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### A *WRKY* Clone Isolated from the cDNA Microarray Analysis of *Phytophthora* Resistance Related Genes of Pepper

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**Objectives**

To characterize a *WRKY* gene obtained from cDNA Microarray Analysis

**Materials and Methods**

1. Materials: *C. annuum* (PI201234)
2. Methods: cDNA Microarray analysis, Sequencing

**Results and Discussion**

In order to obtain an elite line resistant against the *Phytophthora* disease by biotechnology, first of all, a cDNA microarray analysis was performed using an EST chip that holds around 5000 pepper EST clones. We have found 55 transcription factors that may be involved in gene regulation of the disease defense mechanism against *phytophthora*. One of the them was identified as *WRKY*, called *WRKY A1244*, which is exclusively present in plant and related to disease resistance.

**Alignment of *WRKY A1244* domain**

nCaA1244	( 74)	MPPSDSWA	GQKP I	KGSPYPRGYR	SSSK	--G@PARKQ	VERSRADPNML I	VTYSCEN	HPWPA	SRSNQHNH
CaF1 14	(183)	F-LEDGYR	GQKAVKNSPF	PRNYR	TSAT	--@NVKKR	VERCFSDPSI	VVTTYEGK	HTLSP	---MNTIM
TIZZ	(129)	V-VKDGYP	GQKVT	RDNPSPRAYK	SFAP	--S@PVKKK	VQRSVEDPSVL	VATYEGE	HNPLPSQAVT	VPL
WIZZ	(167)	L I VKDGYR	GQKVT	RDNPSPRAYF	SFAP	--G@PVKKK	VQRSI	EDQSVV	VATYEGE	HNPLVNP
AsWRKY1	(341)	I-LDDGYR	GQKVVGKGNPN	PRSYRK	TTA	--G@PVRKH	VERASQDLRA	VVTTYEGK	HNEDVPA	LRGSAAAA
AsWRKY3	(244)	---ADDF	S	GQKP I	KGSPYPRGYR	STVR	--G@PARKH	VERDP	SDPSML I	VTYEGD
NtWRKY3	(248)	---GDEY	S	GQKP I	KGSPYPRGYR	SSVR	--G@PARKH	VERAMDDP	PAML I	VTYEGE
NtWRKY7	(299)	F-LDDGYR	GQKVVGKGNQ	HPRSYR	TYP	--G@NVRKQ	VERASDPKT	V I TTYEGK	HNED I	PTVRNRNSQR
NtEIG-D48	(277)	---PDDY	S	GQKP I	KGSPHPRGYR	SSVR	--G@PARKH	VERALDDPT	ML I	VTYEGE
AtWRKY	( 72)	P-PSDSWA	GQKP I	KGSPYPRGYR	SSSK	--G@PARKQ	VERSRDDPT	M I L I	TYTSE	HNHPWPL
CsWRKY	(394)	L-LDDGYR	GQKVVGKGNPN	PRSYRK	TTA	--G@NVRKH	VERSSD	SKAVVT	TYEGK	HNEDVPA
StWRKY	( 92)	I-LDDGYR	GQKAVKNNK	PRSYR	THQ	--G@NVKKQ	VQRLSKDEE	VVTTYEGM	HS	PI--DKSTD
GhWRKY	( 74)	P-PSDSWA	GQKP I	KGSPYPRGYR	SSSK	--G@PARKQ	VERSRVNPT	ML V I	TYSCEN	HPWPA
OsWRKY	( 96)	P-PSDSWA	GQKP I	KGSPYPRGYR	SSSK	--G@PARKQ	VERSRADPT	VLLV	TYSFEN	HPWPQ
PcWRKY2	(134)	I-LDDGYR	GQKVVRGKGNPN	PRSYRK	TNA	--G@PVRKH	VERASHDP	PKAV I	TTYEGK	HNEDVPA
PcWRKY1	(351)	I-LDDGYR	GQKVVGKGNPN	PRSYRK	TQV	--G@PVRKH	VERASHDLRA	V I TTYEGK	HNEDVPA	PRGSGSYP
PcWRKY3	(262)	---PDDF	S	GQKP I	KGSPHPRGYR	SSVR	--G@PARKH	VERAVDDPT	ML I	VTYEGE
PcWRKY5	(148)	---PEDGF	T	GQKE I	LGSRF	PRGYR	THQ	I yQ@PAKKQ	VQRLDD	DDPFT

Ca : Capsicum annuum    At: Arabidopsis thaliana    As: Avena sativa    Cs: Cucumis sativus    Gh: Gossypium hirsutum  
 Nt: Nicotiana tabacum    Os: Oryza sativa    St: Solanum tuberosum    Pc: Petroselinum crispum    WIZZ: Nicotiana tabacum    TIZZ: Nicotiana tabacum