

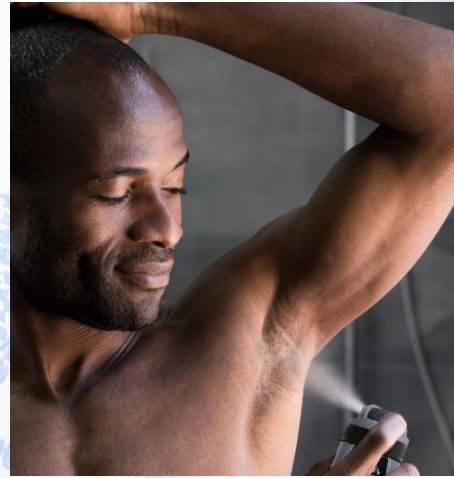
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Making safety decisions with NAMs

Carl Westmoreland

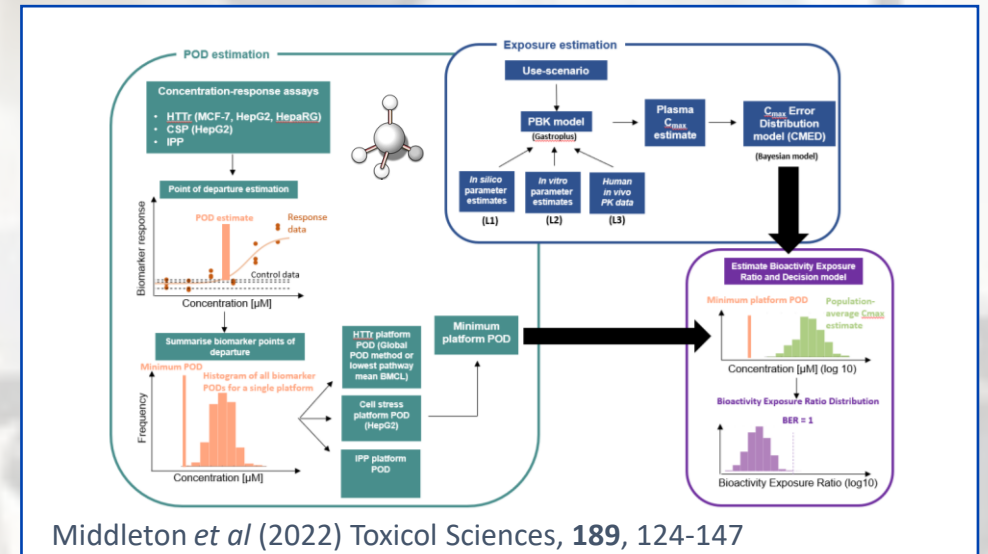
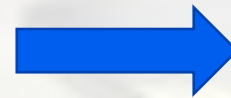
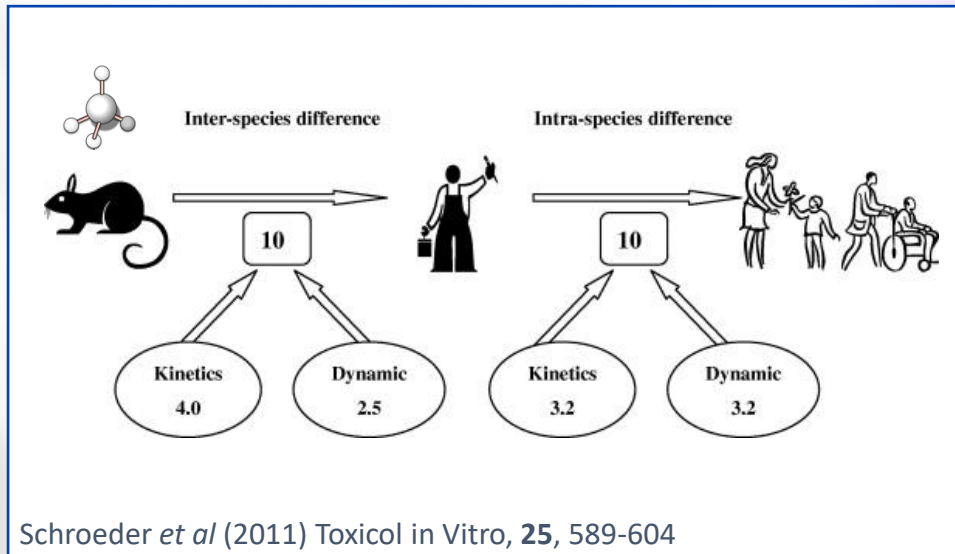
15th November 2022

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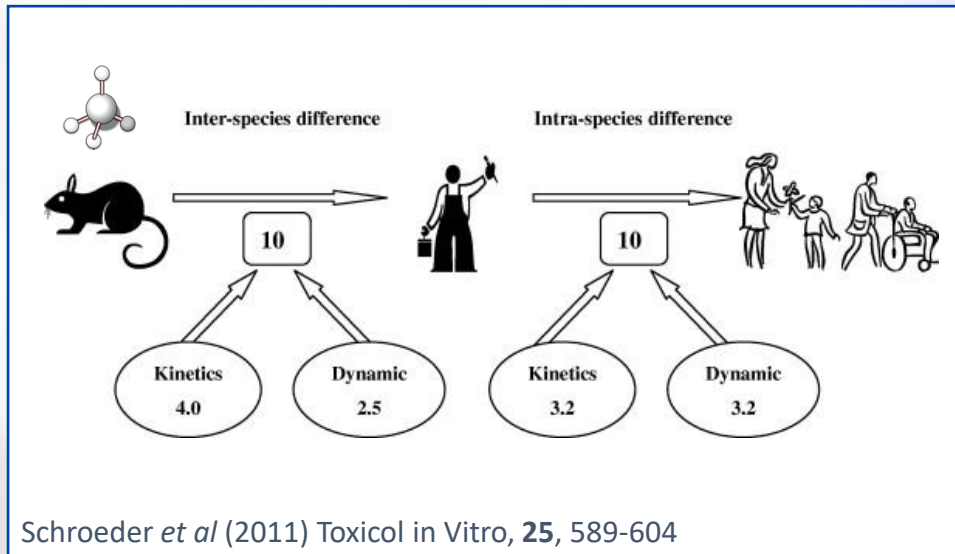


.... and ensuring everyone has trust in the safety decisions

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Tests at high doses in rodents
The gold standard for protecting people?

Do rodents predict what might happen in people?

Margins of Safety (MoS) can allow us to protect people

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Variability and Relevance of Current Laboratory Mammalian Toxicity Tests and Expectations for New Approach Methods (NAMs) for use in Human Health Risk Assessment

SHARE f t i n

National Academies of Sciences, Engineering and Medicine (2022)
doi.org/10.17226/26496

EPA United States Environmental Protection Agency

Grappling With the Issue of Protection vs Prediction

Limited Qualitative Concordance of Rodent and Human Toxicological Responses

...data compiled from 150 compounds with 221 human toxicity events reported. The results showed the true positive human toxicity concordance rate of 71% for rodent and non-rodent species, with non-rodents alone being predictive for 63% of human toxicity and rodents alone for 43%.

Current Risk Assessment Practices Geared Towards Protection Not Prediction

Case Studies Demonstrating Application of Bioactivity as a Protective POD

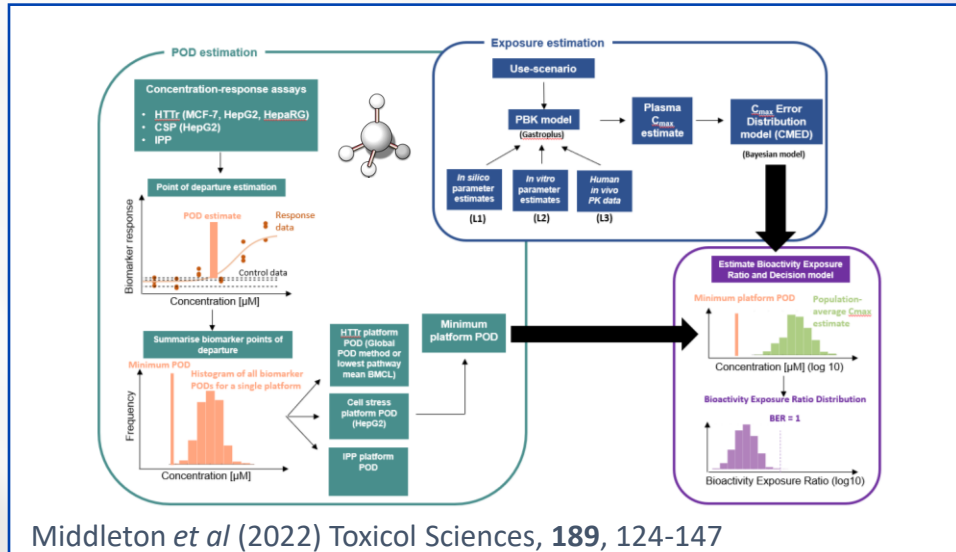
Paul-Friedman *et al.*, 2020

Nyffeler and Harrill, ISMB Poster, 2020

Center for Computational Toxicology & Exposure

Rusty Thomas, US EPA (2021)

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Use of human biology to protect people

A large toolbox of NAMs developed over many years

There isn't a lack of tools, just experience with using them to make decisions

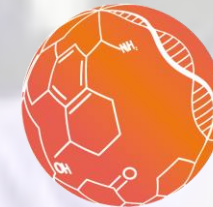
Do NAMs predict what might happen in high dose animal studies?

Bioactivity Exposure Ratios (BER) can allow us to protect people

Science Approach Document
Bioactivity Exposure Ratio:
Application in Priority Setting and Risk Assessment

Health Canada

March 2021



APCRA
ACCELERATING THE PACE OF
CHEMICAL RISK ASSESSMENT

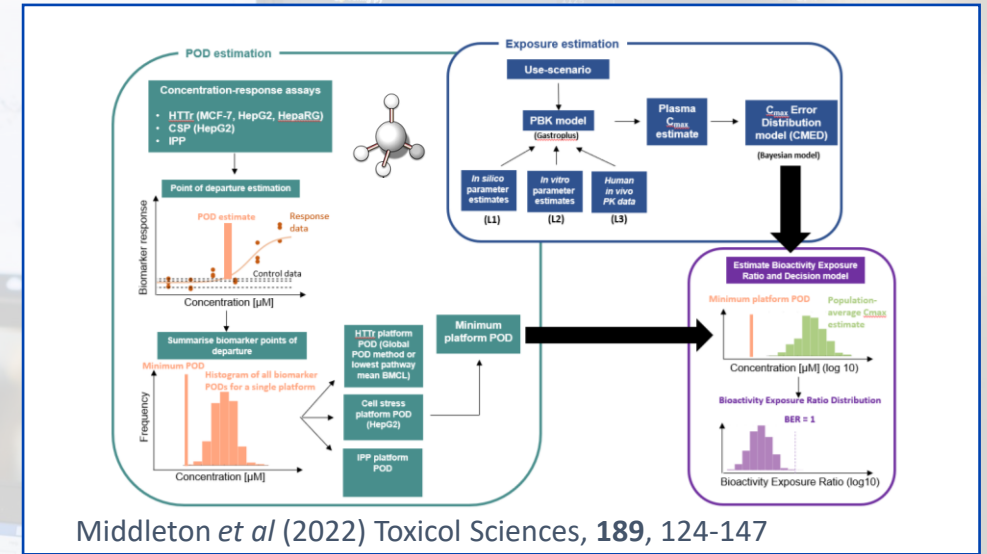
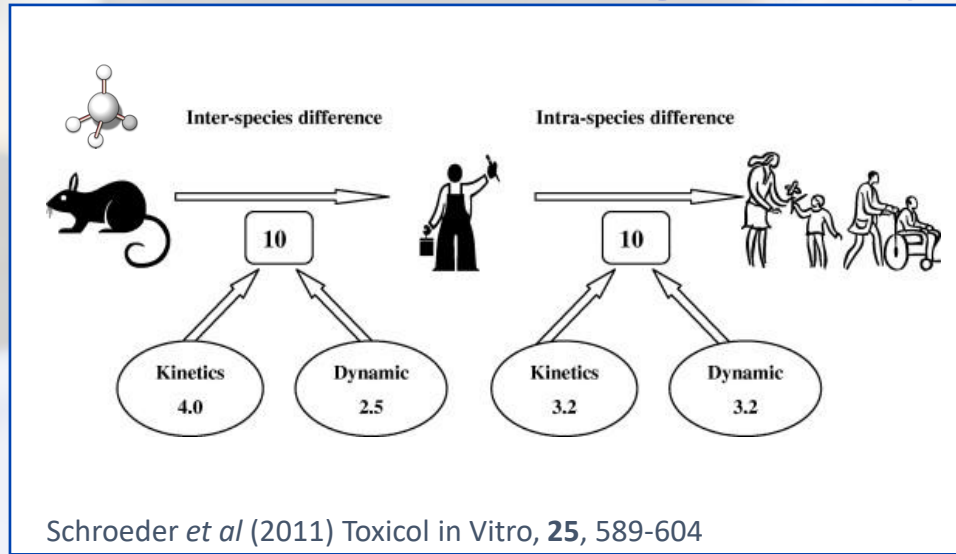
Archives of Toxicology (2022) 96:2865–2879
<https://doi.org/10.1007/s00204-022-03365-4>

REVIEW ARTICLE

A framework for establishing scientific confidence in new approach methodologies

Anna J. van der Zalm¹, João Barroso², Patience Browne³, Warren Casey⁴, John Gordon⁵, Tala R. Henry⁶, Nicole C. Kleinstreuer⁷, Anna B. Lowit⁸, Monique Perron⁹, Amy J. Clippinger¹⁰

Protecting People



Animal Technician

Statistician

Veterinarian

Pathologist

Study Director

Clinical Chemist

QA

CRO

Haematologist

Histologist

Cell Biologist

Bayesian Statistician

Bioinformatician

Molecular biologist

QA

PKB Modeller

Study Director

Immunologist

CRO

Computational Chemist

Protecting People without Animal Testing

The toolbox of NAMs will keep evolving

Ensuring we continue to use the best new science for protecting people as it emerges

We will keep learning together

Building experience, gaining confidence

Building capability and capacity

Continue sharing and publishing

NAMs in regulations

Guidance on NAMs vs. specific lists of tests

Opportunities to embrace NAMs vs. 'waiving animal tests'

Flexibility and scientific dialogue

Maximising opportunities within Annex XI of REACH

Cosmetics

International Cooperation on Cosmetics Regulation (ICCR) **Computational Toxicology**

Principles underpinning the use of new methodologies in the risk assessment of cosmetic ingredients

Scientific Committee on Consumer Safety **SCCS**

THE SCCS NOTES OF GUIDANCE FOR THE TESTING OF COSMETIC INGREDIENTS AND THEIR SAFETY

17th REVISION

OECD **OECD GUIDANCE DOCUMENT NO. 108**

OECD GUIDANCE DOCUMENT NO. 108: RECENT ADVANCES IN THE SAFETY EVALUATION OF COSMETIC INGREDIENTS

17th REVISION

International Cooperation on Cosmetics Regulation (ICCR) **International Cooperation on Cosmetics Regulation (2018)**

European Commission: Scientific Committee on Consumer Safety (2021)

OECD (2021)

Chemicals

Archives of Toxicology (2022) 96:743–766
<https://doi.org/10.1007/s00204-021-01215-9>

REGULATORY TOXICOLOGY

A framework for chemical safety assessment incorporating new approach methodologies within REACH

Nicholas Ball¹, Remi Bars², Philip A. Botham³, Andrea Cucureanu⁴, Mark T. D. Cronin⁵, John E. Doe⁶, Tatiana Dudzina⁷, Timothy W. Gant⁸, Marcel Letis⁹, Bernard van Ravenzwaay¹⁰

Regulatory Toxicology and Pharmacology
Available online 11 September 2022, 105261

Use of New Approach Methodologies (NAMs) in regulatory decisions for chemical safety: Report from an EPAA Deep Dive Workshop

Carl Westmoreland¹, Hans J. Bender², John E. Doe³, Miriam N. Jacobs⁴, George E.N. Kass⁵, Federica Madia⁶, Catherine Mahony⁷, Irene Manou⁸, Gavin Maxwell⁹, Pilar Prieto¹⁰, Rob Roggeband¹¹, Tomasz Sobanski¹², Katrin Schütte¹³, Andrew P. Worth¹⁴, Zvonimir Zvonar¹⁵, Mark T.D. Cronin¹⁶

ecetoc ECETOC (2022)

epaa The European Partnership for Alternative Approaches to Animal Testing EPAA (2022)

Protecting People without Animal Testing

