | : | . | . |
|---|--------|--------|-------------------------------|---|---|---|
| .   | 3      | .      | 320                           |   |   |   |
| 1 Medaka-V2R  | 100.0% | 100.0% | MAIFLSAAQEEGVCVEYIEK-----     |   |   |   |
| FDRAEPEKLLKVVEVIRKSTARVIVAFLAHVEMNLLLEQLNVHNITGRQFI                       |        |        |                               |   |   |   |
| 2 Fugu-T1R3   | 96.8%  | 23.8%  | VQDFSKLAANKSICVAYQGLIP-----   |   |   |   |
| VYTDPEPMVKTILSNINSTKARVVIVFSLNQAEIFFKEVIRMKLKGW-WI                        |        |        |                               |   |   |   |
| 3 Puffer-T1R3   | 96.8%  | 25.6%  | VQDFSKVAANRSICVAYQGLIP-----   |   |   |   |
| VYTDPEPVVKTIISNINSTKANVVIVFSLPNQAEIFFQEVIRTELKGV-WI                       |        |        |                               |   |   |   |
| 4 Chicken-T1R3  | 96.3%  | 26.1%  | QELFLSTIGNSSICIAEGLIPSDL----  |   |   |   |
| TDPRAEKQLEETIQYINKTNVNIIVLFAFRQPAQALLKQSIKMRLSKKVWI                       |        |        |                               |   |   |   |
| 5 Opossum-T1R3  | 97.0%  | 24.7%  | LSIFSSLANNRSICIAHEGTLPLPRA--- |   |   |   |
| QNSQDLGKVESILRQINQSAVQVVVLFASEAAARILFYQYCIQTKVTPKVWV                      |        |        |                               |   |   |   |
| 6 Dog-T1R3  | 96.9%  | 23.7%  | LSLFSSLANARGICIAHEGLVPLPH---- |   |   |   |
| TSSRLGLTVQGLLHQVNQSSVQVVVLFSSTRAARTLFSYSIHCRLSPKVWV                       |        |        |                               |   |   |   |
| 7 Human-T1R3  | 97.1%  | 24.0%  | LSIFSALAAARGICIAHEGLVPLPR---- |   |   |   |
| ADDSRLGKVQDVLHQVNQSSVQVVLLFASVHAHALFNYSISSRLSPKVWV                        |        |        |                               |   |   |   |
| 8 Opossum-T1R2  | 92.5%  | 24.9%  |                               |   |   |   |
| GHLFSEKLEGRDICVAFQESLPIPSPNRVVMPQDKRRMEGLVAKIRIRSTAKVVVVLSDLALYTTFFEEVLRI |        |        |                               |   |   |   |
| 9 Dog-T1R2  | 96.4%  | 26.3%  |                               |   |   |   |
| SQLLNDRLATGDICIAFQETLPMPPQDQVVTWERQRLEAIVGKLQQSSARVVVLFSPDLILHNFREVLR     |        |        |                               |   |   |   |
| 10 Human-T1R2   | 96.8%  | 25.2%  |                               |   |   |   |
| GQLLGERVARRDICIAFQETLPTLQPNQNMTESEERQLVTIVDKLQQSTARVVVVFSPDLTYHFFNEVLRI   |        |        |                               |   |   |   |
| 11 Fugu-T1R2  | 94.4%  | 28.1%  | LKLFIEKIKDTEICLAY-----        |   |   |   |
| THSLDSSHYSVFNQIDAQRINLIVVFAPHWHAIPLVQAAIRHNVTGKVWI                        |        |        |                               |   |   |   |
| 12 Puffer-T1R2  | 94.4%  | 27.1%  | QKLFIEKIKNTDICLAY-----        |   |   |   |
| THDLVSSDFLSIFQWIKSQKIVVIVVMAPEWSAKPLVKSIAIHNVTDKVWI                       |        |        |                               |   |   |   |
| 13 Fugu-T1R1  | 97.6%  | 28.0%  | MQSLSQQAPEFNICIAYQGVIPG-----  |   |   |   |
| YTQDTVQVMRNIVDSILKTKVTTIVVFSSKSKLSKFMFPFVIEQKVTGKVWI                      |        |        |                               |   |   |   |
| 14 Puffer-T1R1  | 97.6%  | 27.5%  | MRSLSQQAPDHHICIAYQGVPIE-----  |   |   |   |
| YTRDTVALMRNIVDGILMTKVTTIVVFSSKSKLSKFMFPFVIERNVTEKVWI                      |        |        |                               |   |   |   |
| 15 Chicken-T1R1   | 78.9%  | 23.3%  | LNALSELLAASDVCAVYRGVIPT-----  |   |   |   |
| TKDAGSPELRKLIQTLVDSRVNVTVVFSNRRNAQPFFEAVVQENITGMVWV                       |        |        |                               |   |   |   |
| 16 Opossum-T1R1   | 97.0%  | 27.4%  | VHLLLEDLANQQEICIAKDFVPI-----  |   |   |   |
| LAQAADNTMQNMMVDINKFGAEVVVVFCKNRLARVFFEAVVLGNVTDKVWL                       |        |        |                               |   |   |   |
| 17 Dog-T1R1   | 97.3%  | 27.4%  | VQALEEQATQQGICIAFKDIIPF-----  |   |   |   |
| SAQPGNERMQSMYHLDRARTTVVVVFSSRQLARVFFESVVLAKLTAKVWI                        |        |        |                               |   |   |   |
| 18 Human-T1R1   | 97.3%  | 27.6%  | VQALENQATGGICIAFKDIMPF-----   |   |   |   |
| SAQVGDERMQCLMRHLAQAGATVVVVVFSSRQLARVFFESVVLTNLTGKVWV                      |        |        |                               |   |   |   |

consensus/100%  
.t.h.t.h.t.tlClta.....h.thh..l...th.hhlhh.....h..hh.....  
consensus/90%  
.p.h.p.h.tttlClAa.....h.thh..l.tttthphlllhs.....h..hh..sl.  
consensus/80%  
hp.h.p.httpsIClAapthhP.....htp.t.thh.slhttltpspsp1lVlFu.p..hp.hhp.sl.  
consensus/70%  
hphhphhsspsIClAapthlP.....htp.s.tphpsllpplppopspVlVlFusc.thphhhtslp

cov pid 321  
4 400  
1 Medaka-V2R 100.0% 100.0%  
GVEAWITADSLVTPTSFSVLGGSLGFAVQKTNISGLNTFLVEDFWETDFQCENHIDVASKS-----  
2 Fugu-T1R3 96.8% 23.8%  
GSTSWTINDAVTSLPDIQTGWITILGFVEQTQSVDLLRAYTYALLNKLSEERAHTRSSAQNSNYPNP----  
3 Puffer-T1R3 96.8% 25.6%  
GSTAWTISERVFLPNLHTVGTILGFAFTTQSLDLLRAYTHELLTKVSEEAHTPPPVENLNDYSNS----  
4 Chicken-T1R3 96.3% 26.1%  
GTEAWLLSDIAASIPNIQNIQIGTVLGFIMKASTVPGFQKYVANLLSSVQQDEFQCKSRGFYRHSVSDTLGTQI  
5 Opossum-T1R3 97.0% 24.7%  
ASEAWLVSEQVTKLPGIQGVGTIMGFLLRGAPLPEFNDYVARCLAQAADKAFCDTLEEAFNPNTEDDVVGPI  
6 Dog-T1R3 96.9% 23.7%  
ASEAWLTSDLVMTLPGMAEVGTVLGFLQQGAPIPEFPSYVQTCLALAADPAFCASLDAEQPGLEEHVGPRI  
7 Human-T1R3 97.1% 24.0%  
ASEAWLTSDLVMGLPGMAQMGTVLGFLLRGAQLHEFPQYVKTHLALATDPAFCALSALGEREQGLEEDVVGQRI  
8 Opossum-T1R2 92.5% 24.9% ASEWSIDPVLHSHFFSVRRAGTFLGITTPIVPIPGFSD-  
FRIRREVRKPAWDGKHPQPTCNQE-----CD-----  
9 Dog-T1R2 96.4% 26.3% ASESWAIDPVLHNLTELRTGTGTLGVTTQSVPIPGFSE-  
FRIRRTPVRLPEPNTSLEATCNQE-----CD-----  
10 Human-T1R2 96.8% 25.2% ASESWAIDPVLHNLTELRLHGTFLGITIQSVPIPGFSE-  
FREWGPQAGPPPLSRTSQSYTCNQE-----CD-----  
11 Fugu-T1R2 94.4% 28.1% AGEAWSLNKELPKEKGIKNIGTVIGVSQPVVTIPGFEDF  
VKKGNRCESTEQQFCNQIYN-----CS-----  
12 Puffer-T1R2 94.4% 27.1% AGEAWSLNKELPKEKGIKHIGTVIGVAQLYLNIPRFQDF  
VKKQNECESAEQQFCNRVCK-----CS-----  
13 Fugu-T1R1 97.6% 28.0%  
GTEDWSPSSLISGIPGIHTIGTVIGVAVKYTIIPGFVKRLVEASLHQSNDGNASVNTANLSNTCLQ-----  
14 Puffer-T1R1 97.6% 27.5%  
GTEDWSQSSLIAGIPGIHTIGTVIGVAIKYTVIPGFVERLAEASLQRSNEENASTVTVPNPNTCLQ-----  
15 Chicken-T1R1 78.9% 23.3% GSEDWSLAQTIWQVPGIQNIGSVIGISVEQAE-  
PTMLKRLESWENARERAVSGSAGSTGVGGGNGASS---SDSVQLNCT  
16 Opossum-T1R1 97.0% 27.4% ATEDWSISSYITQVPGISRIGTVIGIAIKQRQVLGMKE-  
FEEAYAQAQNTSEASGGPAQDRGDHT-----GN-----  
17 Dog-T1R1 97.3% 27.4% ASEDAISRHISSLPRWIGIGTVLGVAIQQKLVPGLKE-  
FEEAYVRAKKAHRPCSRDSSNQL-----CR-----  
18 Human-T1R1 97.3% 27.6% ASEAWALSRHITGVPGIQRIGMVLGVAIQKRAVPGLKA-  
FEEAYARADKKAPRPCCHKGSWSSNQL-----CR-----

consensus/100%  
uspsW..s..h...th..hh..hGh.....h.t.h.....t...t.....t.....!  
consensus/90%  
uspsW..s..l.t..ththGshlGh.....l..h.t.h.....ht...t.t.....s.....!  
consensus/80%  
uoEsW.hsp.l.thsslpphGThlGhh.p.h.lsth.p.h.ph...hpp.t.ttt..tt.ts.....!  
consensus/70%  
uoEuWslsplhplsslpplGtllGhshpttslPthpp.htphhstsppts.sss.ptt.sstp.....!

cov pid 401  
480  
1 Medaka-V2R 100.0% 100.0% -ENQDLMKLRDYN--  
DDVEELRYSSNIYKAVYAVAHSLSIMKCSDSQGC--DKTSEVKPWQVIEALKQVNFIIKNGEQV  
2 Fugu-T1R3 96.8% 23.8% -QCWN-LSPANISLVTDLVIQRKAFSVYAAIYSVAQALH  
NSTACKNTSEVKIYPWKLKTLRHTKVDING-TML  
3 Puffer-T1R3 96.8% 25.6% -HCWN-LSPANISLDAEVAIQRSFRVYAAIYSVAQALH  
NSTACMKTSEVQIYPWKLKALRNTTVDING-TML  
4 Chicken-T1R3 96.3% 26.1% -QCDH-ISLNDIS---STLSHSQIQPVYIAVYSVAYALH  
THQGC--PRA-SIRSWQLLHFMNTVPFTVNG-QSF  
5 Opossum-T1R3 97.0% 24.7% -QCDD-ISHENIS---SGLQHHTQFAVYAAVYSVAHALH  
TNSGC--FSNNRTRPWELVSKMYNLSFRARS-LTL  
6 Dog-T1R3 96.9% 23.7% -QCDH-VTLEAMS---AGLLHHQTFAAAYAAYVYVAQALH  
NASGC--PPREPVRPWQLLENMYNLTFVRG-LAL  
7 Human-T1R3 97.1% 24.0% -QCDC-ITLQNVS---AGLNHHQTFSVYAAVYSVAQALH  
NASGC--PAQDPVKPWQLLENMYNLTFHVGG-LPL  
8 Opossum-T1R2 92.5% 24.9% -TCPD-AAESYNT-VLTLSGERVVYVYLSVYIVAHALH  
EAARC--SRD-EVYPWKLQEIWKVNFTPAGPQDL

|                                     |              |       |       |   |
|-------------------------------------|--------------|-------|-------|---|
| 9                                   | Dog-T1R2     | 96.4% | 26.3% | -TCQD-TTASFNS-ILMLSGERVVYNVYSAVYAVAHALH |
| TQAC--SKE-VVYPWQLLKEIWKVNFTLLG-HNV  |              |       |       |   |
| 10                                  | Human-T1R2   | 96.8% | 25.2% | -NCLN-ATLSFNT-ILRLSGERVVYSVYSAVYAVAHALH |
| DKSTC--TKR-VVYPWQLLEEIWKVNFTLLD-HQI |              |       |       |   |
| 11                                  | Fugu-T1R2    | 94.4% | 28.1% | -QESA-DILAADP-----SYSFVSYSAVYSTAHALH    |
| DFGKC--DNGIPISPPVLLAQLKKSNTLLT-ERV  |              |       |       |   |
| 12                                  | Puffer-T1R2  | 94.4% | 27.1% | -NVSAEDTLAVDP-----SYAFSVYSAVYAAHALH     |
| GTGKC--DSGVSVSPALLAELKRSNFTLLN-QTI  |              |       |       |   |
| 13                                  | Fugu-T1R1    | 97.6% | 28.0% | -DLYS-LAEMNFP--LDNYDITSAINVYKAVYAVAHALH |
| DSGEC--QRK-RVYPWELLSRLKQVRFLMAN-SSV |              |       |       |   |
| 14                                  | Puffer-T1R1  | 97.6% | 27.5% | -ELYS-LAEMNLP--LDNYDIASAVNVYKAVYAVAHALH |
| GSGEC--QRK-RVYPWELLSRLKQVQFPMAN-ASV |              |       |       |   |
| 15                                  | Chicken-T1R1 | 78.9% | 23.3% | QHCPGCHLLADTP---DIYDIQASYNVYSAVYAVAHGLH |
| ASGVC--SKG-RVYPWQLLQKIKQVNFSLHK-SYI |              |       |       |   |
| 16                                  | Opossum-T1R1 | 97.0% | 27.4% | -QHQA-LTANANT-ELSQFSMNAAYNVYAAVYAVAHGLH |
| PSGVC--TPG-KIYPWQLLAEIRKVNFTLQG-NPV |              |       |       |   |
| 17                                  | Dog-T1R1     | 97.3% | 27.4% | -ECQA-FTVQQMP-TLGAFSMSSAYNAYRAVYAAHGLH  |
| ASGAC--SRD-RVYPWQLLEQIRKVNFLLE-DTV  |              |       |       |   |
| 18                                  | Human-T1R1   | 97.3% | 27.6% | -ECQA-FMAHTMP-KLKAFSMSSAYNAYRAVYAVAHGLH |
| ASGAC--SRG-RVYPWQLLEQIHKVHFLHKK-DTV |              |       |       |   |

consensus/100%

.p..t.....s.....t....hY.uLY.sA.uLH..h.C...t.C...t..h.s..llt.h.p..l

consensus/90%

.p..t.....s.....p.s.ssY.AlyusApuLHphLtC..tt.C...t..l.P.tLlthhp.pl

consensus/80%

.pp.s.ht.t..s...t....p.shslytAVYuVApuLHphLtC.ssstC..spt..lhPwPLpphhpspl

consensus/70%

.ps.s.hshts.s...th.t.p.sasVtAVYuVAHALHplLtC.ssusC..spt.plhPwPLpplhplsl

|  |              |        |        |  |  |   |  |
|--|--------------|--------|--------|--|--|---|--|
|  |              | cov    | pid    | 481                                      |  | 5 |  |
| :  |              |        |        |  |  |   |  |
| 560  |              |        |        |  |  |   |  |
| 1  | Medaka-V2R   | 100.0% | 100.0% | WFDSTGAVLAR-                             |  |   |  |
| YEVVNWQQRSTGSVHFEVPVGYDASLPPGQKFLNTEAIMWP--GGSTKLPSVCSSESCRPGTYKVL |              |        |        |  |  |   |  |
| 2  | Fugu-T1R3    | 96.8%  | 23.8%  | EFDSNGNPVNG-YNLIELIWK-N-STLEFVEVGSF--N-- |  |   |  |
| KILNINVSFLKWH--TETSEVPQSTCSAACGEGQVHRV-                            |              |        |        |  |  |   |  |
| 3  | Puffer-T1R3  | 96.8%  | 25.6%  | KFDRNGNPNG-YSVVELILKN-SSLEFLEVGSF--N--   |  |   |  |
| KILDIKSLFKWH--TENSEVPESTCSAACGEGQVHRV-                             |              |        |        |  |  |   |  |
| 4  | Chicken-T1R3 | 96.3%  | 26.1%  | RFDESHGTNSG-YKLIFWHWEN-GSLTHLPVGDY--Q--  |  |   |  |
| ESLYLNKSLIQFH--TTDQKEPTSECFRECEPGQIKQI-                            |              |        |        |  |  |   |  |
| 5  | Opossum-T1R3 | 97.0%  | 24.7%  | KFDDNGNVDMI-YDLKLWVWHDNMDPELLTIGSF--Q--  |  |   |  |
| GDLKLNRSQIRWH--SPGNQEPVSRCRECEEGQVRRV-                             |              |        |        |  |  |   |  |
| 6  | Dog-T1R3     | 96.9%  | 23.7%  | QFDARGNVNMD-YDLKLWVWRD-LKPELRTVGAF--N--  |  |   |  |
| GRLKVWHSQMSWH--TPGNQRPVSQCSRQCCEGQVRRV-                            |              |        |        |  |  |   |  |
| 7  | Human-T1R3   | 97.1%  | 24.0%  | RFDSSGNVDME-YDLKLWVWQG-SVPRLHDVGRF--N--  |  |   |  |
| GSLRTERLKIRWH--TSDNQKPVSRCSRQCCEGQVRRV-                            |              |        |        |  |  |   |  |
| 8  | Opossum-T1R2 | 92.5%  | 24.9%  | LLTSRAILPLG-LEIIQWQWED-GHNPFSNIGLL--QPS  |  |   |  |
| TAIISWATNISWH--TGQQSRP-SVCSKSCQPGQWKR-                             |              |        |        |  |  |   |  |
| 9  | Dog-T1R2     | 96.4%  | 26.3%  | FFDKQGDVLM-PEVIQWQWDL-SQNPQSIASY----     |  |   |  |
| YPKLRQLKAHNISWH--TANNTIPVSMCSKDCHPGQRKKP-                          |              |        |        |  |  |   |  |
| 10   | Human-T1R2   | 96.8%  | 25.2%  | FFDPQGDVALH-LEIVQWQWDR-SQNPQSVASY----    |  |   |  |
| YPLQRQLKNIQDISWH--TINNTIPMSMCSKRCQSGQKKP-                          |              |        |        |  |  |   |  |
| 11   | Fugu-T1R2    | 94.4%  | 28.1%  | QFDENGDPFRGSYAVLFWNQTG-DPENF---GTC--     |  |   |  |
| CFYPSVKIFINDSKIQWH---SKEVPISQCSKDCKEGYAKRI-                        |              |        |        |  |  |   |  |
| 12   | Puffer-T1R2  | 94.4%  | 27.1%  | HFNEDGDPPLFGSYAVHFWNRSG-AAENF---GIC--    |  |   |  |
| SFYPSIQIFINESKIQWH---SKEVPVSQCSKECEEKNARQ-                         |              |        |        |  |  |   |  |
| 13   | Fugu-T1R1    | 97.6%  | 28.0%  | YFDSNGDPPTG-YDIICVWVHG-TEWSVRRVGSF--SPN  |  |   |  |
| ISLTIDADKIEWHISGDSRSVPQSICSPPCPGHRRLL-                             |              |        |        |  |  |   |  |
| 14   | Puffer-T1R1  | 97.6%  | 27.5%  | YFDSNGDPPTG-YDIISWVWRG-AKWSVRVGSF--SPT   |  |   |  |
| ISLTVDAVAWEHISGDSRSVPQSICSPPCPGHKRLL-                              |              |        |        |  |  |   |  |
| 15   | Chicken-T1R1 | 78.9%  | 23.3%  | SFDANGNIRKG-YNIIAWNWRG-QSWAFDVVGAF--SVN  |  |   |  |
| NRLHIDQSKILWH--TKDHQVPVSVCSWPCAAGEMRLQ-                            |              |        |        |  |  |   |  |
| 16   | Opossum-T1R1 | 97.0%  | 27.4%  | SFDEDGDPVSG-YDIITWVWNG-PNWTFKVIGTS--TWY  |  |   |  |
| VFLEIDGTKIWH--REENQVPRSVCSQDCLPGEARRI-                             |              |        |        |  |  |   |  |
| 17   | Dog-T1R1     | 97.3%  | 27.4%  | IFNDNGDPLSG-YDIIAWDWSG-PKWTFRVIGSS--TWP  |  |   |  |
| VQLDINKTKIRWH--GEDNQVPESVCSNCLLEGHQRVV-                            |              |        |        |  |  |   |  |
| 18   | Human-T1R1   | 97.3%  | 27.6%  | AFNDNRDPLSS-YNIIAWDWSG-PKWTFTVLGSS--TWS  |  |   |  |
| VQLNINETKIQWH--GKDNQVPKSVCSSDCLEGHQRVV-                            |              |        |        |  |  |   |  |

consensus/100%

.hs.pt.....htlh.h..p.....h...u.....h.a.....tpp.P.S.C...C

consensus/90%

.Fstpts.....htlh.h..pt.....h...u.....h..p.h.WH.....tpp.P.S.CS...C

consensus/80%

.FsppGss..t.Yplh.W.hps.sp.th..lgth..p....t1.hptptlpWH..s.spphP.S.CsttC

consensus/70%

hFDpsGss.hs.Ysll.W.Wps.sp.pa.slgsh..s....hplhlstspIpWH..stspplP.ShCSppC

|   | cov    | pid    | 561                       |  |  |  |
|---|--------|--------|---------------------------|--|--|--|
|   |        |        | 640                       |  |  |  |
| 1 Medaka-V2R  | 100.0% | 100.0% | RGKPVCCFHCLPCPDGEISNST-   |  |  |  |
| DSNDCNQCEEFWSNQIRDACVPKNVEFLSYTEDMSKILMFFTLFGVVLTVTIVAVL                |        |        |                           |  |  |  |
| 2 Fugu-T1R3   | 96.8%  | 23.8%  | KGFHSCCFDCIDCLPGTYQAQD-   |  |  |  |
| GDIQCTPCPPRQWSLARSSRCTDPIYDYSWDTPEALLTLAIVLVVLFMGSVVVVF                 |        |        |                           |  |  |  |
| 3 Puffer-T1R3   | 96.8%  | 25.6%  | KGFHSCCFDCIDCLPGTYQREK-   |  |  |  |
| DDIQCTPCPPRQWSLKRSTRCTDPTYDYLSWDTPEALLTLAIVLVVLFKGAVVVLF                |        |        |                           |  |  |  |
| 4 Chicken-T1R3  | 96.3%  | 26.1%  | KGFHLCCYDCTDCPCENTGCVSSK- |  |  |  |
| DSSTCTPCLEHQWSPARSTQCYDRSERYLRWNEPLTAGLLISMSIIISLICLTAVLF               |        |        |                           |  |  |  |
| 5 Opossum-T1R3  | 97.0%  | 24.7%  | KGFHSCCYDCLDCQAGSYRKNR-   |  |  |  |
| DDLCTSCASDQWSPDLSTQCFPRTIKFLGWGEVPPVVVLLLLMVAVGLSLGALGLF                |        |        |                           |  |  |  |
| 6 Dog-T1R3  | 96.9%  | 23.7%  | KGFHSCCYDCVDCCKAGTYQRS-   |  |  |  |
| DDLCTQCDQNQWSPDRSTRCFPRRLTFLAWGQPAVLVLLILLALALGLVLVALGLF                |        |        |                           |  |  |  |
| 7 Human-T1R3  | 97.1%  | 24.0%  | KGFHSCCYDCVDCCEAGSYRQNP-  |  |  |  |
| DDIACFTCGQDEWSPERSTRCFRRRSRFLAWGEPAVLLLLLLSLALGLVLAALGLF                |        |        |                           |  |  |  |
| 8 Opossum-T1R2  | 92.5%  | 24.9%  | VGLHPCCFECVDCAPGTYHNS-    |  |  |  |
| EDFECQHCPLNEWSNAGAIQCYKRRLLQYLEWQEPLTIIVVILATLGLSTLAILIIF               |        |        |                           |  |  |  |
| 9 Dog-T1R2  | 96.4%  | 26.3%  |                           |  |  |  |
| VGIHSCCFECIDCLPGTFLNRTADEFDCQPCPSYEWSHRNDTSCFKRRLAFLEWHEPSTIFVVMLTILGFL |        |        |                           |  |  |  |
| 10 Human-T1R2   | 96.8%  | 25.2%  |                           |  |  |  |
| VGIHVCCFECIDCLPGTFLNHTEDEYECQACPNNEWSYQSETSCFKRQLVFLEWHEAPTIAVALLAALGLF |        |        |                           |  |  |  |
| 11 Fugu-T1R2  | 94.4%  | 28.1%  |                           |  |  |  |
| EGIHQCCFKCEICPNGTFVNRTKDPFNCDICEEHQWSAAGSTSCLPRTVEYVAFTDTAAVVILVAGALLAI |        |        |                           |  |  |  |
| 12 Puffer-T1R2  | 94.4%  | 27.1%  |                           |  |  |  |
| EGIHRCFTCEICPNGTYVNITADPYSCLPCEKHQWSTAGSTSCLPRTVEWVPFTDPAAVVILAGACLLVAI |        |        |                           |  |  |  |
| 13 Fugu-T1R1  | 97.6%  | 28.0%  | TGQHSCCFDCQACSEATFLNTS-   |  |  |  |
| DPTSCQDCLPEEWAPKSSERCLKRTPLLLEWDHHLISIALFFLACCLLMTSSSAVIL               |        |        |                           |  |  |  |
| 14 Puffer-T1R1  | 97.6%  | 27.5%  | TGQHECCFDCQACAEATFLNES-   |  |  |  |
| DPTTCQTCLPEEWAPKSSQRCLKRTRLLLEWDHPMSVALLFFLVCCLLMTSSSAVIL               |        |        |                           |  |  |  |
| 15 Chicken-T1R1   | 78.9%  | 23.3%  | QNRHRCCFSCVACPAAGTFLNRT-  |  |  |  |
| ALYACQACGRDEWAPVGSETCFNRTVEFLSWADPLSWVLLIPTVLLLLLMVGLAVLF               |        |        |                           |  |  |  |
| 16 Opossum-T1R1   | 97.0%  | 27.4%  | VGLHHCCFECVLCAGTFLNNS-    |  |  |  |
| DQYTCQPCQKEEWSPEGSQTCFNCTTEFLAWDHPVSLVLLGANTLLLLLLTGVASLF               |        |        |                           |  |  |  |
| 17 Dog-T1R1   | 97.3%  | 27.4%  | VGFYHCCFECVPCEAGTFLNKS-   |  |  |  |
| DLHSCQPCGKEEWAPEGESCFRLTVVFLTWHEPISWVLLAANTLLLLLVAGTAGLF                |        |        |                           |  |  |  |
| 18 Human-T1R1   | 97.3%  | 27.6%  | TGFHHCCFECVPCGAGTFLNKS-   |  |  |  |
| DLYRCQPCGKEEWAPEGSQTCFPRTVVFLALREHTSWVLLAANTLLLLLLLTGAGLF               |        |        |                           |  |  |  |
| consensus/100%  |        |        |                           |  |  |  |
| .s...CCapC..C..sph.t...t...C..C....Wu...t.tCh....hl.http..shh1hh...hhh. |        |        |                           |  |  |  |
| consensus/90%   |        |        |                           |  |  |  |
| .G.a.CCapC..C..uoa.p...s...C..C..ppWu.t.pppCh..p..hltatp..shh1hh...hhh  |        |        |                           |  |  |  |
| consensus/80%   |        |        |                           |  |  |  |
| hgHh.CCacC.sC.sGTa.pps.D.htCp.C..ppWu.ttuppCh.+ph.aLtatcs.shh1hhhs1hlhl |        |        |                           |  |  |  |
| consensus/70%   |        |        |                           |  |  |  |
| pGhHpCCF-   |        |        |                           |  |  |  |
| ClsC.sGTahsps.D.hpCpsc.pppWSsttSppCh.RphtaLtWscPhs1l1lhhhsLhlhhhhuhhs1F |        |        |                           |  |  |  |

|   | cov    | pid    | 641 | : |  |  |
|---|--------|--------|-----|---|--|--|
|   |        |        | 720 |   |  |  |
| 1 Medaka-V2R  | 100.0% | 100.0% |     |   |  |  |
| LINRDTPLVKANSELSFLLFLSLCFLCSLTFIGRPTEWSCMLRHTAFGITFVLCISILGKTIVVLMAL      |        |        |     |   |  |  |
| 2 Fugu-T1R3   | 96.8%  | 23.8%  |     |   |  |  |
| VNHRRETVLVTASGGTLSIVVLLGLMGACLSLLFLGQPGDTCRLQLPLISAFQTVPLSIIMSISLQIFFV    |        |        |     |   |  |  |
| 3 Puffer-T1R3   | 96.8%  | 25.6%  |     |   |  |  |
| LKHRGTVLVAASGGTLSFVVLLGLMGACLSLLFLGQPGDTCRLQLPLVSIFQTVPLCIIMSISLQIFFV     |        |        |     |   |  |  |
| 4 Chicken-T1R3  | 96.3%  | 26.1%  |     |   |  |  |
| VKNLNTPLVQAAGGNLNLFALFALTLMCLSSCLFIGKPTNNLCMMQQIVCALCLNACSTFFFIKSLEIVLL   |        |        |     |   |  |  |
| 5 Opossum-T1R3  | 97.0%  | 24.7%  |     |   |  |  |
| SYHWGSPLVRASGGSLSCFGLGCLTLVSLSVLHFPGRPSWFSCLAQQPLVHLPLTGCLSTLFLKAAEFLA    |        |        |     |   |  |  |
| 6 Dog-T1R3  | 96.9%  | 23.7%  |     |   |  |  |
| IRHRDSPLVQASGGPRACFGLACLGLVCLSVLLFPGQPGPASCLAQQPLLHLPLTGCLSTLFLQAAQIFVG   |        |        |     |   |  |  |
| 7 Human-T1R3  | 97.1%  | 24.0%  |     |   |  |  |
| VHHRDSPLVQASGGPLACFGLVCLGLVCLSVLLFPGQPSPARCLAQQPLSHLPLTGCLSTLFLQAAEIFVE   |        |        |     |   |  |  |
| 8 Opossum-T1R2  | 92.5%  | 24.9%  |     |   |  |  |
| WVHFQTPMVRASAGGRMCFMLMLTPLLVAYVSVVPYIGRPTVFTCLYRQTLFTLCFTVCACINVRSFQIVCI  |        |        |     |   |  |  |
| 9 Dog-T1R2  | 96.4%  | 26.3%  |     |   |  |  |
| WRHLHTPVVRASAGGPMCFMLMLVPLLLAYAMVPMYIGQPTFFSCLWRQTFFTLCTFTICISITVRSFQIVCI |        |        |     |   |  |  |
| 10 Human-T1R2   | 96.8%  | 25.2%  |     |   |  |  |
| WRHFQTPIVRSAGGPMCFMLMLTLLVAYMVVVPYVGPVKVSTCLCRQALFPLCTFTICISCIIVRSFQIVCA  |        |        |     |   |  |  |
| 11 Fugu-T1R2  | 94.4%  | 28.1%  |     |   |  |  |
| AINYNTPVVRASAGGPMCFLLILGCLSLCSISIFFFDKPTVAFCVLRFLPFVLFYTVCLACFVVRSFQIVSI  |        |        |     |   |  |  |
| 12 Puffer-T1R2  | 94.4%  | 27.1%  |     |   |  |  |



AVNYNTPVVRSAAGGPMCFLLILGCLSLCSISVFFYFERPTEAFCILRFMPFLLFYAVCLACFAVRSFQIVII|  
 13 Fugu-T1R1 97.6% 28.0%  
 LLNINTPVAKSAGGRTCLLMLAALTAAMSSSLCHFQGQPSPLACILKQPLFTFSFTVCLACITVRSLQVVCII|  
 14 Puffer-T1R1 97.6% 27.5%  
 LLNINTPVAKSAGGRTCLLMLAALTAAMSSSLCHFQGQPSPLACMLKQPLFTFSFTVCLACIAVRSLQVVCII|  
 15 Chicken-T1R1 78.9% 23.3%  
 ARNASTPVVRSAAGGKMCFLMLGALACACSSIFFNFGEPTWLSCLVRIPLFTISFAVFLSCVATRCFQIVCII|  
 16 Opossum-T1R1 97.0% 27.4%  
 AQNLETPVVRSAAGGRMCFMLGSLAGAGCSPYCFLGEPTLLTCLLRQSLFALCFVFLSCLTIRSFQLVFI|  
 17 Dog-T1R1 97.3% 27.4%  
 AWHLDTPVVRSAAGRLCFMLGSLAGGSCGLYGFFGEPTLATCLLRQGLFALGFAIFLSCLTIRSFQLVFI|  
 18 Human-T1R1 97.3% 27.6%  
 AWHLDTPVVRSAAGRLCFMLGSLAAGSGSLYGFFGEPTRPACLLRQALFALGFTIFLSCLTVRSFQLIIII|  
 consensus/100%  
 ..**ph**to**sh**stuss**u**.**hshhh**L**h**.**L**.**hh**.....**h**..**t**.**Pt**...**Chhp**.....**h**..**sh**.**hshh**...**sh**.**hh**..  
 consensus/90%  
**h**.**ph**to**sl**spuu**GG**.**hshhh**L**hs****L**.**hs**.**hs**..**ha**.**spPs**...**Chhp**...**h**.**h**..**sh**.**luhhh**..**shp**l**hhh**  
 consensus/80%  
**hhph****TP**l**V**puu**GG**.**hshhh**L**hs****L**h**hs**.**hu**.**hhah****GpPs**.**h**.**Chhp**.**shht**l.**hshh**l**us**l**hh**pu**h**pu**h**l**hhh**  
 consensus/70%  
**hhph**s**TP**l**V**+uu**GG**.**hsh**l**h**L**ss****L**sh**ss**sh**Sl**hhah**GpPo**.**hs****C**l**hpps****L**hs**l**sh**sls****L**us**l**h**l**+**Sh**q**l**l**h**l**l**

cov pid 721 . . :  
 . . . 8 800  
 1 Medaka-V2R 100.0% 100.0% NVMKWFGPVQRLTVFSLTIIQVIICILWLTINPPFP--  
 FREK**I**ILECSLGSSLGFWAVLG**Y**IGILALLCFVL  
 2 Fugu-T1R3 96.8% 23.8% SYLHVLRGPGTWLLLLTCCAVQAGICGWFWQDGP**S**LSEY  
 DFVRSFLACPVSPSLSGFALMQGFS**A**AMALMSFMC  
 3 Puffer-T1R3 96.8% 25.6% SYLHVLRGPGTWLLLLTCCAVQAGICGWFWQEG**S**LSEY  
 DFVRSFLACPVSSLSGFGLMQGLITVMALISFMC  
 4 Chicken-T1R3 96.3% 26.1% TALRWVTPSRSWLLVALCLLTECLFCFCYLHLGPDYV--  
 LPTEVLLMCSTASWPAFALMHGYNGCLAFVCF**LC**  
 5 Opossum-T1R3 97.0% 24.7% LHG-WLHGTRAWLLVALLLLAEGALCTWYLLAF**PQ**AL--  
 LPREALVHCRVSSWLSFGVVHAVNVALAFLC**FLG**  
 6 Dog-T1R3 96.9% 23.7% QLRRCLQGPWAWLLVLLALLAEALCAWYLVAF**P**PEV--  
 LPTQVLVHCRVRSWISFGLVHAINAMLAFLC**FLG**  
 7 Human-T1R3 97.1% 24.0% RLSGCLRGPWAWLVLLAMLVEVALCTWYLVAF**P**PEV--  
 LPTEALVHCRTRSWVSFGLAHATNATLAFLC**FLG**  
 8 Opossum-T1R2 92.5% 24.9% AYSYWVKYNGPYV**F**VVLITLLKVGI**V**SSAMAIPT**S**P--  
 TILYDNENPQIMILNCNINSRKAILFNTSLDLILSIFG**FS**  
 9 Dog-T1R2 96.4% 26.3% AYGWVRCHGPPYV**F**VASFMVLKV**V**IVAGNVLAMTAN**P**--  
 TARPDOPDDPNIMVLSC--NYRRALLFNTSLDL**LL**SVAG**FS**  
 10 Human-T1R2 96.8% 25.2% AYSYWVRYQGPYV**S**MAFITVLKM**V**IVIGMLATGL**S**P--  
 TTRTDOPDDPKITIVSCNPYRNSLLFNTSLDL**LL**SVVG**FS**  
 11 Fugu-T1R2 94.4% 28.1% AHSWWMKYHGQWL**V**ISVTFVIQAF**L**IIVSVSSD**P**PSP--  
 YPD**K**IILGCFMNLKTSS-VSFVLLLLCL**LC**FI**F**  
 12 Puffer-T1R2 94.4% 27.1% VHSWWMKYHGQWL**V**ISVAFVLQAV**L**IVIAFSSD**P**PLP--  
 YPD**K**IILGCDVNLNMAS--TSFFFL**LL**CILC**FT**F  
 13 Fugu-T1R1 97.6% 28.0% AYDKWSKKQGPEV**T**IFIVSVTILCISVLRVAVGP**P**EP--  
 YMD**S**IVLECSNTLSPGSFIELCYVCVLSVLC**FFF**  
 14 Puffer-T1R1 97.6% 27.5% AYDRWAKNHGPEATIFIASAAILCVSVLRVAVGP**P**Q--  
 YTD**S**IVLECSNTLSPGSFVELCYV**S**LLSAVC**F**VF  
 15 Chicken-T1R1 78.9% 23.3% LHEAWQRRGGPALFIAGSTVAQAVLSVA**A**VASGPAG**P**--  
 AAERVVLECGAGSAPGETAA**I**LYNLLLSLGCFAL  
 16 Opossum-T1R1 97.0% 27.4% LYHTWVHNHGSR**T**FVAVSSTIQ**LL**ICSVWLVAWT**P**LP--  
 FPELVVLECSKENS**P**GYMLSILYTWLLSVSC**F**AC  
 17 Dog-T1R1 97.3% 27.4% FYQAWVQNHGPR**L**FVVISMAQ**LL**ICVTW**L**AVWT**P**LP--  
 FPQLVVLDCTEANS**P**GF**M**VAFAYNGLLSVSA**F**AC  
 18 Human-T1R1 97.3% 27.6% FYHAWVQNHGAGLFV**M**ISSAAQ**LL**ICLTWLVVWT**P**LP--  
 FPHLVMLECTETNSLG**F**ILAFLYNGLLSIS**A**FAC  
 consensus/100%  
**h**..**h**.**t**.....**h**.**h**...**hh**.**hhh**...**h**..**s**.....**h**l.**C**..**t**...**u**.....**h**..**l**  
 consensus/90%  
**h**.**hh**.**p**..**h**..**hh**l...**hh**.**hh**l.**hh**.**h**..**s**..**s**...**ph**.....**h**l**t****C**..**t**...**u**..**h**..**h**l  
 consensus/80%  
**h**.**hhhp**..**tsh**l**h**l**hh**..**hhph**l**shhh**l.**shss**.**s**..**htch****p**...**p**.**h**l**t****C**..**s**...**u**.**hh**.**hhh**.**hl**  
 consensus/70%  
**hath**W**h**+**t**G**sh**l**h**l**h**l**shhh**ph**hl**ss**hh**l**sh**P**s**.**s**..**hpch****p**..**hsp**.**h**l**Lp****C**s.**s**...**uhhhshshsh**

cov pid 801 . . :  
 . . . 880  
 1 Medaka-V2R 100.0% 100.0%  
 AFLARKLPDNFNEAK**F**ITFS**M**V**I**FS**A**V**W**IT**F**IPAYVSS**P**G**K**LT**V**AVE**I**FA**I**LASSY**G**IL**F**C**I**FAP**K**CY**I**L**A**I  
 2 Fugu-T1R3 96.8% 23.8%

TFMATKPLHQYNLARDITFSSLIYCVIIVWTFIPIYIGLEEKRRRIIHVSFILASDLGLVAVVYIPKCYFLLI  
3 Puffer-T1R3 96.8% 25.6%  
TFMATKPLHQYNLARDITFSSLIYCIIVWTFIPIYVGLEEKFKSIVYVSFILTSNLGMVAMYIIPKCYLLLI  
4 Chicken-T1R3 96.3% 26.1%  
TFMVQSSGKKYNMARGITFTILIYFIIWIFFTIVFATLRTLMSVQIISTILMVSLGIVGTYIIPKCYILLI  
5 Opossum-T1R3 97.0% 24.7%  
TFMVQSQAGRYNLARGITFAMLVYFIIWLSFVPLFTNVHKVYQPAQMATAILLASLGILAAFYLPKCYLLLI  
6 Dog-T1R3 96.9% 23.7%  
TFLVQSRPGRYNGARGLTFAMLAYFITWISFVPLFANVHVAYQPTVQMAAILLCALGILATFHLPKCYLLLI  
7 Human-T1R3 97.1% 24.0%  
TFLVRSQPGRYNRARGLTFAMLAYFITWVSFVPLLANVQVVLRAVQMGALLLCVLGILAAFHLPKCYLLMI  
8 Opossum-T1R2 92.5% 24.9%  
SYMKGELPTNYNEAKFITLSMTFYFASSAFLCTFMSVYQGVLLTIFDVSITVINLLSISMGYFGPKCYMILI  
9 Dog-T1R2 96.4% 26.3%  
AYMGKELPTNYNEAKFITLCMTFYFTSSVSLCTFMSVYDGVLVITLDDLITVLNLLGISFGYFGPKCYMVLII  
10 Human-T1R2 96.8% 25.2%  
AYMGKELPTNYNEAKFITLSMTFYFTSSVSLCTFMSAYSGVLVTIVDLLVTVLNLLAISLGYFGPKCYMILI  
11 Fugu-T1R2 94.4% 28.1%  
SYMGKDLPKNYNEAKAITFCLLLLILTWIIFTTASLLYQGGKYIHSNLALAVLSSIYSFLLWYFLPKCYIIII  
12 Puffer-T1R2 94.4% 27.1%  
SYMGKDLPKNYNEAKAITFCLLLLILTWIIFATVIMLYHGKYIHTNLALAVLSSAYCFLLWYFLPKCYIIII  
13 Fugu-T1R1 97.6% 28.0%  
SYMGKDLPANYNEAKCVTFSLMVYMISWISFFTYYLISRGPFVAAYVCATLVSVLAFFGGYFLPKIYIIVI  
14 Puffer-T1R1 97.6% 27.5%  
SYMGKDLPANYNEAKCVTFSLMVYMISWISFFTYYLISRGPFMAAYVCATLVSVLAFFGGYFLPKIYIIVI  
15 Chicken-T1R1 78.9% 23.3%  
SYAGKDLPADYNEAKCLTCSLLLHLACSAAVLCTRSYFRGRSAAVTAALGALGTAPLLSGYFLPKGFVVLII  
16 Opossum-T1R1 97.0% 27.4%  
TYLGKDLPENYNEAKCMTFSLLFYFISWIGLATSSSIYNGKYPAINMLVILSSLSGVFSGYFLPKCYVILI  
17 Dog-T1R1 97.3% 27.4%  
SYLGKDLPENYNEAKCVTFSLLLNFVSWIGFFTTASVYQGGKYLPAVNVAALSSLSGFSGYFLPKCYVILI  
18 Human-T1R1 97.3% 27.6%  
SYLGKDLPENYNEAKCVTFSLLFNFVSWIAFFTTASVYDGGKYLPAANMMAGLSSLSGFGGYFLPKCYVILI  
consensus/100%  
sahspp..tpaN.A+.hThs.hh..h..h.hhs.....h.h.hhl.s..sh..hhahP+hahlh  
consensus/90%  
sahspp..tpYN.A+.lThs.hh.hh..h.hhsh....p..h..hh.h.hhl.s..sh..haahPKhYhlhl  
consensus/80%  
oahspp.stpYN.A+hlThshhhhhh..l.hhshh..hpsHHshhth.hhL.s.huhhhsaahPKCYhlII  
consensus/70%  
oahu+chPtpYnCA+slTFuhlhahlsWlsFshshshhpsHHshshphhshLshshuhhhsYalPKCYIlli

|                 | cov    | pid    | 881                         | . | 9 | ] 907 |
|-----------------|--------|--------|-----------------------------|---|---|-------|
| 1 Medaka-V2R    | 100.0% | 100.0% | SM-----LGKS-----            |   |   |       |
| 2 Fugu-T1R3     | 96.8%  | 23.8%  | HF-----                     |   |   |       |
| 3 Puffer-T1R3   | 96.8%  | 25.6%  | HF-----                     |   |   |       |
| 4 Chicken-T1R3  | 96.3%  | 26.1%  | YFQYSTKEEPEGDSQ-----        |   |   |       |
| 5 Opossum-T1R3  | 97.0%  | 24.7%  | FFQSSLELGPASGEAQEEKPEKRRSQ  |   |   |       |
| 6 Dog-T1R3      | 96.9%  | 23.7%  | FF---LGDDARGQGSSSGGKET----  |   |   |       |
| 7 Human-T1R3    | 97.1%  | 24.0%  | FFLGGGPQDAQGQNDGNTGNQKGHE-- |   |   |       |
| 8 Opossum-T1R2  | 92.5%  | 24.9%  | YFNNVIQGYTMRKE-----         |   |   |       |
| 9 Dog-T1R2      | 96.4%  | 26.3%  | YFSSMIQGYTMGKD-----         |   |   |       |
| 10 Human-T1R2   | 96.8%  | 25.2%  | YFNMIQGYTMRD-----           |   |   |       |
| 11 Fugu-T1R2    | 94.4%  | 28.1%  | YFQGLIQDYTK-----            |   |   |       |
| 12 Puffer-T1R2  | 94.4%  | 27.1%  | YFQGLIQDYTK-----            |   |   |       |
| 13 Fugu-T1R1    | 97.6%  | 28.0%  | HFQNCIQMYTMSKQ-----         |   |   |       |
| 14 Puffer-T1R1  | 97.6%  | 27.5%  | HFQNCIQMYTMSKQ-----         |   |   |       |
| 15 Chicken-T1R1 | 78.9%  | 23.3%  | RFQQEIRSYTRR-----           |   |   |       |
| 16 Opossum-T1R1 | 97.0%  | 27.4%  | YFQASIQDYTRRCSSP-----       |   |   |       |
| 17 Dog-T1R1     | 97.3%  | 27.4%  | HFQASIQDYTRRCGST-----       |   |   |       |
| 18 Human-T1R1   | 97.3%  | 27.6%  | HFQASIQDYTRRCGST-----       |   |   |       |
| consensus/100%  |        |        | .h.....                     |   |   |       |
| consensus/90%   |        |        | hF.....                     |   |   |       |
| consensus/80%   |        |        | aF...h...s.....             |   |   |       |
| consensus/70%   |        |        | aFpt.lp..shpt.....          |   |   |       |



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EMBL-EBI, Wellcome Genome Campus, Hinxton, Cambridgeshire, CB10 1SD, UK.

Tel: +44 (0)1223 49 44 44

[Full contact details](#)

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