

Supplemental Data-1

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mPAD-2-protein 1:MQPPIREMLRERTVRLQYCSRVEATVYLLCTQLWTDVYBAASAGARTFSLKHSSECTKQEV 60
hPAD-4-protein 1:-----SAQGTLLRVTPEQPTHTAVCVLGLTLQLDICSASASEDCTSSEINASFGVWDI 52

mPAD-2-protein 61:VRDGEREEVVTNFKQSMALSSSSTLRLSMAQSTTEASSDRTVMYVEEESAEIDQACFP 120
hPAD-4-protein 53:AHSPFAKKKST-CSSSTWELDSEVVEVTLTKKAAASGSTGDQKVIISVYGPK-TSEV-KALLEY 109

mPAD-2-protein 121:LTRIETSLDVADEDEEV--EKNMPKASWTWCFCCGCAILLVNCDDRTFWLP-KECCSE 177
hPAD-4-protein 110:LTRVEISLCAITRCKVKPTRAVKDRQRTWTWCFCCGCAILLVNCDDRWLSSAM-DCES 168

mPAD-2-protein 178:EKVYSKQDLQDMISQMLRTEGSDRLPAGVEITLYISMEDSDKTCGVYVENPPFGQRYIHI 237
hPAD-4-protein 169:DEVLDSBDLQDMISLMTLSTSTSKDPPTMHTLVLHVARESEMCKVRFQATRGLSSEKCSVV 228

mPAD-2-protein 238:LCRQKLYEVVKYTCSSAELISFVEGACCFDSESSCLVSIHVSLLEYMAEGIELTFIETDT 297
hPAD-4-protein 229:LCRQKLYEVVKYTCSSAELISFVEGACCFDSESSCLVSIHVSLLEYMAEGIELTFIETDT 288

mPAD-2-protein 298:VVERVAPWIMTIFMTQPPQSEVYACSIPEDEDELNSVITLAKAKCKTICPEEENMDQDM 357
hPAD-4-protein 289:VVERVAPWIMTIFMTQPPQSEVYACSIPEDEDELNSVITLAKAKCKTICPEEENMDQDM 348

mPAD-2-protein 358:GIEIEFCYIEAPHKCFPVVLDSEPRCGMLRDFPIKQLLCPDRCYVTRSELFTVTSLDSEFC 417
hPAD-4-protein 349:GIEIEFCYIEAPHKCFPVVLDSEPRCGMLRDFPIKRVMLCPDRCYVTRSELFTVTSLDSEFC 408

mPAD-2-protein 418:MLEVSPPVTVCKEYPLGRILIC-SSFLSGCSRMTKWRDFLQAGQVQAFVRLYSDWLT 476
hPAD-4-protein 409:MLEVSPPVTVCKEYPLGRILIC-SSFLSGCSRMTKWRDFLQAGQVQAFVRLYSDWLS 468

mPAD-2-protein 477:VCHVDEPMTSIFITPKKSEFRLMASPSACTQLERKPKAKHGENVMKSLCCMSSEKITF 536
hPAD-4-protein 469:VCHVDEPMTSIFITPKKSEFRLMASPSACTQLERKPKAKHGENVMKSLCCMSSEKITF 526

mPAD-2-protein 537:KNILSNESLTQESQYFQRCLOWNRDILKRELADTEKDIIDLEALFRMDENHQARAFFPMM 596
hPAD-4-protein 527:KNILSNESLTQESQYFQRCLOWNRDILKRELADTEKDIIDLEALFRMDENHQARAFFPMM 586

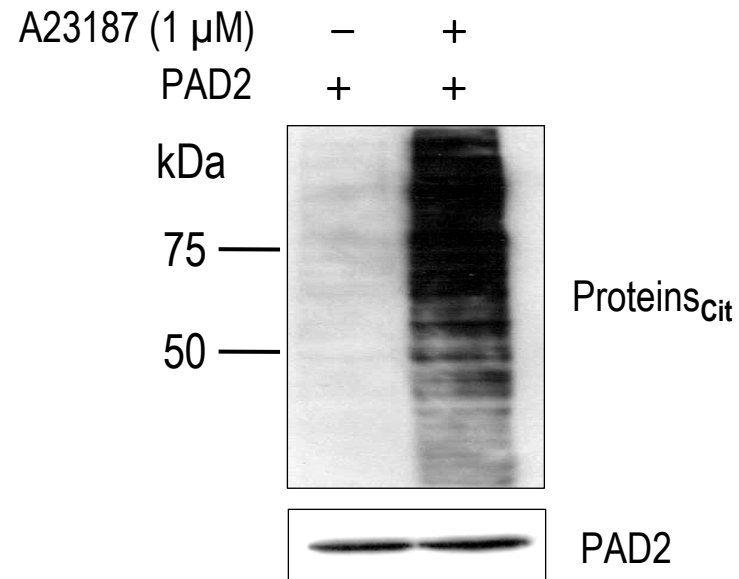
mPAD-2-protein 597:VNMIVLDSDELCTPKPFCQVEECCLETHRGDLEPLGLACTFIDGISAHRKFLSEVHCC 656
hPAD-4-protein 587:VNMIVLDSDELCTPKPFCQVEECCLETHRGDLEPLGLACTFIDGISAHRKFLSEVHCC 646

mPAD-2-protein 657:INVRKPEAFKMMHW- 672
hPAD-4-protein 647:INVRKPEAFKMMHW- 663

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Amino acid sequence comparison between mouse PAD2 and human PAD4. The residues conserved in the two clones are highlighted in black. Amino acid residues for Ca²⁺ binding are labeled as stars. The mutation of Gln358 (red box) with an Ala abolishes the coimmunoprecipitation of PAD2 and IKKgamma (described in the main text).

Supplemental Data-2



PAD2-mediated citrullination in HEK 293 cells. Cells transfected with FLAG-tagged PAD2 were incubated with 1 μ M calcium ionophore A23187 for 1 h. Protein citrullination was determined by immunoblotting total proteins from cell lysates with the anti-citrulline antibody. To determine PAD2 expression, a sister immunoblot membrane was probed with the anti-FLAG antibody.