

Figure 1, supplement 1

cPLA2 α (GIVA) sequences

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|-------|------------|--|-------------|---|------------|------------|-------------|------------|-----|
| HUMAN | MSFIDPYQHI | IVEHQYSHKF | TVVVLRA TKV | TKGAFGDMLD | TPDPYVELFI | STTPDSRKRT | RHFNNNDINPV | WNETFEFILD | 80 |
| MOUSE | MSFIDPYQHI | IVEHQYSHKF | TVVVLRA TKV | TKGTFGDMLD | TPDPYVELFI | STTPDSRKRT | RHFNNNDINPV | WNETFEFILD | 80 |
| CHICK | MSFIDPYQHI | VVEHQYSHVF | TVTVRKATNV | TKGAIGDMLD | TPDPYVELFI | PSAPDCRKRT | KHFNNNDVNPV | WNETFEFILD | 80 |
| | ***** | :***** * | **.* :*: * | ***:.**** | ***** | ..*:.**** | :***:*** | ***** | |
| HUMAN | PNQENVLEIT | LM DANYVMDE | TLGTATFTVS | SMKVGEKKEV | PFIFNQVTEM | VLEMSLEVCS | CPDLRFSMAL | CDQEKTFRQQ | 160 |
| MOUSE | PNQENVLEIT | LM DANYVMDE | TLGTATFPVS | SMKVGEKKEV | PFIFNQVTEM | ILEMSLEVCS | CPDLRFSMAL | CDQEKTFRQQ | 160 |
| CHICK | PNQDNVLEVT | LM DANYVMDE | TLGMATFPIS | SLKLGEKKEV | QLTFNNVTEM | TLELSLEVCS | STDLRFSMAL | CDEEKKFRQQ | 160 |
| | ***:****:* | ** ***** | *** **.*: | *:.*:***** | : **.*:*** | **.*:***** | ..***** | **.*:*** | |
| HUMAN | RKEHIRESMK | KLLGPKNSEG | LHSARDVPV | AILGSGGGFR | AMVGFSGV | ALYESGILDC | ATYVAGLSGS | TWYMSTLYSH | 240 |
| MOUSE | RKENIKENMK | KLLGPKKSEG | LYSTRDVPV | AILGSGGGFR | AMVGFSGV | ALYESGILDC | ATYIAGLSGS | TWYMSTLYSH | 240 |
| CHICK | RKDNIMQSMK | SFLGEENSKN | LTTSRDVPVI | AVLGSGGGFR | AMVGFAGVM | ALYESGVLD | ATYIAGLSGS | TWYMSTLYSH | 240 |
| | **:* :.* | .*.* :*:. | * :*:***** | *:***** | *****:*** | *****:*** | ***:***** | ***** | |
| HUMAN | PDFPEKGPEE | INEELMKNVS | HNPLLLLTPO | KVKRYVESLW | KKKSSGQPV | FTDIFGMLIG | ETLIHNRMT | TLSSLKEKVN | 320 |
| MOUSE | PDFPEKGPEE | INEELMKNVS | HNPLLLLTPO | KVKRYVESLW | KKKSSGQPV | FTDIFGMLIG | ETLIQNRMS | TLSSLKEKVN | 320 |
| CHICK | PDFPEKGPEE | INQELMNSVS | HNPLLLLTPO | KVKRYIEALW | NKKSSGQPV | FTDIFGMLIG | ETLIHNRMD | TLSDMKEKVS | 320 |
| | *****:* | **.*:.* | ***** | *****:* | ***** | ***** | *****:*** | ***:*** | |
| HUMAN | TAQCPLPLFT | CLHVKPDVSE | LMFADWVEFS | PYEIGMAKYG | TFMAPDLFGS | KFFMGTVVKK | YEENPLHFLM | GVWGSAFSIL | 400 |
| MOUSE | AARCPLPLFT | CLHVKPDVSE | LMFADWVEFS | PYEIGMAKYG | TFMAPDLFGS | KFFMGTVVKK | YEENPLHFLM | GVWGSAFSIL | 400 |
| CHICK | EAQCALPLFT | CLHVKPDVSE | LMFADWVEFS | PYEIGMAKYG | TFMSPDLFGS | KFFMGTVVKK | YSENPLHFLM | GVWGSAFSIL | 400 |
| | *.*:***** | ***** | ***** | ***** | ***:***** | ***** | *.***** | ***** | |
| HUMAN | FNRVLGVSGS | QSRGSTMEEE | LENITTKHIV | SNDSSDSDDE | SHEPKGTENE | DAGSDYQSDN | QASWIHRMIM | ALVSDSALFN | 480 |
| MOUSE | FNRVLGVSGS | QNKGSTMEEE | LENITAKHIV | SNDSSDSDDE | AQGPKGTENE | EAEKEYQSDN | QASWVHRMLM | ALVSDSALFN | 480 |
| CHICK | FNRVLGVSNS | QNKGPTMEEE | LENIRLKLHV | SNDSSDSEDE | SQHPKGTENS | EANEYQNSS | QESWVQRMLM | ALVGDSALFN | 480 |
| | *****.* | *.*:***** | **** **.* | *****:* | :: ***** | :* :*:... | * **.*:*** | ***.***** | |
| HUMAN | TREGRAGKVH | NFMLGLNLNT | SYPLSPLSDF | ATQDSFDDDE | LDAAVADPDE | FERIYEPLDV | KSKKIHVVDS | GLTFNLPYPL | 560 |
| MOUSE | TREGRAGKVH | NFMLGLNLNT | SYPLSPLRDF | SSQDSFD-DE | LDAAVADPDE | FERIYEPLDV | KSKKIHVVDS | GLTFNLPYPL | 560 |
| CHICK | TREGRAGKVH | NFMLGLNLNS | CYPLSPLADL | LTQESVEEDE | LDAAVADPDE | FERIYEPLDV | KSKKIHIVDS | GLTFNLPYPL | 560 |
| | ***** | *****: | .**** * | :*:*.*: ** | ***** | ***** | *****:*** | ***** | |
| HUMAN | ILRPQRGVDL | IISFDFSARP | SDSSPPFKEL | LLAEKWAKMN | KLPFPKIDPY | VFDREGLKEC | YVFKPKNPDM | EKDCPTIIHF | 640 |
| MOUSE | ILRPQRGVDL | IISFDFSARP | SDTSPPFKEI | LLAEKWAKMN | KLPFPKIDPY | VFDREGLKEC | YVFKPKNPDM | EKDCPTIIHF | 640 |
| CHICK | ILRPQRGVDL | IISFDFSARP | SDSSPPFKEL | LLAEKWAKMN | KLPFPKIDPN | VFDREGLKEC | YVFKPKDTSS | EKDCPTIIHF | 640 |
| | ***** | ***** | **.*:***** | ***** | ***** | ***** | *****:.. | ***** | |
| HUMAN | VLANINFRKY | RAPGVPRETE | EEKEIADF | FDDPESPFST | FNFQYPNQAF | KRLHDLMHFN | TLNNIDVIKE | AMVESIEYRR | 720 |
| MOUSE | VLANINFRKY | KAPGVLRETK | EEKEIADF | FDDPESPFST | FNFQYPNQAF | KRLHDLMYFN | TLNNIDVIK | AIVESIEYRR | 720 |
| CHICK | VLANINFRKY | KAPGLPRESK | EEKDFADF | FDDPNTPFST | FNFQYPNEAF | KRLHDLMEFN | TLNNLDVIK | AMMESIEYRK | 720 |
| | ***** | :***: **.* | ***:***** | *****:*** | *****:* | ***** * | *****:*** | *.*:***** | |
| HUMAN | QNPSRCSVSL | SNVEARRFFN | KEFLSKPKA | In C2-Domain, Ca ²⁺ binding residues are cyan, DHPC binding residues are yellow, C1P binding residues are beige, and membrane interaction residues are burgundy. In Catalytic Domain, active site residues are orange, PAPC polar headgroup interacting residues are blue, PAPC acyl chain interacting residues are lavender, PIP2 interacting residues are magenta, and phosphorylation sites are green. | | | | | |
| MOUSE | QNPSRCSVSL | SNVEARKFFN | KEFLSKPTV | | | | | | |
| CHICK | ENPSRCSVSL | SSVEARRFFN | KNNLNNH-T | | | | | | |
| | :***** | *.***** | *: *.* | | | | | | |