

## CORRIGENDUM

A calcium-activated nucleotidase secreted from  
*Ostertagia ostertagi* 4th-stage larvae is a member of the  
novel salivary apyrases present in blood-feeding  
arthropods – CORRIGENDUM

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The order of sequences that appear in [Figure 1B](#) should read as follows:

Oos-APY-1

Ll

Hu

Xl

Ce

Cl

Dm

Mm

Pp

Rn

The correct version of [Figure 1B](#) is presented overleaf.

Oos-APY-1 \* 50 \* : 26  
 Ll -----MLLYILSLVLLIDALP-PGYPDSKE-----HG : 26  
 Hu -----MFLKVVVCAFATVFLVGVQAAPP----- : 25  
 Xi -----MTKAADPRFRPRRWKVIITFFVGAAILWLLCSHR--PAPGRPPHTN : 43  
 Ce ---MKSPQVECKESMSPLRISVAGLPVLSMTKTADPRFRPRRWAILLSGIAVAFLLLLLCYHR-SSGPRIQVAN : 71  
 Cl -----MTQESNSNFFNLLFGFVTAIAFYSGTQFNKSSEQEEHINHA : 42  
 Dm MQSPAFAYREHAHSPRAMYMRDWRSLRTPTYRIGNRTVRFNYHFALLIVCAFVLLVLFYFARQSGHSSSDGYW : 75  
 Mm MPIQPFQREWNPMHSLRISVGGPLVLSMTKATDPRFRPRRWVILTSFVGAALLWLLYSHHQGPVGRPPHTN : 75  
 Pp -----MFLKFCIVAFICLSINLSEGAPRS----- : 25  
 Rn MPIQPFQREWNPMHSLRISVGGPLVLSMTKATDPRFRPRRWVILTSFVGAALLWLLYSHHQTPVSGRPPHTN : 75

Oos-APY-1 100 + \* 150 : 72  
 Ll SRPTIRSLP-----DGSTEVKLLIVTDMKDSRAGEW---TRAVTREGLLTLS : 72  
 Hu -----VEWHFGLIADMDKKSIAAS---DKTTFNSVLKIDELRHN : 61  
 Xi AHNWRLGQAPA-----NWNNDTYPLSPQ-RTPAGIRYRIAVIADDTESRAQE---ENTWFSYLKKGYLTL : 107  
 Ce PHNWRMVHVQVAG-----ELYNDTYPLTPPL-RTPEGLRYHIAIADDTDSRSKAK---ANTVVSYLKRGYLTLS : 136  
 Cl NLYSVKFFD-----DGAKFYSIMLITDLDHDSKDGK---KAKSLVSRGFLKVS : 87  
 Dm PLTTTPVEE-----NLKVRFKIGVTSDDKNAVSKD--ESNTWVSTYLTGTLEWE : 98  
 Ll LRRSYTDARSLDNGGPPVQAYNATYPLTSPMVLRRGGVINYRIAMADDTSSKVSKGDGSSTRRSYLKKGYLTYT : 150  
 Mm AHNWRLSQQRI-----SHYNDTYPLSPQ-RTPGGIRYRIAVIADDTGSRAGE---ENTWFSYLKKGYLTL : 139  
 Pp -----GTIYNFAIADLDKKSISPK--NDNNYKSIVKVELIEV : 62  
 Rn AHNWRLRQERI-----SQYNDTYPLSPQ-RTPGGIRYRIAVIADDTGSKAQE---ENTWFSYLKKGYLTL : 139

Oos-APY-1 \* + \*\* + \* 200 \* : 146  
 Ll PDMTHVSITWDEKSERNLTSMMNIGRAMELSDLSVFNHRILTPDDRTGLISEIKNN-KMIPVWFLNSCPGNTTS : 146  
 Hu TKTDQYIYVRSR-VKKPVSTRYGFKRGCMELSEIVVFNNKLYTVDDKSCITFRITKDKGLFPVWILADAGQRPD : 135  
 Xi DSGDKVAVENDK-DHGVLESHLAEKGRGMELSDLIVFNKGLYSVDDRTGVVYQIEGS-KAVPWWILSDGDTVEK : 180  
 Ce SSGDHVAVWEK-EDIVLETHLAEKGRGMELSELIVFNKGLYSVDDRTGVVYRIEES-KAVPWWILTDGDTVVK : 209  
 Cl ADHKHADIFHDKDSYVDTNIAAGGRAMELSDLAVFNKGLYSIDDRGLIYQISDK-KALPWWLLDGGPGNVVK : 161  
 Dm KSTDKITVQWDKGNKVKSKSYGGRGMELSELVTFNGLLTFDDRTGLVYILKDD-KVYVWVLDGDKNSK : 172  
 Mm VARSEIQISWDDGAPVLESALFKGRGMELSELVTFNGLLTFDDRTGLIYEVND-KPIPVWVLLDGDGHSK : 224  
 Ll DSGDRVSVENDK-DHGVLESHLAEKGRGMELSDLIVFNKGLYSVDDRTGVVYQIEGT-KAVPWWILSDGDTVEK : 212  
 Pp G--DKYSVMKKK-EDHEIFTKYAYKRGCMELSEFLIYKWKLYTEDDDKSCIVFRLKTNADLIPWVLANNGDQTD : 134  
 Rn DSGDRVSVENDK-DRGVLESHLAEKGRGMELSDLIVFNKGLYSVDDRTGVVYQIEGT-KAVPWWILSDGDTVEK : 212

Oos-APY-1 + \* + + + \* 250 \* 300 \* : 220  
 Ll PFKCEWMTIKDDVLVYGGHENVFRNREGKIVHQNMMIKITVTPPEGEVTVNDVTDVYNNAR-NAVGISEPGYLTHE : 220  
 Hu GFKGEWATIKDDTVYVGGTGM-----LKFTS--SLWVKKITKDGVTSHDWDKRYKIL-KALNMPN-GFVWHE : 200  
 Xi GFKAELAVKDEQLVYGGGLCKEWTTTGCVVNNENPEWVKVVGYSVDHENWVSNYNALR-AAAGIQPPGYLIHE : 254  
 Ce GFKAELAVKDEQLVYGGGLCKEWTTSAGOVNLENPEWVKVIGPRDQTHHNWVSNYNQLR-SAGIQPPGYLIHE : 283  
 Cl GFKGEWITVKTDELIVYGGGLCKEWTTDGCVVNDHFMVWVHVSAGCAVHHENKDVYIRVR-RAAGIEYPGYMIHE : 235  
 Dm GFKSWATEKAGNLVYVSSCKEWTKEGTFENYVNMVWKMINKNEVTSLNWQTNYEKIR-SSMNIETPPGYMHE : 246  
 Ll GFKAELAVKDEQLVYVSMCKEWTTSAGOVNLENPEWVKVIGPRDQTHHNWVSNYNQLR-AAAGIQPPGYLIHE : 299  
 Mm GFKAELAVKDEHLVYGGGLCKEWTTTGCVVNNENPEWVKVVGHRGSDHENWVSSYNALR-AAAGIRPPGYLIHE : 286  
 Pp GFKAELAVKDEHLVYGGGLCKEWTTTGCVVNNENPEWVKVVGHRGSDHENWVSSYNALR-AAAGIQPPGYLIHE : 286  
 Rn GFKAELAVKDEHLVYGGGLCKEWTTTGCVVNNENPEWVKVVGHRGSDHENWVSSYNALR-AAAGIQPPGYLIHE : 286

Oos-APY-1 + + \* 350 \* : 293  
 Ll AVQWSETQGHWFYFLPRKESKTVYVEEEDTKGTDLIIIGNPDLQDFEVKRVG-ILRPE-RGYSAFDFIPGTDKI : 293  
 Hu AVTWSPFRKQVFMPRKCSRHPFSQLEBERTGCNKIVTADENENDIQIHIQDQPYNLASGFSSFRFPGTKNER : 275  
 Xi SACWSDTLQRWFFLPRRASQERYSEKDDERKGANLLLSASPDEGDIASHVG--AVVPTHGFSFRFPGTDQI : 327  
 Ce SAAWSDSLKSWFFLPRRASQEQYSEKEDKRGANLLLRATPDESDIKMSHV--TLNPTHGFSFRFPGTDQI : 356  
 Cl AVQWSAIHRKWFLLPRRMSNEKYSEAEENRGTNVLVIGNEELTDFEVVRVG-SENKSRGFAAFQFVPTHQL : 309  
 Dm AACWSDKYNKWFLLPRRALSQEAYSKFFETQGANVVISDDKFEKCEPTQIQKTEDKR-GFSNFRFVPTSEKI : 320  
 Ll SGTWSEERNRWFLLPRRCSKEKYNETKDEHMGCVLVSADESFNTVETVRLDPENTTPHGFSSFRFPGTDQI : 374  
 Mm SACWSDTLQRWFFLPRRASHERYSEKDDERKSNLLLSAQDFRDISVRQVG--TLIPHTGFSFRFPGTDQI : 359  
 Pp AVNWSKLNQWVFLPRKCSERPFDTKTEBTIGCNKIIIASENFEIIKSIQIKGSINRAAGFSSFRFPDSDQI : 281  
 Rn SACWSDTLQRWFFLPRRASHERYSEREDERKSNLLLSAAQDFRDISVRQVG--ALVPTHGFSFRFPGTDQI : 359

Oos-APY-1 + \* 400 + \* : 339  
 Ll IVALKSKQVTEPVEFYITVETTDQVLLDDQKLDGNYKEGLHFI----- : 339  
 Hu LLALRTVEQEDQ-VRTWAVVMDMRGTVLMEKELY-DEKFEGLAFGG----IKKN- : 325  
 Xi IVALKSEEDSGR-VASYIMAFTLDCRFLPETKIG-SVKYEGIEFI : 371  
 Cl IVALKSEEDNGK-VATYITAFTLDCRFLPETKIG-NVKYEGIEFI----- : 400  
 Ce IVALKSEEDKGPVASYASVFDIHCNVILDEYLLHGPKYKYEIIFA----- : 355  
 Dm IVGLKTVEADDT-TETYFTAFDLECKVLEBETKID-DHKYEGVDFV----- : 364  
 Ll IVALKSEELNGK-TATFITAFDIACKTLLPETRIETDYKYEGEIEFI----- : 419  
 Mm IVALKSEEDNGR-IATYVMAFTLDCRFLPETKIG-TVKYEGIEFI----- : 403  
 Pp LLALKTIKDDK-TATYITVIDITGRVLMPEMQIN-SDKYEGIVLLKSTEGFLKRSQ : 336  
 Rn IVALKSEEDNGR-IATYVMAFTLDCRFLPETKIG-SVKYEGIEFI----- : 403

B

REFERENCE

Zarlenga, D. S., Nisbet, A. J., Gasbarre, L. C. and Garrett, W. M. (2011). A calcium-activated nucleotidase secreted from *Ostertagia ostertagi* 4th-stage larvae is a member of the novel salivary apyrases present in blood-feeding arthropods. *Parasitology*, **138**, 333–343. doi: 10.1017/S0031182010001241.