

Supporting Information belonging to

**Immunoblot Quantification Approach for Overall Assessing the Potential Allergenicity in
Citrus Fruits**

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Supplementary Table 1. The amino acid sequence and the optimized coding sequence of Cit s 1.01, Cit s 2.01 and Cit s 3.01

Name	Sequence
Cit s 1.01 [*]	KAIQFLIGFALLALASSLASASDPSPLQDICVAIEDPKDGVFVNGKFKDKPKLARAEDFFFSGLGKPGNTANRLGVDETDANVE
	QIPGLNLTGISAFRIDYAPYGQRPPHIHPRASEIFLVLEGTLYVGFVTSQDLNNTLIAKVLNKGDVVFVPQGLIHQFNIGKTNAAY AYSALNSQFPGEVTIADTVFGANPSINPDFLGKAFQLDPKIVKDLQNKFINGN
Cit s 2.01 [*]	SWQTYVDDHLMCDIDGHHLTSAAIVGHDGSVWAQSSNFPQFKPEEIAAIMKDFEEPGSLAPTGLHLGGTKYMVIIQGEPAVI
	RGKKGSGGVTVKKTGQALIFGIYDEPLTPGQCNMIVERLGDYLIDQGL
Cit s 3.01 [*]	AALKLVCALLCILVTAPVTNAITCGQVTASLAPCIPFLRTGGRFPPPPCCSGVRSLSNGAARTTPDRQAACNCLKRAYGTIRGIK
	PNVAAGLPSQCGVRIPYKISPSTDCSRVR
Cit s 1.01 ^{†‡}	AAAGCGATCCAGTTCCTGATCGGTTTCGCGCTGCTGGCGCTGGCGTCTTCTCTGGCGTCTGCGTCTGACCCGTCTCCGCTG CAGGACATCTGCGTTGCGATCGAAGACCCGAAAGACGGTGTTTTCTGTTAACGGTAAATTCTGCAAAGACCCGAAACTGG CGCGTGCGGAAGACTTCTTCTCTCTGCTGCTGGGTAAACCGGGTAACACCGCGAACCCTGCTGGGTGTTGACGAAACCGA CGCGAACGTTGAACAGATCCCGGGTCTGAACACCTGGGTATCTCTGCGTTCGGTATCGACTACGCGCCGTACGGTCAGC GTCCGCCGCACATCCACCCGCGTGCGTCTGAAATCTTCTGTTCTGGAAGGTACCCTGTACGTTGGTTTCGTTACCTCTG ACCAGCTGAACAACACCTGATCGCGAAAGTTCTGAACAAAGGTGACGTTTTCTGTTTCCCGCAGGGTCTGATCCACTTC CAGTTCAACATCGGTAAAACCAACGCGGCGGCGTACTCTGCGCTGAACTCTCAGTTCCTGGGTGAAGTTACCATCGCGG ACACCGTTTTCTGGTGCGAACCCGTCTATCAACCCGGAAGTTCTGCGGTAAAGCGTTCCAGCTGGACCCGAAAATCGTTAAA GACCTGCAGAACAAATTCATCAACGGTAATAA
	TCTTGGCAGACCTACGTTGACGACCACCTGATGTGCGACATCGACGGTCACCACCTGACCTCTGCGGCGATCGTTGGTCA CGACGGTTCTGTTTGGGCGCAGTCTTCTAACTTCCCGCAGTTCAAACCGGAAGAAATCGCGGCGATCATGAAAGACTTC GAAGAACCGGGTTCTCTGGCGCCGACCGGTCTGCACCTGGGTGGTACCAAATACATGGTTATCCAGGGTGAACCGGGTG CGGTTATCCGTGGTAAAAAAGGTTCTGGTGGTGTTACCGTTAAAAAAACCGGTGAGGCGCTGATCTTCGGTATCTACGAC GAACCGCTGACCCCGGGTCAGTGCAACATGATCGTTGAACGTCTGGGTGACTACCTGATCGACCAGGGTCTGTAA
Cit s 2.01 ^{†‡}	GCGGCGCTGAAACTGGTTTGC GCGCTGCTGCTGTGCATCTGGTTACCGCGCCGGTTACCAACGCGATCACCTGCGGTCA GGTTACCGCGTCTCTGGCGCCGTGCATCCCGTTCCTGCGTACCGGTGGTCGTTTCCCGCCGCCCGCTGCTGCTCTGGTGT
	TCGTTCTCTGAACGGTGCGGCGCGTACCACCCCGGACCGTCAGGCGGCGTGCAACTGCCTGAAACGTGCGTACGGTACC ATCCGTGGTATCAAACCGAACGTTGCGGCGGGTCTGCCGTCTCAGTGCGGTGTTCTGATCCCGTACAAAATCTCTCCGTC TACCGACTGCTCTCGTGTTCTGTTAA
Cits3.01 ^{†‡}	TCGTTCTCTGAACGGTGCGGCGCGTACCACCCCGGACCGTCAGGCGGCGTGCAACTGCCTGAAACGTGCGTACGGTACC ATCCGTGGTATCAAACCGAACGTTGCGGCGGGTCTGCCGTCTCAGTGCGGTGTTCTGATCCCGTACAAAATCTCTCCGTC TACCGACTGCTCTCGTGTTCTGTTAA
	TCGTTCTCTGAACGGTGCGGCGCGTACCACCCCGGACCGTCAGGCGGCGTGCAACTGCCTGAAACGTGCGTACGGTACC ATCCGTGGTATCAAACCGAACGTTGCGGCGGGTCTGCCGTCTCAGTGCGGTGTTCTGATCCCGTACAAAATCTCTCCGTC TACCGACTGCTCTCGTGTTCTGTTAA

* The amino acid sequence

The optimized coding sequence

Supplementary Table 2. Correlation matrix of the allergen amounts between the peel and pulp

	Cit s 1.01 (pulp)	Cit s 1.01 (peel)	Cit s 2.01 (pulp)	Cit s 2.01 (peel)	Cit s 3.01 (pulp)	Cit s 3.01 (peel)
Cit s 1.01 (pulp)	1	0.00294	0.12789	0.24753	0.45413	0.27056
Cit s 1.01 (peel)	0.00294	1	0.25345	-0.31916	0.42708	0.35109
Cit s 2.01 (pulp)	0.12789	0.25345	1	0.01037	0.14896	0.5962
Cit s 2.01 (peel)	0.24753	-0.31916	0.01037	1	0.51626	-0.22234
Cit s 3.01 (pulp)	0.45413	0.42708	0.14896	0.51626	1	0.29091
Cit s 3.01 (peel)	0.27056	0.35109	0.5962	-0.22234	0.29091	1

Supplementary Table 3. Eigenvalues of the correlation matrix for principal component analysis

	Eigenvalue	Percentage of Variance	Cumulative
1	2.20744	36.79%	36.79%
2	1.66133	27.69%	64.48%
3	0.95108	15.85%	80.33%
4	0.73786	12.30%	92.63%
5	0.35286	5.88%	98.51%
6	0.08942	1.49%	100.00%

Supplementary Table 4. Extracted eigenvectors for principal component analysis

	Coefficients of PC1	Coefficients of PC2	Coefficients of PC3
Cit s 1.01 (pulp)	0.36767	0.35428	0.1903
Cit s 1.01 (peel)	0.39327	-0.32922	-0.66624
Cit s 2.01 (pulp)	0.43768	-0.22986	0.51388
Cit s 2.01 (peel)	0.09187	0.68933	0.10548
Cit s 3.01 (pulp)	0.49477	0.38537	-0.39545
Cit s 3.01 (peel)	0.51514	-0.29929	0.2972

Supplementary Figure 1. The identification of three recombinant citrus allergens by MALDI-TOF. These recombinant citrus allergens are Cit s 1.01 (a), Cit s 2.01 (b), Cit s 3.01 (c), respectively. Inset, effective peptides by MALDI-TOF are shown. Sequences in bold are the same as those in Cit s 1.01, Cit s 2.01, Cit s 3.01, based on MALDI-TOF result.

