

()

RAPD

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(// : // :)

RAPD

DNA

PCR

DNA

PCR

()

UPGMA

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% %

r = /

RAPD

PCR RAPD

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(*Punica granatum* L.)

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RAPD DNA
 ISSR SSR AFLP
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 SSR RAPD
 .()
 RAPD
 .() .()
 .() RAPD .()
 RAPD DNA
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 RAPD
 DNA
 PCR
 .()
 DNA
 .()
 DNA
 RAPD

E D C B A TIB MOLBIOL⁵
 μl PCR
 / mM MgCl₂ X PCR

5. WWW.TIB-MOLBIOL.COM.DNA@TIB.MOLBIOL.DE

-
- RAPD .()
 1. Randomly Amplified Polymorphic DNA
 2. Amplified Fragment Length Polymorphism
 3. Simple Sequence Repeats
 4. Inter Simple Sequence Repeats

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ها / μM / mM dNTPs
 (SmarTaq) Taq
 PCR . DNA ng
 $^{\circ}\text{C}$
 $^{\circ}\text{C}$ DNA
 $^{\circ}\text{C}$ $^{\circ}\text{C}$
 $^{\circ}\text{C}$
 . (i-Cycler) Bio-Rad
 / /) MgCl_2
 /) DNA (/ / /
 (
 MgCl_2 PCR
 DNA /
 .
 PCR
 . TBE /
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 / $\mu\text{g/l}$
 DNA (Gel document, UVP)
 UV

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NTsys (Ver 2.02)
 UPGMA
 1. Tris Boric Acid EDTA
 2. Jaccard's Similarity Coefficient
 3. Unweighted Paired Group Method Using Arithmetic Average

TIBMBB-07 TIBMBB-15
() TIBMBC-08

pH pH= / /

r =

(/)
(/)
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TIB MOLBIOL

TIB)
(MOLBIOL
DNA
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TIBMBB-15 TIBMBA-08
OPAD-02

OPMG-01

RAPD

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(DNA)

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(DNA)

() PCA

RAPD

RAPD

DNA

RAPD

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RAPD

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DNA

RAPD

RAPD

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RAPD

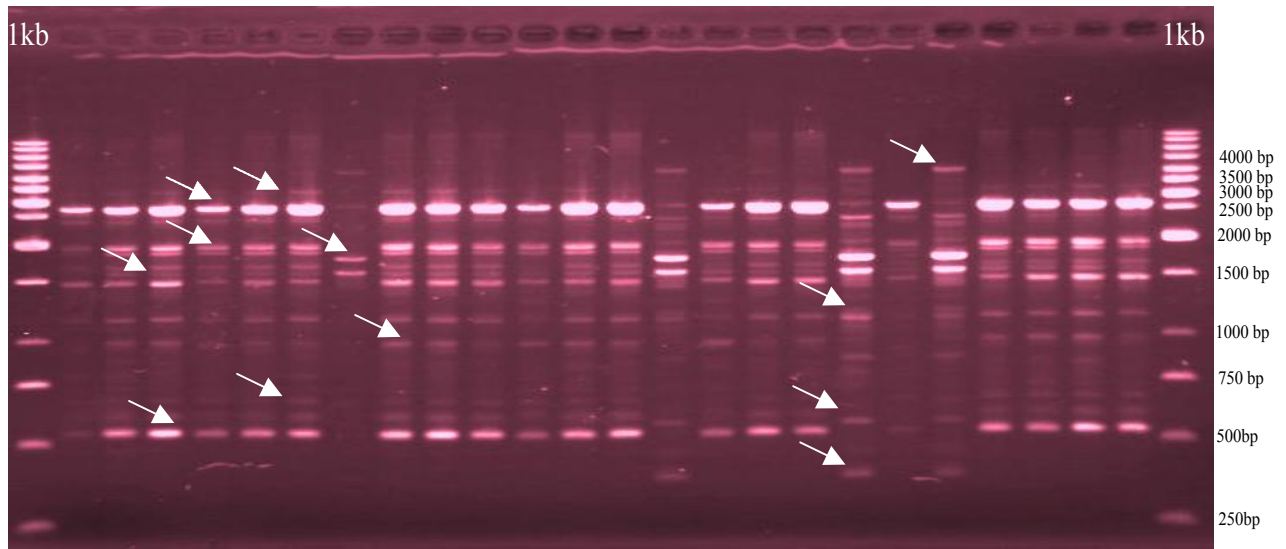
DNA

(

RAPD

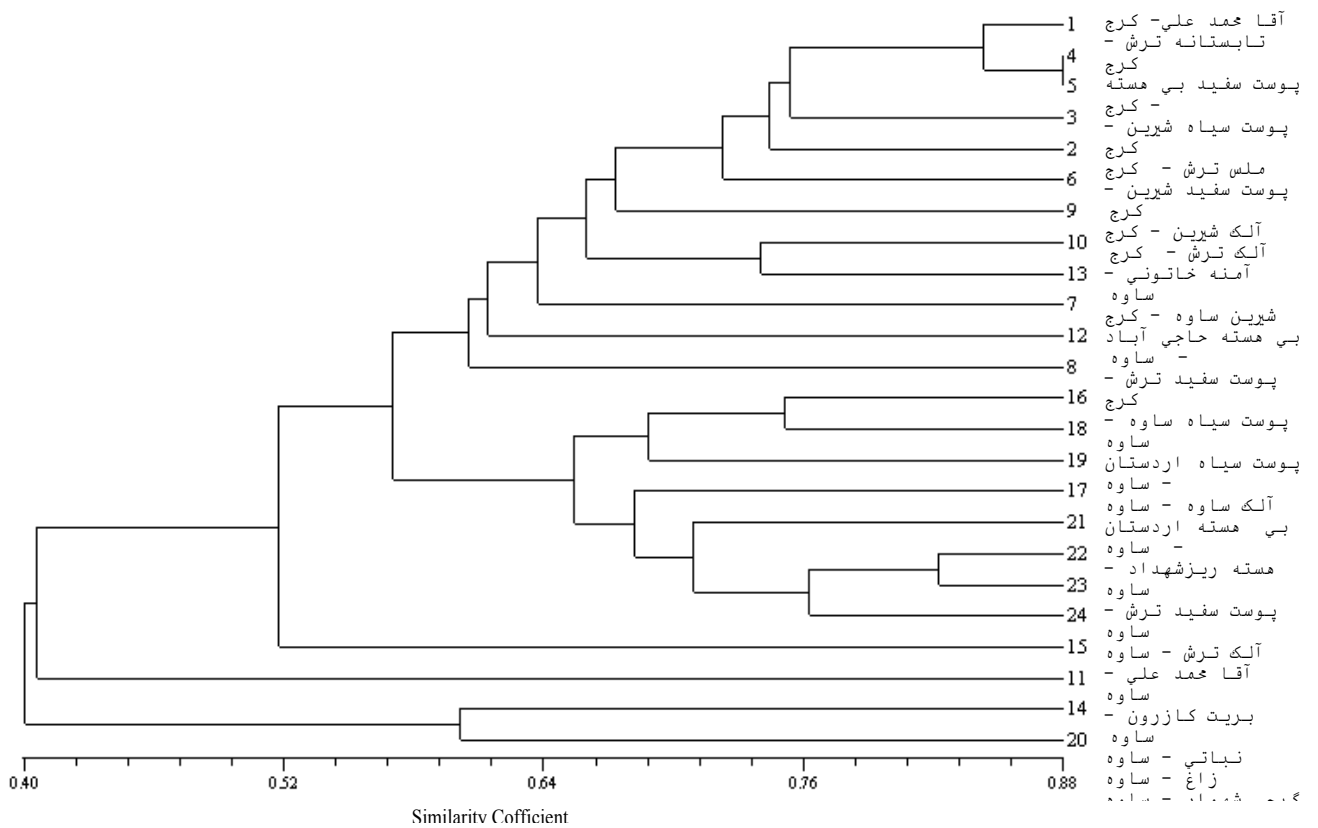
AFLP

(b/a×)	(b)	(a)	→	
/			CCTGGGTCAG	OPAC-11*
			CTGAACGCTG	OPAD-02*
/			TTTGCCCCGT	OPAD-15*
/			GTAGGCCTCA	OPAD-04*
/			AACGGGCGTC	OPAD-16*
/			CTGAAGCGCA	OPAE-10*
/			CTGCTGGGAC	OPB-10*
/			TCGGCACGCA	OPP-02*
/			CCAGCCGAAC	OPP-14*
/			AGCGCCGACG	OPMG-01*
/			GAAGAACCGC	OPMG-16*
/			GTGCGAGAAC	TIBMBA-03
/			GGACGACCGT	TIBMBA-06
/			GGGTCGCATC	TIBMBA-07
/			CCACAGCCGA	TIBMBA-08
/			TCACGTGGCT	TIBMBA-03
			ACCAGGTCAC	TIBMBA-04
/			GAAGGCTGGG	TIBMBA-07
/			AGGCCGGTCA	TIBMBA-09
/			TGCGGGTTCC	TIBMBA-11
/			CTTCGGTGTG	TIBMBA-13
			GTGGGACCTG	TIBMBA-14
/			AAGTGCCCTG	TIBMBA-15
/			GAGGCGATTG	TIBMBA-05
/			GGTCTCCCT	TIBMBA-08
/			GAGCTGGTCC	TIBMBA-07
/			GTTCGCTCCC	TIBMBA-17
/	/	/		



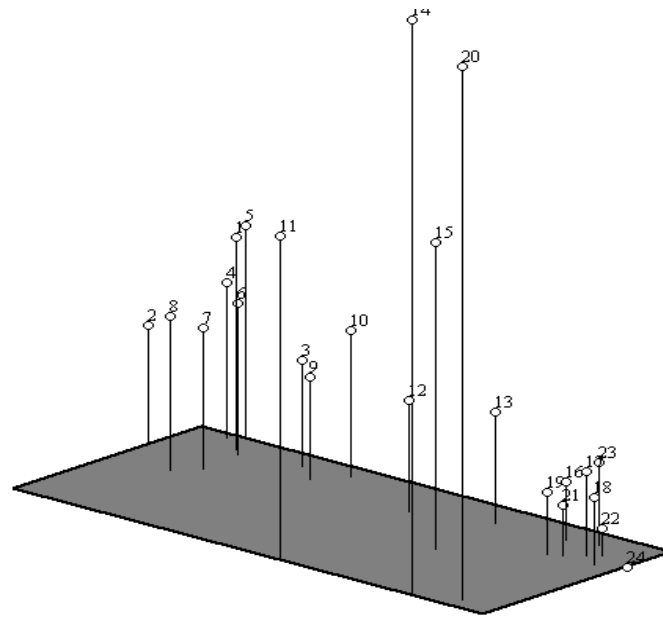
.TIBMBC-08

DNA



RAPD

UPGMA



PCA

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