



# AOAC INTERNATIONAL

## Stakeholder Panel for Infant Formula and Adult Nutritionals (SPIFAN)

Meeting at the Gaithersburg Marriott Washingtonian Center  
9751 Washingtonian Boulevard  
Gaithersburg MD 20878, USA

Wednesday, March 16, 2016 - 10:30am (Eastern US)

### REPORT OF THE EXPERT REVIEW PANEL (ERP) PROCEEDINGS

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#### Expert Review Panel Members (in attendance):

##### ***Darryl Sullivan***

John Austad  
Sean Austin  
Scott Christiansen  
Hans Cruijssen  
Brendon Gill  
Don Gilliland/Karen Schimpf  
Estela Kneeteman  
Adrienne McMahon  
Bill Mindak  
Maria Ofitserova  
Melissa Phillips/Kate Rimmer  
Shay Phillips  
Günther Raffler  
David Woollard  
Jinchuan Yang

##### ***Covance Labs (Chair)***

Covance Labs  
Nestlé Research Centre  
Perrigo Nutritionals  
FrieslandCampina  
Fonterra Cooperative  
Abbott Nutrition  
INTI  
Wyeth/Nestlé  
FDA CFSAN  
Pickering Labs, Inc.  
NIST  
Mead Johnson Nutrition  
Eurofins/CLF  
Eurofins (formerly of Hill Labs)  
Waters Corp.

#### Expert Review Panel Members (unable to attend):

Sneh Bhandari  
Esther Campos-Giménez  
Jon DeVries  
Sarwar Gilani  
Min Huang  
Harvey Indyk  
Wil van Loon

Mérieux NutriSciences & OMB  
Nestlé  
Consultant  
Consultant  
Frontage Labs, Inc.  
Fonterra Cooperative  
FrieslandCampina

## AOAC Staff Includes:

Delia Boyd  
E. James Bradford  
Scott Coates  
Arlene Fox  
Deborah McKenzie  
Alicia Meiklejohn  
Tien Milor

## Working Group Chairs:

|                       |   |
|-----------------------|---|
| Amino Acids:          | Ping Feng (Wyeth) & Wes Jacobs (Abbott)               |
| Biotin                | George Joseph (AsureQuality) & Jean-Luc Deborde (SCL) |
| B Vitamins:           | Louis Salvati (Abbott)                                |
| Carotenoids:          | Greg Hostetler (Perrigo)                              |
| Chloride/Fluoride:    | Christopher Blake (Nestlé)                            |
| Choline:              | Sneh Bhandari (Silliker) & Nick Cellar (Abbott)       |
| Folate:               | Erik Koinings (Nestlé)                                |
| Fructans (FOS) & GOS: | Sean Austin (Nestlé)                                  |
| Vitamin D:            | Don Gilliland (Abbott)                                |

## Observers:

|   |  |
|---|--|
| Joe Boison, <i>CFIA</i>                           | Shauna Roman, <i>Reckitt Benckiser</i>               |
| Bob Clifford, <i>Shimadzu</i>                     | Joe Romano, <i>Waters Corp.</i>                      |
| Marcel deVreeze, <i>NEN-ISO</i>                   | Louis Salvati, <i>Abbott Nutrition</i>               |
| Stefan Ehling, <i>Abbott Nutrition</i>            | Angela Song, <i>Abbott Nutrition</i>                 |
| Ping Feng, <i>Wyeth Nutrition</i>                 | Monique Steegmans, <i>Tienen Miher/Beneo Orafiti</i> |
| Andrew Fussell, <i>PANalytical</i>                | Karla Steele, <i>Mead Johnson Nutritionals</i>       |
| Philip Haselberger, <i>Abbott Nutrition</i>       | Cheryl Stephenson, <i>Eurofins</i>                   |
| Greg Hostetler, <i>Perrigo Nutritionals</i>       | Joan Stevens, <i>Agilent Technologies</i>            |
| Wes Jacobs, <i>Abbott Nutrition</i>               | John Szpylka, <i>Mérieux NutriSciences</i>           |
| Greg Jaudzems, <i>Nestlé USA, Inc.</i>            | Steve Tennyson, <i>Perrigo Nutritionals</i>          |
| Martha Jennens, <i>Covance</i>                    | Joe Thompson, <i>Abbott Nutrition</i>                |
| George Joseph, <i>AsureQuality</i>                | Marina Torres, <i>LATU</i>                           |
| Erik Konings, <i>Nestlé</i>                       | Socrates Trujillo, <i>FDA</i>                        |
| Marcus Lacorn, <i>R-Biopharm</i>                  | Martijn Vermeulen, <i>Ausnutria Hyproca</i>          |
| SooKwang Lee, <i>FDA</i>                          | Wayne Wargo, <i>Abbott Nutrition</i>                 |
| Qi Lin, <i>Abbott Nutrition</i>                   | Wayne Wolf, <i>USDA (Retired)</i>                    |
| Vicky Manti, <i>Danone</i>                        | Laura Wood, <i>NIST</i>                              |
| Elaine Marley, <i>R-Biopharm Rhone</i>            | Dorothy Yang, <i>Agilent Technologies</i>            |
| Frederic Martin, <i>Nestlé</i>                    | Zhou Yao, <i>SH-CIQ</i>                              |
| Mary McBride, <i>Agilent Technologies</i>         | William Xue, <i>Accucaps</i>                         |
| Josh Messerly, <i>Eurofins</i>                    | Joyce Zhu, <i>Jamieson</i>                           |
| Paul Milne, <i>Keurig Green Mountain</i>          |  |
| Deepali Mohindra, <i>Thermo Fisher Scientific</i> |  |
| Shang-Jing Pan, <i>Abbott Nutrition</i>           |  |
| Robert Rankin, <i>INCA</i>                        |  |
| Rick Reba, <i>Nestlé</i>                          |  |
| Jeff Rohrer, <i>Thermo Fisher Scientific</i>      |  |

**I. WELCOME AND INTRODUCTIONS**

Darryl Sullivan welcomed all participants to the ERP meeting and introduced the ERP members.

**II. REVIEW OF METHODS BY EXPERT REVIEW PANEL (ERP) FOR FIRST ACTION OFFICIAL METHOD<sup>SM</sup> STATUS – AOAC SPIFAN I**

For each method, the ERP/Working Group Chairs including (Co-Chairs) discussed methods submitted.

| Method         | Method Title   | Reviewer(s)   | Vote   | Comments  |
|----------------|--|---------------|--|---|
| <b>Choline</b> | <i>Chol-08 - Determination of Free and Total Choline and Carnitine in Infant Formula and Adult/Pediatric Nutritional Formula by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS), AOAC 2015.10.</i> | Sneh Bhandari | Scott Christiansen (moved)<br>Shay Phillips (second)<br>Yes-14/No-0/Abstain-1<br><hr/> Method adopted as First Action Official Method <sup>SM</sup> status; OMA# 2015.10 | <ul style="list-style-type: none"> <li>▪ Method is clearly written with a comprehensive report</li> <li>▪ May want to do a comparison with the SPIFAN I &amp; II samples</li> </ul> |

**III. REVIEW OF METHODS BY EXPERT REVIEW PANEL (ERP) FOR FIRST ACTION OFFICIAL METHOD<sup>SM</sup> STATUS – AOAC SPIFAN II**

For each method, the ERP/Working Group Co-Chairs discussed methods submitted. Nine (9) methods were received and reviewed and one (1) method received First Action Official Method<sup>SM</sup> status.

| Method            | Method Title  | Reviewer(s)                          | Vote   | Comments  |
|-------------------|---|--------------------------------------|--|---|
| <b>Amino Acid</b> | <i>Amino-03 - Amino Acids in Infant Formula and Adult/Pediatric Formulas - Ultra High Performance Liquid Chromatography</i> | Maria Ofitserova<br>Shay Phillips    | No Action recommended:<br><br>Method not adopted as First Action Official Method <sup>SM</sup> status  | <ul style="list-style-type: none"> <li>▪ Method is three (3) methods in one (1); uses three (3) separate digestions</li> <li>▪ It is hard to determine how many samples were completed and in how many days</li> <li>▪ The intermediate precision was completed over two (2) days and six (6) replicates daily; the information should be presented clearer.</li> <li>▪ Method is promising, but lacks SLV data</li> <li>▪ One weakness is optimizing the method</li> <li>▪ Internal standards should be brought in earlier; internal standard is added after hydrolysis               <ul style="list-style-type: none"> <li>○ No tryptophan in the internal standards; should investigate and correct</li> </ul> </li> <li>▪ Full SPIFAN SLV study should be completed</li> <li>▪ Follow instructions in the use of the AOAC SPIFAN samples</li> <li>▪ Suitability step should be built in the method to check the column for separation suitability</li> </ul> |
| <b>Biotin</b>     | <i>Bio-02 - Determination of Biotin By Liquid Chromatography Coupled with Immunoaffinity Column Clean-Up Extraction</i>     | Scott Christiansen<br>Karen Schimpf  | Scott Christiansen (moved)<br>Karen Schimpf (second)<br>Yes-13/No-1/Abstain-0<br><hr/> Second vote:<br>Yes-13/ No-0/Abstain-1<br><br>Method adopted as First Action Official Method <sup>SM</sup>  | <ul style="list-style-type: none"> <li>▪ Method did not use example calculations</li> <li>▪ Method did not include the calibration and standard curve or sequence for balance               <ul style="list-style-type: none"> <li>○ Add system suitability and calculations</li> </ul> </li> <li>▪ Calibration description and sample preparation</li> <li>▪ For spiked recovery for accuracy, four (4) placebos sample used in three (3) days in triplicate</li> <li>▪ Point of clarification for spiking the recovery materials.</li> </ul>  |
|                   | <i>Bio-03 - Determination of Biotin in Infant, Pediatric and Adult Nutritionals by HPLC and Fluorescence Detection</i>      | Adrienne McMahon<br>Estela Kneeteman | Adrienne McMahon (moved)<br>Estela Kneeteman (second)<br>Yes-10/ No-2/Abstain-2<br><hr/> Second vote:<br>Yes-11/No-1/Abstain-1<br><br>Method adopted as First Action Official Method <sup>SM</sup> | <ul style="list-style-type: none"> <li>▪ The method is well written</li> <li>▪ Safety and chromatograms are straight forward</li> <li>▪ Concerns include that the SMPR® states “total” biotin, vs. “free” as the in the method</li> <li>▪ Method should have added a hydrolysis or enzyme</li> <li>▪ The analytical range doesn’t meet the SMPR®</li> <li>▪ To fix the linear range, adjust the sample size</li> <li>▪ Check the Codex #</li> <li>▪ Check the low end</li> <li>▪ Bound vs. unbound</li> <li>▪ Error on pg. 10               <ul style="list-style-type: none"> <li>○ should be 1mcg/ 100 gram</li> </ul> </li> </ul>  |

|                    |  |  |  |   |
|--------------------|--|--|--|---|
| <b>B Vitamins</b>  | <i>BVit-02 - Simultaneous Determination of Total Vitamin B3 in Infant Formula Products by LC-MS/MS Using Enzymatic Digestion (COMPARISON)</i>  | Scott Christiansen<br>Estela Kneeteman<br>David Woollard | Estela Kneeteman (moved)<br>David Woollard (second)<br>Yes-3/No-10/Abstain-2<br><br>Motion failed.   | <ul style="list-style-type: none"> <li>▪ Method is for “total” B vitamin</li> <li>▪ Samples completed in a single day</li> <li>▪ Low recovery</li> <li>▪ No spike and recovery data presented</li> <li>▪ Meets SMPR® requirement</li> <li>▪ No LOQ data provided</li> <li>▪ Needs clarity of concentration of the enzymes</li> </ul>  |
|                    | <i>BVit-03 - Determination of B-Vitamins in Infant Formula and Adult/Pediatric Formulas ESI LC-MSMS</i>  | Brendon Gill<br>David Woollard                           | No Action recommended:<br><br>Method not adopted as First Action <i>Official Method</i> <sup>SM</sup> status   | <ul style="list-style-type: none"> <li>▪ Method does not include the measurement of phosphorylated forms as specified in the SMPR® applicability</li> <li>▪ Method does not meet the SMPR®</li> </ul>   |
| <b>Carotenoids</b> | <i>Carot-01 - Determination of Carotenoids in Infant Formula and Adult/Pediatric Nutritional Formula using High-Performance Liquid Chromatography with Photo Diode Array Detection.</i>  | Jon DeVries<br>Adrienne McMahon                          | No Action recommended:<br><br>Method not adopted as First Action <i>Official Method</i> <sup>SM</sup> status   | <ul style="list-style-type: none"> <li>▪ See ERP Review Form</li> </ul>   |
|                    | <i>Carot-02 - Determination of Lutein and β-Carotene in Infant Formula and Adult Nutritionals</i>  | Maria Ofitserova<br>Jon DeVries<br>Adrienne McMahon      | No Action recommended:<br>Yes-14/No-0/Abstain-1<br><br>Method not adopted as First Action <i>Official Method</i> <sup>SM</sup> status  | <ul style="list-style-type: none"> <li>▪ Method has issues with lycopene and alpha carotene</li> <li>▪ Method is clearly written and has sound methodology, but doesn’t meet the scope               <ul style="list-style-type: none"> <li>○ Expand scope to include α-carotene and lycopene</li> </ul> </li> <li>▪ No data provided on alpha carotene</li> <li>▪ No safety concerns</li> <li>▪ Method has the potential to meet the SMPR®</li> <li>▪ Method only analyzed three (3) matrices</li> <li>▪ Reassemble the working group to review the comments for the SMPR®</li> <li>▪ This nutrient may require four (4) SMPRs® or some variation</li> <li>▪ Set order of priority</li> <li>▪ SLV may be requirement for beta carotene and lutein</li> </ul> |
| <b>Chloride</b>    | <i>Combined AOAC 1st action methods 2015.07 and 2015.08 (Chlor-02/04) - Chloride in Milk, Milk Powder, Whey Powder, Infant Formula and Adult Nutritionals Potentiometric titration method - For AOAC / ISO / IDF MLT study</i> | Günther Raffler<br>Shay Phillip<br>Bill Mindak           | Günther Raffler (moved)<br>Bill Mindak (second)<br>Vote: Unanimous<br><br>Method to receive a new OMA #<br><hr/><br>Method recommended for reproducibility testing                                     | <ul style="list-style-type: none"> <li>▪ Both methods have already received First Action status and was combined into one method</li> <li>▪ The combined method is easy to perform and doesn’t require highly sophisticated instruments</li> <li>▪ Recommend that the combined method move forward for reproducibility testing</li> <li>▪ Method is lacking safety information</li> </ul>   |
|                    | <i>Chlor-03 -Single Laboratory Validation for Chloride Analysis in Infant Formula and Adult Nutritionals: AOAC SMPR® 2014.015</i>  | Bill Mindak<br>Günther Raffler<br>Shay Phillip           | No Action recommended:<br><br>Estela Kneeteman (moved)<br>David Woollard (second)<br>Vote: Yes-11/No-1/Abstain-0<br><br>Method not adopted as First Action <i>Official Method</i> <sup>SM</sup> status | <ul style="list-style-type: none"> <li>▪ The only reagent used in the method is from Waters Corp. (trademarked/branded)</li> <li>▪ The SRM was analyzed at a higher level</li> <li>▪ The method needs clarity in the point               <ul style="list-style-type: none"> <li>○ Accuracy/recovery</li> <li>○ Precision</li> </ul> </li> <li>▪ The NIST reference values are not certified</li> <li>▪ The method needs to be harmonized to compare results</li> <li>▪ IC vs. titrations</li> </ul>   |
| <b>Fluoride</b>    | <i>Fluor-02 - Single Laboratory Validation for Fluoride Analysis in Infant Formula and Adult Nutritionals: AOAC SMPR® 2014.016</i>   | Bill Mindak<br>Günther Raffler<br>Shay Phillip           | No Action recommended:<br><br>Method not adopted as First Action <i>Official Method</i> <sup>SM</sup> status   | <ul style="list-style-type: none"> <li>▪ The repeatability does not meet the accuracy</li> <li>▪ The fluoride peak is small, but there is still a concern</li> <li>▪ May need to reassemble the working group to review the SMPR®               <ul style="list-style-type: none"> <li>○ Is precision &amp; accuracy required to comply with regulation?</li> </ul> </li> </ul>   |

|                       |   |   |   |  |
|-----------------------|---|---|---|--|
| <b>Folate</b>         | <i>Fol-20 - Analysis of Folic acid and 5-Methyltetrahydrofolate in Infant and Adult Nutritional formula using Ultra-Performance Liquid Chromatography-Tandem Mass Spectrometry</i>                              | Adrienne McMahon<br>Melissa Phillips              | No Action recommended:  | <ul style="list-style-type: none"> <li>▪ See ERP Review form</li> </ul>  |
|                       | <i>OMA# 2013.13 (Fol-21) - <b>NOTES ONLY</b> - Contribution of minor folates to the total folate content of infant formula and adult/pediatric nutritionals</i>   | Shay Phillips                                     | <i>OMA# 2013.13</i> - Method has First Action <i>Official Method<sup>SM</sup></i> designation   | <ul style="list-style-type: none"> <li>▪ <b>ERP DISCUSSION ON FOLATES</b> <ul style="list-style-type: none"> <li>○ Additional information is required on the minor folates</li> <li>○ Need to add deconjugate</li> </ul> </li> </ul>   |
|                       | <i>OMA# 2011.06 (Fol-22) - Validation of A LC-MS/MS Method for Folate Analysis in Infant Formula and Adult Nutritional Samples (Folate-22, OMA 2011.06) using SPIFAN II Sample Kit</i>                          | Adrienne McMahon                                  | <i>OMA# 2011.06</i> - Method has First Action <i>Official Method<sup>SM</sup></i> designation   |  |
| <b>Fructans (FOS)</b> | <i>Fos-01 - Determination of Fructans in Infant and Adult/Pediatric Nutritional Formulas as well as ingredient commodities</i>  | Estela Kneeteman<br>Sean Austin<br>Hans Cruijisen | Hans Cruijisen (moved)<br>Estela Kneeteman (second)<br>Yes-1/No-7/Abstain-0<br><br>Method not adopted as First Action <i>Official Method<sup>SM</sup></i> status  | <ul style="list-style-type: none"> <li>▪ The method used SPIFAN I kit with only four (4) samples containing fructans (FOS)           <ul style="list-style-type: none"> <li>○ Method only measured fructose</li> </ul> </li> <li>▪ Method is missing LOQ data</li> <li>▪ Method is also used widely</li> <li>▪ Sucrose contents exceeds three (3) times the total fructans content</li> <li>▪ Two (2) samples did not meeting the SMPR®</li> <li>▪ Needs calculation of glucose from fructose</li> </ul> |
|                       | <i>Fos-04 - Determination of Fructans in Infant and Adult/Pediatric Nutritional Formula as well as ingredient commodities High-Performance Anion-Exchange Chromatography with Pulsed Amperometric Detection</i> | Jon DeVries<br>Sean Austin<br>Hans Cruijisen      | Hans Cruijisen (moved)<br>Sean Austin (second)<br>Yes-14/No-0/Abstain-1<br><br>Method adopted as First Action <i>Official Method<sup>SM</sup></i>   | <ul style="list-style-type: none"> <li>▪ The method is straight forward and equipment is readily available</li> <li>▪ Must specify the purity in the method; need to have purity check on the standard</li> </ul>  |
| <b>Vitamin D</b>      | <i>VitD-17 - Determination of Vitamin D in Milk Products by UPLC-MS-MS with 4-Phenyl-1,2,4-triazoline-3,5-dione (PTAD) Derivatization</i>   | Brendon Gill<br>Don Gilliland<br>Jinchuan Yang    | No Action recommended:<br><br>Method not adopted as First Action <i>Official Method<sup>SM</sup></i> status   | <ul style="list-style-type: none"> <li>▪ There is a bias against the NIST reference</li> <li>▪ The method meets the SMPR® on spiked recovery</li> <li>▪ Validation did not include the SPIFAN kit</li> <li>▪ Pre D is measured directly</li> <li>▪ Requires purity check for the standard</li> </ul>   |
|                       | <i>VitD-18 - Analysis of Vitamin D2 and Vitamin D3 by LC-MS/MS in Milk Powders, Infant Formulas, and Adult Nutritionals</i>   | Don Gilliland<br>Sneh Bhandari<br>Jinchuan Yang   | Don Gilliland (moved)<br>David Woollard (second)<br>Yes-13/No-1/Abstain-1<br><br>Second vote:<br>Yes-13/No-1/Abstain-1<br><br>Method adopted as First Action <i>Official Method<sup>SM</sup></i> status | <ul style="list-style-type: none"> <li>▪ The method is well written &amp; thorough</li> <li>▪ The method meets the SMPR®</li> <li>▪ The method uses very complete data sets</li> <li>▪ The ERP recommends that the study director work with CDC-SH (VitD-17) to combine the methods</li> </ul>   |

**IV. REVIEW OF METHODS BY EXPERT REVIEW PANEL (ERP) FOR FINAL ACTION OFFICIAL METHOD<sup>SM</sup> STATUS**

The Expert Review Panel (ERP) reviewed Two (2) methods for Final Action *Official Methods<sup>SM</sup>* status. Zero (0) methods were recommended to the Official Methods Board (OMB) for Final Action *Official Method<sup>SM</sup>* consideration.

| Method           | Method Title  | Reviewer(s)                                    | Vote  | Comments   |
|------------------|---|--|---|--|
| <b>Vitamin C</b> | <b>OMA# 2012.22 - Vitamin C (VitC-03)</b><br><b>AOAC First Action Official Method 2012.22 - Vitamin C (ascorbic acid) in Infant Formula and Adult/Pediatric Nutritional Formula by UHPLC-UV</b> | Sneh Bhandari<br>Brendon Gill/<br>Harvey Indyk | Brendon Gill (Moved)<br>John Austad (Second)<br>Yes-13/No-0/Abstain-1<br><br>Method recommended for Final Action <i>Official Method<sup>SM</sup></i> status | <ul style="list-style-type: none"> <li>○ Assemble the working group to review the SMPR® for Codex levels           <ul style="list-style-type: none"> <li>▲ Post information for comments</li> </ul> </li> </ul> |

**IV. REVIEW OF METHODS BY EXPERT REVIEW PANEL (ERP) FOR REPRODUCIBILITY TESTING**

The ERP will collectively discuss the methods and select a single method to move forward through the AOAC SPIFAN process for reproducibility testing.

**Method Evaluation Forms - Methods processed via the numbering system:**

| Method         | Method Title  | Number Voting                                   | Comments                                   |
|----------------|---|---|--|
| Biotin         | <i>Bio-02 - Determination of Biotin By Liquid Chromatography Coupled with Immunoaffinity Column Clean-Up Extraction</i>   | ~Move to reproducibility testing<br><b>657</b>  |  |
|                | <i>Bio-03 - Determination of Biotin in Infant, Pediatric and Adult Nutritionals by HPLC and Fluorescence Detection</i>  | <b>639</b>                                      |  |
| Choline        | <i>Chol-08 - Determination of Free and Total Choline and Carnitine in Infant Formula and Adult/Pediatric Nutritional Formula by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</i>                   | ~Move to reproducibility testing                |  |
| Folate         | <i>OMA# 2013.13 (Fol-21) - Contribution of minor folates to the total folate content of infant formula and adult/pediatric nutritionals</i>   | <b>1011</b>                                     |  |
|                | <i>OMA# 2011.06 (Fol-22) - Validation of A LC-MS/MS Method for Folate Analysis in Infant Formula and Adult Nutritional Samples (Folate-22, OMA 2011.06) using SPIFAN II Sample Kit</i>                          | ~Move to reproducibility testing<br><b>1019</b> |  |
| Vitamin D      | <i>VitD-18 - Analysis of Vitamin D2 and Vitamin D3 by LC-MS/MS in Milk Powders, Infant Formulas, and Adult Nutritionals</i>   | ~Move to reproducibility testing                |  |
| Fructans (FOS) | <i>Fos-04 - Determination of Fructans in Infant and Adult/Pediatric Nutritional Formula as well as ingredient commodities High-Performance Anion-Exchange Chromatography with Pulsed Amperometric Detection</i> |   | Method not proceeding until September 2016 |

**V. NEXT STEPS/FEEDBACK FROM EXPERT REVIEW PANEL**

Darryl Sullivan provided next steps including suggestions from the Expert Review Panel requesting that some of the SMPRs® be revisited by the respective working group(s).

1. Investigate reconvening the following working groups:
  - a. Amino Acids
  - b. Carotenoids
  - c. Fluoride
  - d. GOS
  - e. Vitamin B<sub>3</sub> (Niacin)

❖ To view the ERP Reviewer forms please [click here](#) or <http://cld.bz/dHMmBmw>