
[Skip to Main Content](#) if(true) { document.getElementById("skipNavigationLink").onclick =function skipElement () { var element = document.getElementById('article__content'); if(element == null || element == undefined) { element = document.getElementsByClassName('article__content').item(0); } element.setAttribute('tabindex','0'); element.focus(); } }



[Access byCAS - National Science Library](#)

[Access byCAS - National Science Library](#)

- [This Journal](#)
- [Anywhere](#)

-
-

[Login / Register](#)

The full text of this article hosted at iucr.org is unavailable due to technical difficulties.

googletag.cmd.push (function () { googletag.display ('advert-leaderboard'); }); _

[Bulletin of the Korean Chemical Society](#)

[Volume 37, Issue 8](#)

Development of Exact Matrix Matching Inductively Coupled Plasma-Optical Emission Spectroscopy for the Analysis of Cu and K in Infant Formula

[Ye-Ji Lee](#)

Bio-Analytical Science, University of Science and Technology(UST), Daejeon, Republic of Korea

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

Authors contributed equally to this work. [Search for more papers by this author](#)

[Sung Woo Heo](#)

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

Authors contributed equally to this work. [Search for more papers by this author](#)

[Myung-Sub Han](#)

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

[Search for more papers by this author](#)

[Youngran Lim](#)

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

[Search for more papers by this author](#)

[Yong-Hyeon Yim](#)

E-mail address: yhyim@kriss.re.kr

Bio&Analytical Science, University of Science and Technology(UST), Daejeon, Republic of Korea

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

[Search for more papers by this author](#)

YeÃfÂ¢Ã,Â€Ã,Â•Ji Lee

Bio𠄺nalytical Science, University of Science and Technology(UST), Daejeon, Republic
of Korea

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

Authors contributed equally to this work.[Search for more papers by this author](#)

Sung Woo Heo

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

Authors contributed equally to this work. [Search for more papers by this author](#)

Myung-Ah Sub Han

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

[Search for more papers by this author](#)

[Youngran Lim](#)

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

[Search for more papers by this author](#)

[Yongfeng Hyeon Yim](#)

Corresponding Author

E-mail address:yhyim@kriss.re.kr

Biof&A•Analytical Science, University of Science and Technology(UST), Daejeon, Republic of Korea

Center for Inorganic Analytical Chemistry, Metrology for Quality of Life, Korea Research Institute of Standards and Science(KRISS), Daejeon, Republic of Korea

[Search for more papers by this author](#)

First published: 01 August 2016

<https://doi.org/10.1002/bkcs.10843>

[Read the full text](#)

[About](#)

[PDF](#)

[PDF](#)

[Tools](#)

- [Request permission](#)
- [Export citation](#)
- [Add to favorites](#)
- [Track citation](#)

[Share](#)

Give access

[Share full text access](#)

Share full text access

Share a link

- [Email to a friend](#)
- [Facebook](#)
- [Twitter](#)

-
- [Linkedin](#)
 - [Google+](#)
 - [Reddit](#)
 - [CiteULike](#)

Abstract

In the present study, we have developed an exact matrix-matching inductively coupled plasma-optical emission spectroscopy (ICP-OES) as a low-cost alternative to the isotope dilution inductively coupled plasma-mass spectrometry (ICP-MS) method for accurate and precise measurements of nutrient elements K and Cu in infant formula. In spite of its high precision and accuracy, ICP-OES analysis of complex samples was not reliable due to biases originating from various matrix effects. The elaborated exact matrix-matching approach tested here demonstrated its potential to minimize biases due to matrix mismatch. The exact matrix-matching ICP-OES method was successfully validated by comparing the results with those from an isotope dilution ICP-MS method. Because the model provides reliable results without significant loss of precision, it will be an excellent choice for major element analysis in a complex sample, especially when isotope dilution is not applicable due to the lack of alternative isotopes or the high cost of enriched isotopes.

[Supporting Information](#)

[Volume37, Issue8](#)

August 2016

Pages 1228-1233

```
googletag.cmd.push ( function () { googletag.display ( 'advert-rail-1' ); }); _
```

- [Related](#)
- [Information](#)

-

-

```
googletag.cmd.push ( function () { googletag.display ( 'advert-rail-2' ); }); _
```

-

```
var articleRef = document.querySelector('.article__body:not(.show-references) .article__references');  
if (articleRef) { articleRef.style.display = "none"; }
```

[Caption](#)

Additional links

About Wiley Online Library

- [Privacy Policy](#)
- [Terms of Use](#)
- [Cookies](#)
- [Accessibility](#)

Help & Support

- [Contact Us](#)

Opportunities

- [Subscription Agents](#)
- [Advertisers & Corporate Partners](#)

Connect with Wiley

- [The Wiley Network](#)
-

-
- [Wiley Press Room](#)

Copyright © 1999-2018 [John Wiley & Sons, Inc.](#) All rights reserved

Log in to Wiley Online Library

[NEW USER >](#) [INSTITUTIONAL LOGIN >](#)

Change Password

Congrats!

Your password has been changed

Create a new account

[Returning user](#)

Forgot your password?

Enter your email address below. If your address has been previously registered, you will receive an email with instructions on how to reset your password. If you don't receive an email, you should register as a new user

Please check your email for your password reset instructions.

Request Username

Can't sign in? Forgot your username?

Enter your email address below and we will send you your username

If the address matches an existing account you will receive an email with instructions to retrieve your username

```
if(window._satellite) { _satellite.pageBottom(); }
```

```
var _prum=[[id','59e8fecb3847311aab7b23c6'],[mark','firstbyte',(new Date()).getTime()]];(function(){var s=document.getElementsByTagName('script')[0],p=document.createElement('script');p.async='async';p.src='//rum-static.pingdom.net/prum.min.js';s.parentNode.insertBefore(p,s);})();
```