

A tandemly repeated DNA sequence from *Brassica juncea*A.S.Reddy*⁺, Vibha Srivastava[§] and Sipra Guha-Mukherjee

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We report here the sequences of tandemly repeated DNAs, isolated from hypocotyls(H= in vivo conditions), proliferating callus(PC=not showing any shoot or root formation) and differentiating callus(DC=showing root and shoot formation) of *Brassica juncea* var.pusabold. The nuclear DNAs from H,PC and DC were digested with HindIII and electrophoresed on a 1% agarose gel. A prominent band(approximately 180bp)was eluted from the gel and cloned in the HindIII site of pUC9(1). Several clones were obtained and three from each H,PC and DC were sequenced(2).

The results of hybridisation experiments(data not shown) indicate that the tandem arrays are composed of ca.120 elements and the existence of at least 0.68 million copies of this repeat sequence in the genome. Though there is amplification and demethylation of this sequence in the callus cells(3), the homology of sequence among H,PC and DC is about 99%, which indicates that no sequence rearrangements occur in this repeat in *in vitro* cell cultures. A consensus sequence (174 bp) built from these three sequences indicates 8 direct repeats, 3 inverted repeats and 14 hairpin loops. Although there are two short open reading frames positioned 65 through 97 and 156 through 173 nucleotides, no RNA transcripts corresponding to these satellite DNAs were found (data not shown).The satellite repeat units of the diploids *Brassica oleracea*(4) and *B.campestris* have high homology (98%) with the amphidiploid *B.juncea*, suggesting that the genus *Brassica* has a specific tandem repeat. It exhibits high homology(80-85%) with mustard(5) and radish(6),while the homology with that of *Arabidopsis* is about 30%(7). The sequences of all three repeats and consensus sequence are given below. Asterisks and dashes indicate conserved and missing nucleotides respectively.

pSR20PC	GATTTGGATA	CATAAAGTGT	TGGA-GAATT	CACCGGAAG	TTGAATAAA-	TCTCATAGGA	60
pSR20DC	*****	*****	****_****	*****	*****TA	*****	
pSR20H	*****	*****	***C****	*****	*****A-	*****	
Cons	GATTTGGATA	CATAAAGTGT	TGGA-GAATT	CACCGGAAG	TTGAATAAA-	TCTCATAGGA	58
pSR20PC	GTTGGGATGA	AGAAATTATC	CCACTTCTA	AT-CAGGTGA	TTCCAGTTC	CCAGTTTGGG	120
pSR20DC	*****	*****	*****	**_*****	*****	*****	
pSR20H	*****C	*****	*****	**T*****	*****	*****	
Cons	GTTGGGATGA	AGAAATTATC	CCACTTCTA	AT-CAGGTGA	TTCCAGTTC	CCAGTTTGGG	117
pSR20PC	AATAGGACA	CTTCGTTCT	CGTCCAAATC	AAACCAAGAT	GAATTCACCT	CTGTAA	177
pSR20DC	*****	*****	*****	*****	*****G*	*****	
pSR20H	*****	****_****	*****	*****_****	*****	*****	
Cons	AATAGGACA	CTTCGTTCT	CGTCCAAATC	AAACCAAGAT	GAATTCACCT	CTGTAA	174

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