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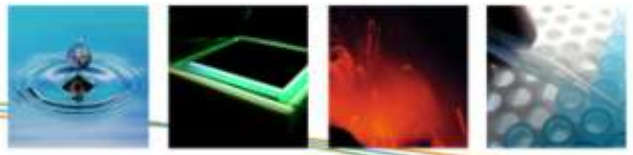

24/01/2011

INFLAME Kick-off meeting - Birmingham

VITO ESR 9

Stefan Voorspoels & Guy Vanermen

ESR 9 - Non-invasive bio-monitoring and exposure assessment of flame retardant chemicals

» Objective

The development and validation of non-invasive methods for the monitoring of human body burdens; exploration of the utility of non-invasive matrices like hair, saliva, nails and urine as biomarkers of internal exposure to flame retardants (FR)




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ESR 9 - Non-invasive bio-monitoring and exposure assessment of flame retardant chemicals

Global work program

- Literature study:
  - non-invasive methods for POPs
  - analytical techniques for the determination of brominated and non-brominated flame retardants and their metabolites
- Definition of target FR (common and novel) and metabolites; prediction of possible metabolites
- Comparison of detection techniques and selection of most appropriate technique(s) based on LOD, selectivity, reproducibility, ease of operation and cost:

GC-(EI)MS GC-(EI)HRMS GC-(CI)MS GCXGC-MS
GC-MS/MS LC-(ESI)MS/MS LC-(APCI)MS/MS
LC-(APPI)MS/MS LC-ICP-MS

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ESR 9 - Non-invasive bio-monitoring and exposure assessment of flame retardant chemicals

- Development of suitable analytical procedures for the determination of the target compounds in non-invasive matrices:
  - Extraction procedures (PLE, Soxhlet, USE, …)
  - Clean up procedures (SPE, column chromatography, GPC, liquid/liquid partition …)
  - Derivatisation procedures (optional for metabolites)
- Implementation/development of suitable analytical procedures for the determination of the target compounds in serum – cfr NIPH
- Determination of the overall method performance (on the basis of real samples, reference materials, matrix addition experiments):
- Assessment of the utility of non-invasive biomonitoring: comparison of non-invasive and invasive analytical data (based on limited scale monitoring of laboratory volunteers)

ESR 9 - Non-invasive bio-monitoring and exposure assessment of flame retardant chemicals

- Monitoring of FR in non-invasive human samples collected from mothers and children in Norway
- Results
  - Validated analytical procedures for the assessment of the degree of exposure to FR by means of non-invasive monitoring
  - Case study: exposure results for a limited population in Norway and comparison between non-invasive and invasive biomonitoring

Recruitment @ VITO

Recruitment @ VITO

- Vijayakumar – 31/08/10
- Tutino – 01/09/10
- Pato – 02/09/10
- Chenna – 06/09/10
- Pas Leiza – 06/09/10
- Negro – 08/09/10
- Izak – 09/09/10
- Jagiello – 09/09/10
- Ernst – 09/09/10
- Singh – 10/09/10
- Pokhrel – 15/09/10
- Karatliev – 26/09/10
- Gonzalez – 30/09/10
- Conesa – 03/10/10
- Ertekin – 04/10/10
- Garcia – 06/10/10
- Chinjenge – 06/10/10
- Moola – 10/10/10
- Usachova – 12/10/10
- Woldemariam – 22/10/10
- Saounde – 24/10/10
- Ye – 27/10/2010
- Khan – 07/11/10
- Cvejin – 09/11/10
- Kucharska – 20/11/10
- Cassidy – 21/11/10
- Bodla – 23/11/10
- Abdelhakem – 23/11/1
- Yu – 30/11/10
- Khan – 07/12/10
- Shanmugam – 13/12/10
- Rodosthenous – 23/12/10
- Pradeep Babu – 25/12/10
- Gopal – 27/12/10
- Cequier – 01/01/11
- Rafiq – 05/01/11
- Caras Altas – 11/01/11

Recruitment @ VITO

- Candidates were asked to send in:
  - their CV
  - a motivation letter
  - 2 reference letters
  - apply on-line on the VITO website
- After eligibility check and 1st screening project outlines were asked

- ESR 9: 5 candidates were interviewed (Skype):

  Agnieszka Kucharska (PL) – Ozlem Ertekin (TR) – Natalija Usachova (LV) – Enrique Cequier (ES) – Aleksandra Cvejin (RS)

- ESR 4: Interviews are planned for the coming weeks