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# Experts call for read-across to move beyond chemical similarity

Issue raised at workshop, organised by CAAT-Europe, EU-ToxRisk and Cefic-LRI

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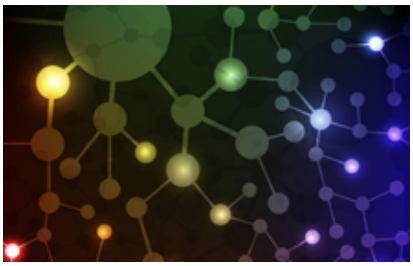

Dr Emma Davies
Reporter

Read-across approaches need to move beyond grouping chemicals based purely on similarities in their structures, according to experts attending a read-across workshop, last week in Brussels.

Organised by the Center for Alternatives to Animal Testing (CAAT-Europe), EU-ToxRisk (https://chemicalwatch.com/44648/eu-toxrisk-project-hits-the-ground-running) and Cefic-LRI, the workshop discussed Echa's Read-across assessment framework (https://chemicalwatch.com/23940/echa-launches-read-across-framework-for-human-health) (RAAF), published in 2015, which currently requires chemicals to be structurally similar for read-across as specified in REACH.

Nicholas Ball from Dow Chemical Company praised the agency's RAAF for laying out a “structured approach”. However, he said that “we have to move away from just using structural similarity.”

He called for “creative” ways to demonstrate similarity “beyond simply what a compound looks like”.

Later this year, the RAAF will be supplemented with information on mixtures and substances of unknown or variable composition (UVCBs), said Norbert Fedtke from Echa. “It will not be an extension of the RAAF,” he cautioned. “We have to find a different way to approach this and we are still struggling.”

At the workshop, Mr Ball, Thomas Hartung from CAAT and Mark Cronin from Liverpool John Moore University talked through the recent report (https://chemicalwatch.com/45087/us-team-

maps-chemical-landscape-using-echa-data) , *Toward good read-across practice (GRAP) guidance*, published in Altex.

Although structural similarity is a "prudent starting point" from a biological point of view, it is "not necessarily a prerequisite to perform a valid read-across", states the GRAP publication.

All three speakers touched on the concept of using biological read-across. In particular, the guidance outlines how chemically dissimilar structures activating a particular AOP could "provide a basis" for read-across. Molecular initiating events could possibly be used to help group chemicals, said professor Cronin.

"One conclusion from the report is that some [read-across] uncertainty is acceptable, depending on the context," said professor Cronin. "It will be very difficult to get the level of uncertainty to be very low in large numbers of read-across scenarios. It's an area where further effort is required."

Many have an "ultimate goal" to quantify read-across, he added. To do this would require significant amounts of new data, particularly on toxicokinetics. Although animal tests are not designed to give sufficient toxicokinetics information to help support read-across, *in vitro* and *in silico* studies are promising data sources, he added.

**Emma Davies**

## Related Articles

- EU-ToxRisk project 'hits the ground running' (/44648/eu-toxrisk-project-hits-the-ground-running)
- Echa launches read-across framework for human health (/23940/echa-launches-read-across-framework-for-human-health)
- US team maps chemical landscape using Echa data (/45087/us-team-maps-chemical-landscape-using-echa-data)

## Further Information:

- Workshop (https://chemicalwatch.com/44456/caat-europe-cefic-lri-workshop-2016-good-read-across-practices-workshop?q=cefic-lri)
- Good read-across practice guidance (GRAP) (http://www.altex.ch/resources/epub_Ball_of_160211.pdf)