



Australian Government  
Department of Industry,  
Innovation and Science

National Measurement Institute

# Organic Analysis Working Group

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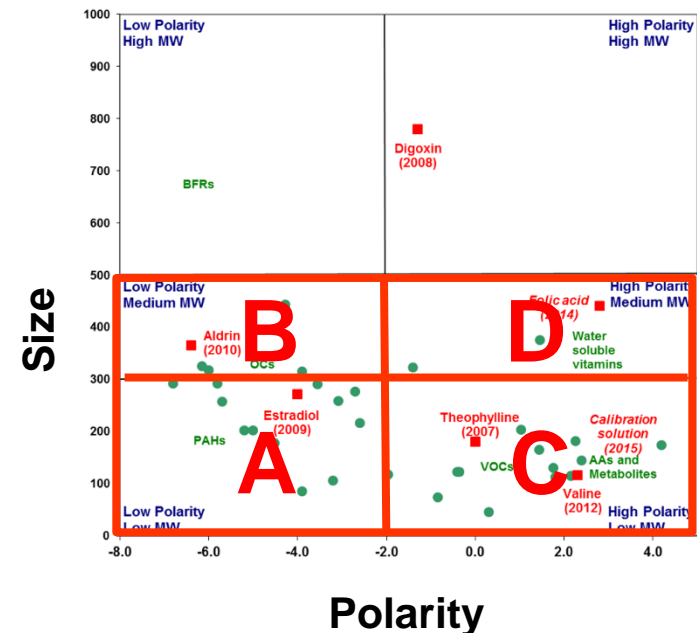


# Major Achievements for OAWG in last period?

- Development of the four track comparison approach (A, B, C, D)
  - Clearly defined criteria of what we do and why
- Focus on model systems to map to core competencies
  - Has allowed implementation of a well defined plan of Track A KCs
- Excellent collaboration with BIPM Chemistry programme to underpin key aspect of organic calibration materials

## What has this lead to.....

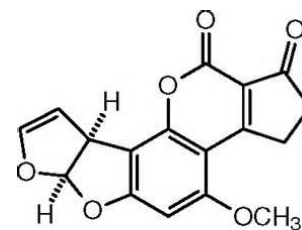
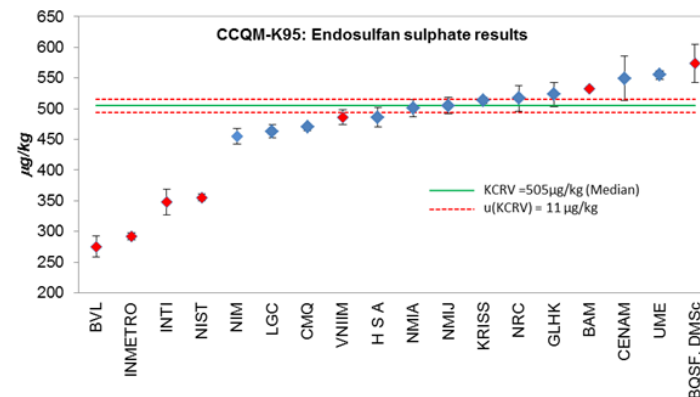
- Worldwide improvement in certification of pure organic calibrators
  - Rigorous assessment of mass balance and qNMR approaches
- Model systems have challenged assumptions, prompted detailed discussion of approaches
- Improved assessment of traceability of assigned values



# Major Challenges for OAWG in last period?



- Shift to a “model system” approach to underpin core competency is challenging
  - Initially lead to poorer performance → repeat of our first Track A matrix comparison
  - Selecting the model system is a compromise
- In depth discussions on each comparison to maximise the learning has meant limited time to discuss other issues, new techniques etc
- Still a way to go to bring the group to “best practice” in some areas
- Starting to work in very challenging areas, first KC for mycotoxins in food: complex analytes, low levels, challenges purity assigning calibrants

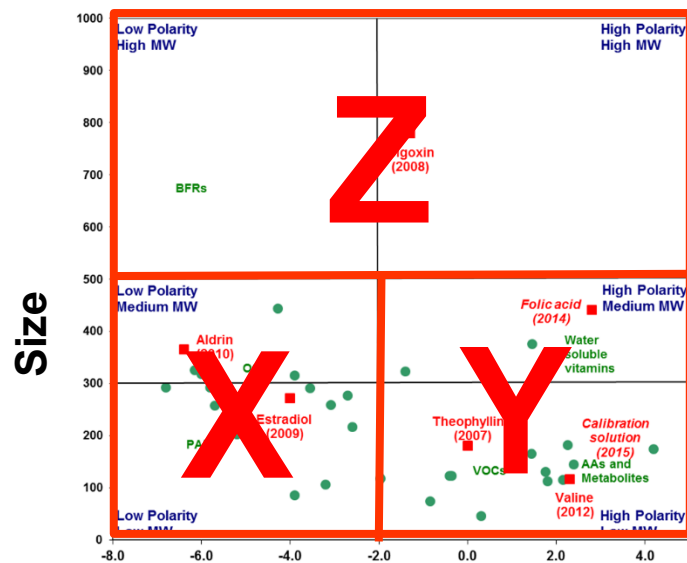


afatoxin B<sub>1</sub>

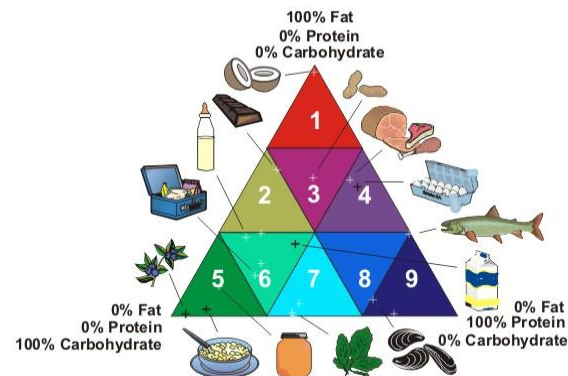


# What's new in the updated OAWG strategy?

- Refinement of assessment of our “measurement space” for the Track A core competency model
  - Purity model updated
  - Calibration solution/matrix material model developed
  - Strict mapping of capabilities to measurement spaces
  - Defines a 10 year list of generic comparisons aligned with this approach
- Priority areas: clinical and food safety/labelling
  - Examples: more sophisticated clinical biomarkers, natural toxins in food
- Changes in technology
  - Measurement tools: increasingly sophisticated MS....
  - Nature of calibrations: black box measurements
- Working towards appropriate and meaningful broad claim CMCs
  - qNMR purity assessment
  - Low polarity analytes in sediment



## Polarity



# Number of comparisons for future period?

- Track A core comparisons (10 year plan)
  - 5 locked in from BIPM for pure organics/ calibration solutions
  - ~10 proposed to cover matrix materials
  - <20 to cover the full set of basic competencies
- Track B comparisons to assess CRMs/PT materials
  - No fixed program, at most one per 1-2 years
- Track C comparisons to assess more specific or emerging areas
  - Program of one per year, carefully selected by the WG
- Track D studies
  - Most Track A, B and C have parallel pilot studies
  - Independent pilot studies as required, not more than one every two years

