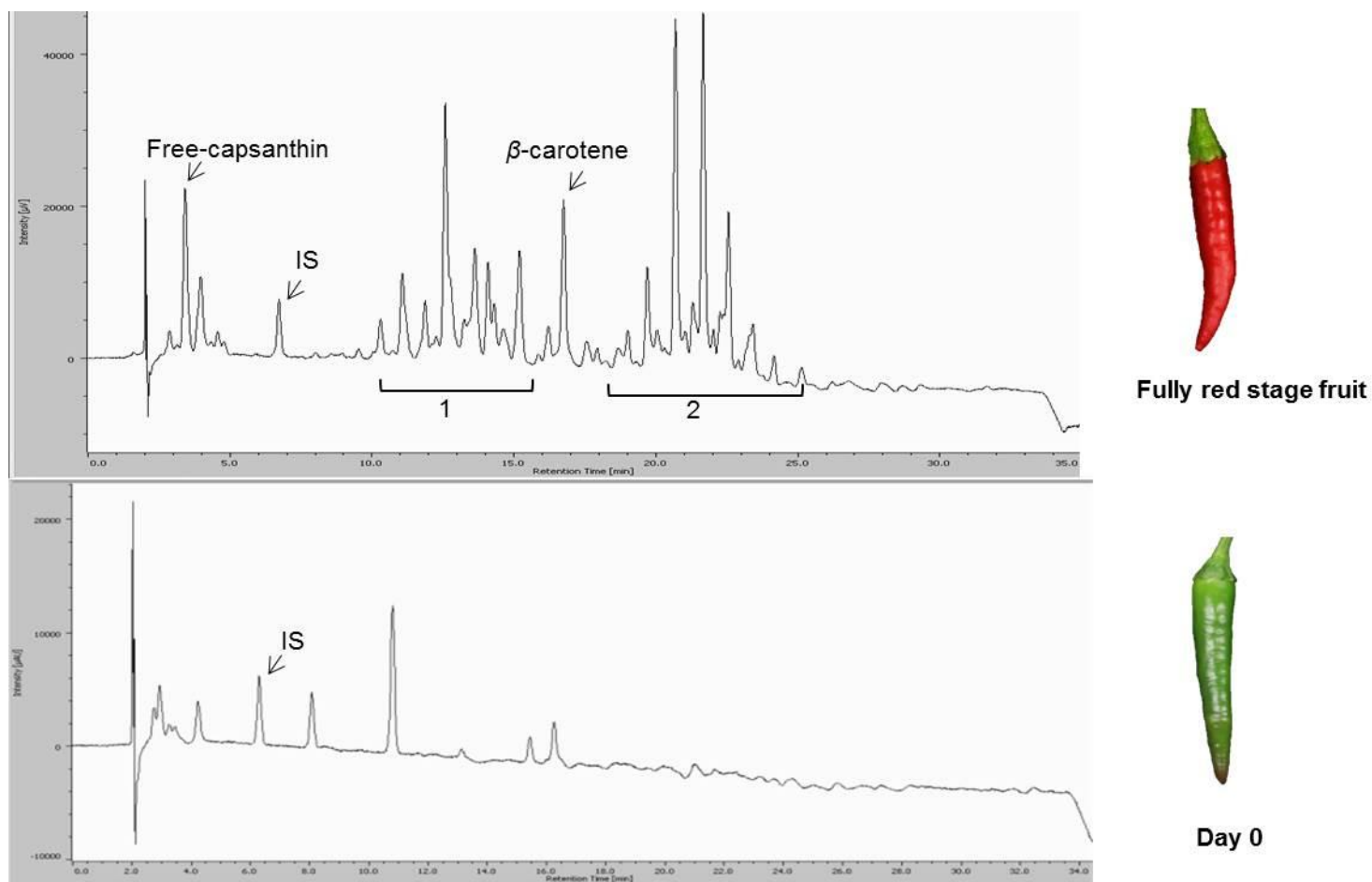


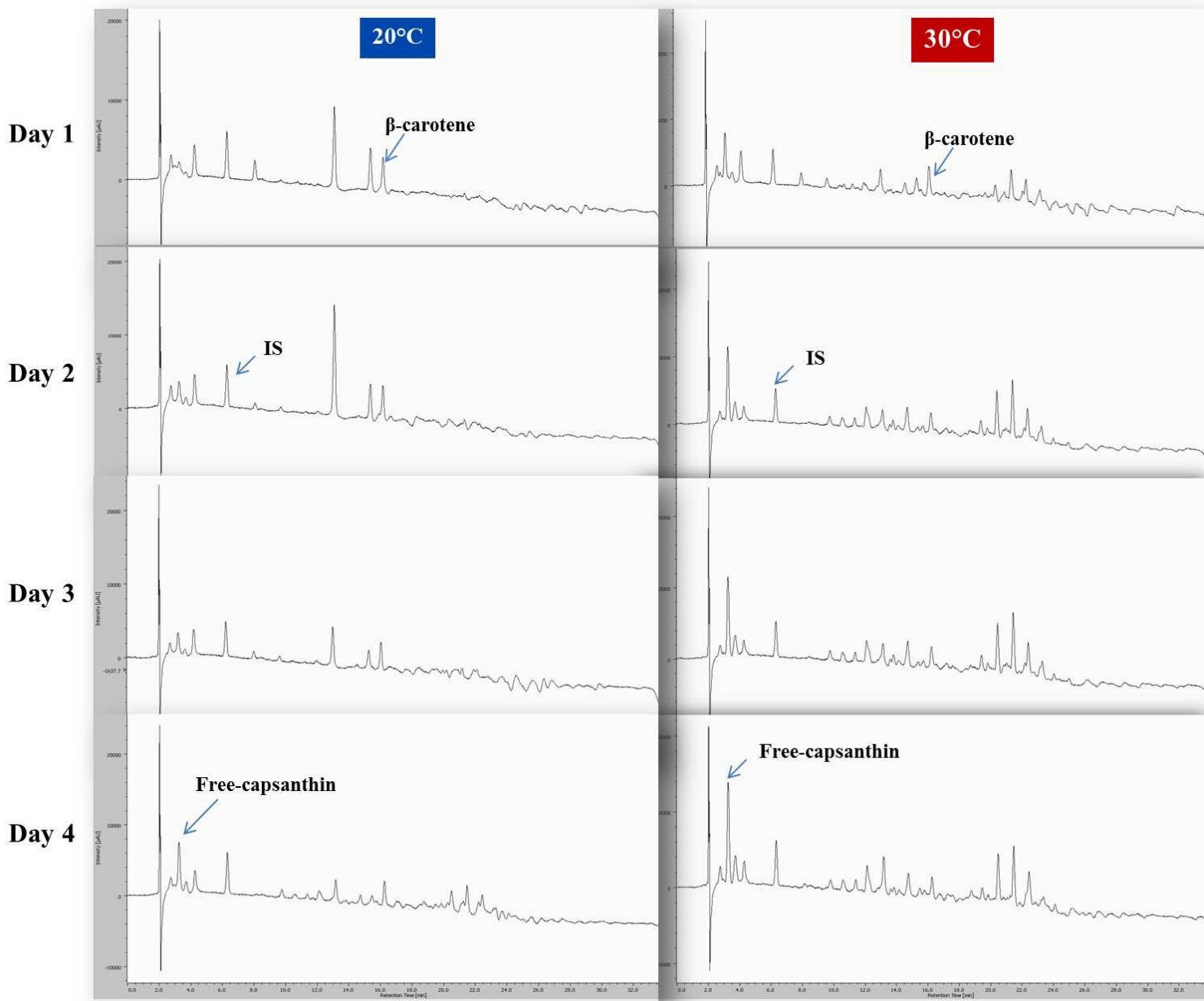
## Supplementary Materials

**Table S1.** The sets of primer sequences of *Psy*, *Lcyb*, *CrtZ*, and *Ccs* used for the qRT-PCR of the carotenoid biosynthesis-related genes.

GenBank/Genes	Forward primer(5'→3')	Reverse primer(5'→3')
X68017.1/ Phytoene synthase; <i>Psy</i>	TCTCAAACGGGACAGGATTC	CCACCTTTGTTTTCCACCTC
X86221.1/ Lycopene-β-cyclase; <i>Lcyb</i>	AGTTATCCGCAGCTGTTTGG	CCATGCCAATAACGAGGTTC
Y09225.1/ β-carotene hydroxylase; <i>CrtZ</i>	GCATATGCACGAGTCACACC	GGGATAAGGCCTTTATGGTT
X76165.1/Capsanthin/capsorubin synthase; <i>Ccs</i>	TCGAAAGCCTTGGCTCAACA	GAAAGGAACCCGTGCCAGTA
AY486137.1/ Ubiquitin conjugating; <i>Ubi3</i>	TGTCCATCTGCTCTCTGTTG	CACCCCAAGCACAATAAGAC



**Figure S1.** Chromatogram of carotenoid profiles in “Takanotsume” chili after harvested at fully red stage fruit and mature green stage. Number 1 and 2 in the chromatogram of fully red fruit were expected to be the mono- and di-esterified carotenoid forms.



**Figure S2.** Chromatogram of carotenoid profiles in "Takanotsume" chili after incubation at 20 °C and 30 °C for 4 days.