

Supplementary Table II. Conserved water interactions. Oxygen and nitrogen atoms within 3.2 Å of each conserved water are listed by residue number. Conserved residues are in bold and organized by row. Dashes indicate samples missing the conserved water.

Water	Kinase												
	Akt2	CDK2	CK1	CK2	DAPK	IRK	p38- γ	PhK	Pim-1	PKA	Rio2	Sky1P	TAO2
A _w	OE2-E200	OE2-E51	OE2-E55	OE2-E81	OE2-E64	OE2-E1047	OE2-E74	OE2-E73		OE2-E91	OE2-E154		OE1-E76
	N-F294	N-F146			N-F162	N-F1151		N-F168		N-F185			N-F170
			OH-Y59 N-D154	N-W176								N-D235	-
	O-H ₂ O(265)	O-H ₂ O(74)	O-H ₂ O(403)	O-H ₂ O(13)	O-H ₂ O(3400)	O-H ₂ O(31)		O-H ₂ O(402)			O-H ₂ O(13)		O-H ₂ O(265)
B _w		O-L55	O-Y59		O-L68	O-M1051		O-L77				O-L206	
		N-L66			N-L79	N-L1062		N-L89				N-L228	N-Y91
	O-T207		O-P69		O-I71	O-F1054	O-M81	O-I87		O-L95		OD1-N210	O-L83
	OG1-T207				-			O-I87				-	ND2-N210
	O-T213												
	O-H ₂ O(33)		O-H ₂ O(442)		O-H ₂ O(3021)	O-H ₂ O(41)				O-H ₂ O(406)			O-H ₂ O(315)
O-H ₂ O(36)													
C _w	O-Y273	O-H125	O-Y129	O-H154	O-H137	O-H1130	O-H151	O-H147	O-H165				O-H149
	O-D293	O-D145		O-D175	O-D161	O-D1150	O-D171	O-D167	O-D186	O-D184			O-D169
	N-L296	N-L148	N-M157	N-L178	N-L164	N-M1153	N-L174	N-F170	N-S189	N-F187	-	-	N-S172
		N-A149		N-A179	N-A165	N-T1154			N-G190				N-A173
										O-H ₂ O(424)			
D _w	OD1-D275			OD1-D156		OD1-D1132	OD1-D153		OD1-D167				OD1-D151
	O-I276	-	O-I132	O-V157	O-L140	O-L1133	O-L154	-	O-I168	O-L167	O-L219	-	O-V152
				N-S194							ND2-N257		
	O-H ₂ O(96)				O-H ₂ O(458)	O-H ₂ O(63)				O-H ₂ O(576)			O-H ₂ O(54)
					O-H ₂ O(439)								
E _w			N-D131				N-D153					N-D294	N-D151
	N-I276	N-L128	N-I132	N-V157	N-L140	N-L1133	N-L154		N-I168	N-L167		N-I295	N-V152
	OD1-D332	OD1-D185		OD1-D214	OD1-D199	OD1-D1191	OD1-D208	OD1-D211		OD1-D220	-	OD1-D586	OD1-D207
		OG-S188		OG-S217	OG-S202	OG-S1194	OG-S211	OG-S214	OG-S227			OG-S589	OG-S210
			O-H ₂ O(457)		O-H ₂ O(439)	O-H ₂ O(34)		O-H ₂ O(422)	O-H ₂ O(22)	O-H ₂ O(411)			
F _w	NE1-W334	NE1-W187		NE1-W216	NE1-W201	NE1-W1193	NE1-W210	NE1-W213	NE1-W226	NE1-W222		NE1-W588	NE1-W209
	O-E315	O-W167	-	O-Y196	O-E182	O-R1174	O-W190	O-S188	O-V206	O-E203	OD1-N257	O-E569	O-Y187

O-L317

O-R169
NE2-Q211

O-K198

O-V184

OH-Y1210

O-R192

O-L190

O-S208

O-L205

O-H2O235

O-R571
NE2-H618

O-M189

O-H₂O(20)

O-H₂O(278)
