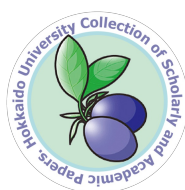




HOKKAIDO UNIVERSITY

Title	Functional characterization of lysosomal interaction of Akt with VRK2
Author(s)	Hirata, Noriyuki; Suizu, Futoshi; Matsuda-Lennikov, Mami et al.
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Supplemental data 2 (Fig. 1 & 2 related)

a

VRK1 -----
 VRK2 -----
 VRK3 MISFCPDCGKSIQA AFKFCPYCGNSLPVEEHVGSQTFVNPHVSS FQGSKRGLNSSFETSP

VRK1 -----
 VRK2 -----
 VRK3 KKVKWSSTVTSPRLSLFSDGDSSEEDTLSSSERSKSGSGSRPPTPKSSPQKTRKSPQVTR

VRK1 -----MPRVKAAQAGRQSSAKRHLAEQFAVGEIITDMAKKEWKVGLPIGQGGFGCI
 VRK2 -----MPPKRNEKYKLP IPFPEGKVLDDMEGNQWVLGKKIGSGGFLI
 VRK3 GSPQKTSCSPQKTRQSPQTLKRSRVTTSLALPTGTVLTDKSGRQWKLSFQTRDNQGIL
 : * : : * : * : : * :

VRK1 YLADMNSSSESVGS--DAPCVV KVEPSDNGPLFTELKIFYQRAAKPEQIQKWIRTRKLYLG
 VRK2 YLAFPTNKPEK----DARHVV KVEYQENGPLFSELKIFYQRAAKDCIKKWI ERKQLDYL
 VRK3 YEAAPTSTLTCDSGPQKQKFSKLDAKDGR LFNEQNFFQRAAKPLQVNKWKLYSTPLLA
 * * . . . : . : * * * * : * * * * : * * * * : * * * * : *

VRK1 VPKYWGSGLHDKNGKSYRFMIMDRFGSDLQKIYEA-NAKRFSRKT VQLSLRILDILEYI
 VRK2 IPLFYGSGLTEFKGRSYRFMVMERLGIDLQKISGQ-NGT-FKKSTVLQLGIRMLDVLEYI
 VRK3 IPTCMGFGVHQDK---YRFLVLP SLGRSLQSLADVSPKHVLSERSVLQVACRLLDAL EFL
 : * * * : : * * * : : * * * : : * * * : : * * * : : * * * : *

VRK1 HEHEYVHGDI KASNLLNYPNDQVYLVDYGLAYRYCPEGVHKEYKEDPKRCHDGTIEFT
 VRK2 HENEYVHGDI KASNLLNYPNDQVYLVDYGLAYRYCPEGVHKEYKEDPKRCHDGTIEFT
 VRK3 HENEYVHGDI KASNLLNYPNDQVYLVDYGLAYRYCPEGVHKEYKEDPKRCHDGTIEFT
 * * * * * : : * * * : : * * * : : * * * : : * * * : : * * * : *

VRK1 SIDA HNGVAPSRRGDLEILGYCMIQWLTGHL PWEDNLKDPKYVRDSKIRYRENIASLMDK
 VRK2 SLDA HKGVALSRRSDVEILGYCMLRWLCGKLPWEQNLKDPVAVQTAKTNLLDEL PQSVLK
 VRK3 SMDLHKGC GSPRRSDLQSLGYCMLKWLYGFLPWTNCLPNTEDIMKQKQKFVDKPGPFVGP
 * * * * * : : * * * : : * * * : : * * * : : * * * : : * * * : *

VRK1 CFPEKNKPGEIAKYMETVKLLDYTEKPLYENLRDILLQGLKAIGSKDDGK-----L
 VRK2 WAPSGSSCCEIAQFLVCAHSLAYDEKPNYQALKKILNPHGIPLGPLDFSTKGQSINVHTP
 VRK3 CGHWIRPSETLQYLVVMALTYEEKPPYAMLRNNLEALLQDLR-----
 : : : : * * * * * : : * * * : :

VRK1 DLSVVENGG LKAKTITKRRKKEIEESKEPG-----VEDTEWSNTQT EEA IQTRS
 VRK2 NSQKVDSQKAATKQVNKAHNRLIEKKVHSERSAESCATWKVQKEEKLIGLMNNEAAQEST
 VRK3 -VSPYDPIGLPMVP-----
 : :

VRK1 RTRKRVQK-----
 VRK2 RRRQKYQESQEPLNEVNSFPQKISYTQFPNSFYEPHQDFTSPDIFKKSRSPSWYKYTSTV
 VRK3 -----

VRK1 -----
 VRK2 STGITDLESSTGLWPTISQFTLSEETNADVYYR I I I P V L L M L V F L A L F F L
 VRK3 -----

Transmembrane Domain

Kinase Domain

▼ ATP binding site

▼ kinase active site

b

Structure of VRK2A and VRK2B

