

# Food Additive Titanium Dioxide and Its Fate in Commercial Foods

Ji-Soo Hwang <sup>1</sup>, Jin Yu <sup>1</sup>, Hyoung-Mi Kim <sup>2</sup>, Jae-Min Oh <sup>3</sup> and Soo-Jin Choi <sup>1,\*</sup>

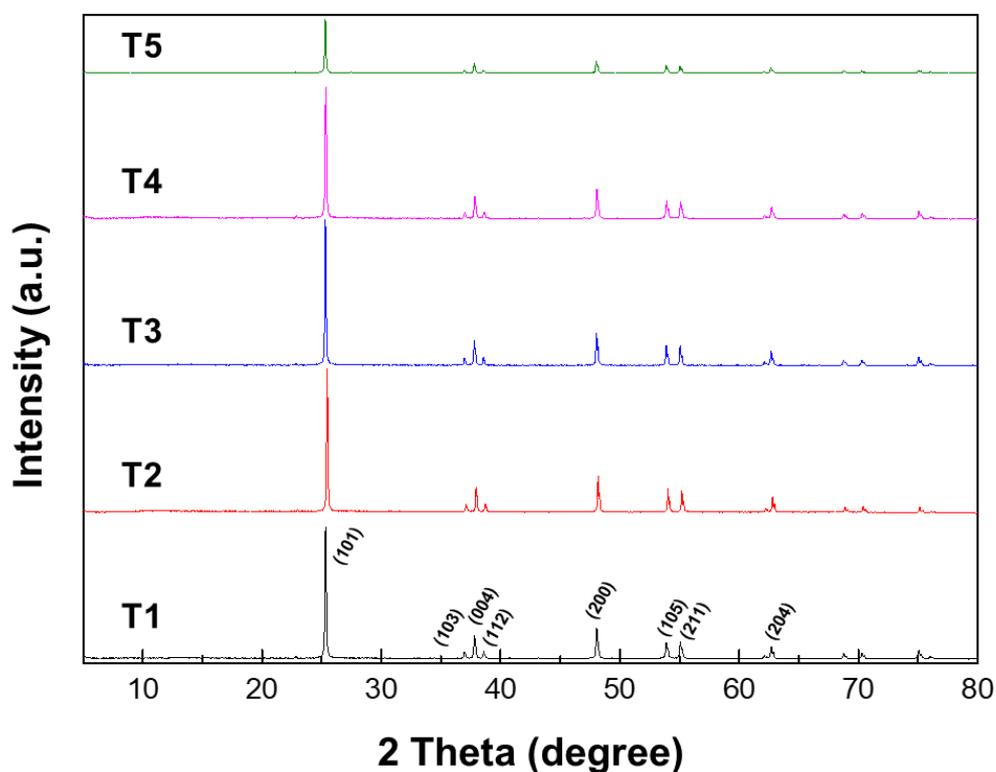
<sup>1</sup> Division of Applied Food System, Major of Food Science & Technology, Seoul Women's University, Seoul 01797, Korea

<sup>2</sup> Department of Chemistry and Medical Chemistry, College of Science and Technology, Yonsei University, Wonju 26493, Gangwondo, Korea

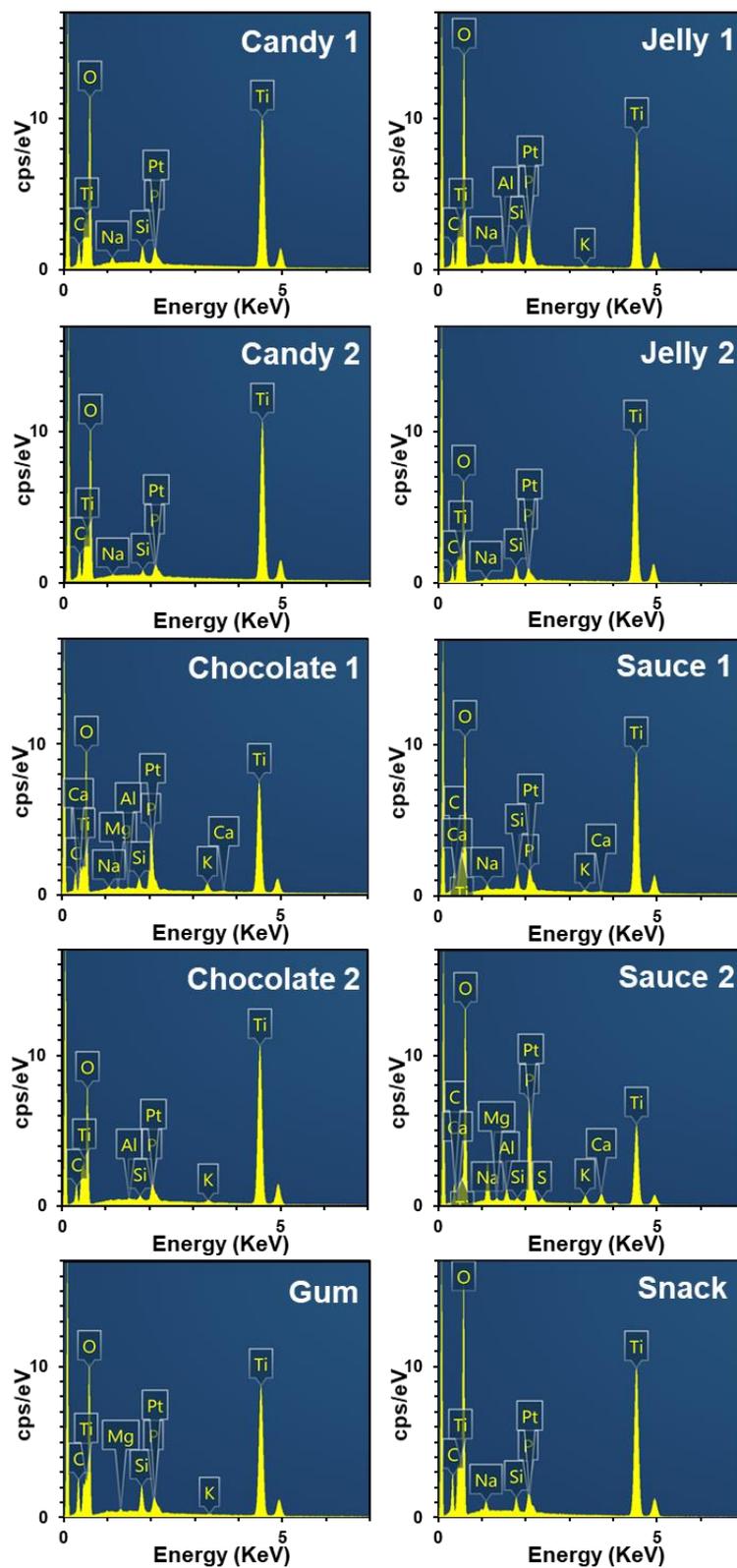
<sup>3</sup> Department of Energy and Materials Engineering, Dongguk University-Seoul, Seoul 04620, Korea

\* Correspondence: sjchoi@swu.ac.kr; Tel.: +82-2-970-5634; Fax: +82-2-970-5977

Received: 30 July 2019; Accepted: 13 August 2019; Published: date



**Figure S1.** X-ray diffraction (XRD) patterns of commercially available food additive TiO<sub>2</sub> (T1–T5) particles.



**Figure S2.** Energy dispersive X-ray spectroscopy (EDS) spectra of particles recovered from commercial foods.

**Table S1.** Normal distribution fitting result for T4 before and after size fractionation using sucrose gradient solution.

<b>Sample</b>		<b>Average size (nm)*</b>	<b>Kurtosis</b>
Pristine		122.49 ± 23.31 <sup>ab</sup>	1.07
After size fractionation	Top layer	96.94 ± 17.86 <sup>a</sup>	1.11
	Middle layer	140.42 ± 26.38 <sup>ab</sup>	-1.41
	Bottom layer	179.51 ± 36.40 <sup>b</sup>	-2.41

\*Average particle sizes were obtained from scanning electron microscopy (SEM) images. Different lower-case letters (a, b) indicate significant differences among pristine TiO<sub>2</sub> (T4) and fractionated TiO<sub>2</sub> particles ( $P < 0.05$ ).