

## Supplementary Figures

(I) see Fig.1 legend.

N-terminus 5-aa truncation mutants	TDO/QDO
DENFKRCFRDFCFPLKMRMERQSTSRVRNTVQDPAYLRDIDGMNKPV	+++/>+++
RCFRDFCFPLKMRMERQSTSRVRNTVQDPAYLRDIDGMNKPV	++/++
<b>FCFPL</b> KMRMERQSTSRVRNTVQDPAYLRDIDGMNKPV	++/++
KMRMERQSTSRVRNTVQDPAYLRDIDGMNKPV	-/-
RQSTSRVRNTVQDPAYLRDIDGMNKPV	-/-
RVRNTVQDPAYLRDIDGMNKPV	-/-
C-terminus 5-aa truncation mutants	
DENFKRCFRDFCFPLKMRMERQSTSRVRNTVQDPAYLRDIDG	++/++
DENFKRCFRDFCFPLKMRMERQSTSRVRNTVQDPAYL	++/++
DENFKRCFRDFCFPLKMRMERQSTSRVRNTVQ	++/++
DENFKRCFRDFCFPLKMRMERQ <b>STSRV</b>	++/++
DENFKRCFRDFCFPLK <b>MRMERQ</b>	+/>+
DENFKRCFRDFC <b>FPLKM</b>	+/>-
DENFKRCFRDFC	-/-
DENFKRC	-/-
Double alanine-substitution mutants	
DENFKRCFRD <b>FCFPLKMR</b> MERQSTSRVRNTVQDPAYLRDIDGMNKPV	+++/>+++
----- <b>AA</b> -----	++/-
----- <b>AA</b> -----	-/-
----- <b>AA</b> -----	++/-
----- <b>AA</b> -----	-/-
-----AA-----	++/++
-----AA-----	++/++

(II) see Fig.4 legend.

N-terminus 10-aa truncation mutants		TDO/QDO
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYVAYSDES <b>VYGK</b>		+++ / +++
<b>KYL</b> VP <b>SDL</b> TVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYVAYSDES <b>VYGK</b>		+++ / ++
GQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYVAYSDES <b>VYGK</b>		- / -
IHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYVAYSDES <b>VYGK</b>		- / -
C-terminus 10-aa truncation mutants		TDO/QDO
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / +++
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV		- / -
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYED		- / -
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIP		- / -
N-terminus double truncation mutants		TDO/QDO
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / +++
RVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / +++
PDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / +++
<b>LD</b> KRKYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / ++
KRKYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / -
KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / ++
<b>LV</b> PSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		+++ / +++
<b>PS</b> DLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		++ / -
DLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		- / -
TVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		- / -
GQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VYGK</b>		- / -
C-terminus double truncation mutants		TDO/QDO
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b> <b>VY</b>		+++ / +++
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYSDES</b>		+++ / +++
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AYS</b> <b>SD</b>		+++ / +++
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV <b>AY</b>		++ / -
KARVPDL <b>DKR</b> KYLVPSDLTVGQFYFLIRKRIHLRPEDALFFFVNNTIPPTSATMGQLYEDNHEEDYFLYV		- / -