

# Development and Validation of an Analysis Method for Pesticide Residues by Gas Chromatography–Tandem Mass Spectrometry in Daikenchuto

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## Abstract

Daikenchuto (DKT) is one in every of the foremost wide used “Kampo” in Japan as a representative of seasoner medication. as a result of DKT is formed from a natural product like food, it needs the management of pesticides; so, associate degree analysis of residual pesticides in Kampo is needed. the globe Health Organization (WHO) indicates that chemical residue analysis by the U.S. formulary (USP) is needed.

## Keywords

Oganophosphorus • Metabolites • Medicative • Microbicides • Chromatography

## Description

USP defines 107 compounds containing organochlorine pesticides and organophosphorus pesticides and their metabolites, that have a high residual risk. consequently, to ensure the protection of seasoner medicines in step with world standards could be a important issue. during this study, we have a tendency to developed associate degree analytical technique for ninety one compounds, that square measure listed in USP, victimisation DKT because the subject. the strategy may extract pesticides from DKT with solvent, rinse pesticides with acetonitrile employing a SepPak C18 column (5 g) and with ester employing a DSC-NH<sub>2</sub> column (2 g), and perform synchronous analyses by gas chromatography–tandem mass spectroscopic analysis (GC–MS/MS). This technique, that may quantify eighty eight compounds, was valid in step with USP. A chemical residue analysis technique that meets USP needs permits the analysis of chemical residues with a high residue risk and contributes to rising the protection of “Kampo” and alternative seasoner medicines. Since past, medicative plants are used globally for treatments, and a few are systematised and classified as ancient medicines. Japanese ancient seasoner medication (Kampo) originated from ancient Chinese medication before it absolutely was introduced in Japan round the fifth century. Thereafter, Kampo has

become one in every of the seasoner medicines that have accomplished freelance development within the country. Daikenchuto (DKT) could be a Kampo that's ready from 3 seasoner materials, i.e., ginseng, ginger, and Japanese pepper. it's for the most part utilised in Japan. Daikenchuto has been used within the improvement of assorted symptoms of the lower abdominal region, like bloating, abdominal pain, and constipation. In recent years, several clinical study results of DKT concerning canal symptoms in humans are reportable, associate degree elucidation of its mechanism in channel upset is ongoing. it's expected that DKT are wide explored within the medical field within the future. Conversely, there's robust demand to secure the protection of medicative plants themselves and also the medication that square measure ready from them as a result of their utility and intensive application.

Pesticides, like microbicides and pesticides, square measure wide used within the cultivations of medicative plants and alternative farm product. they're essential in making certain the stable amount and quality of plants. However, contamination thanks to chemical residues is mostly a drag. Generally, chemical residue standards within the food sector of every country square measure set, supported the suitable daily intake. Moreover, concerning medicative plants, the recommendations of United Nations agency follow the japanese formulary (JP), North American nation formulary (USP), and European collection (EP). North American nation formulary and EP target seventy things, as well as persistently stable organophosphorus and organochlorine pesticides.

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