



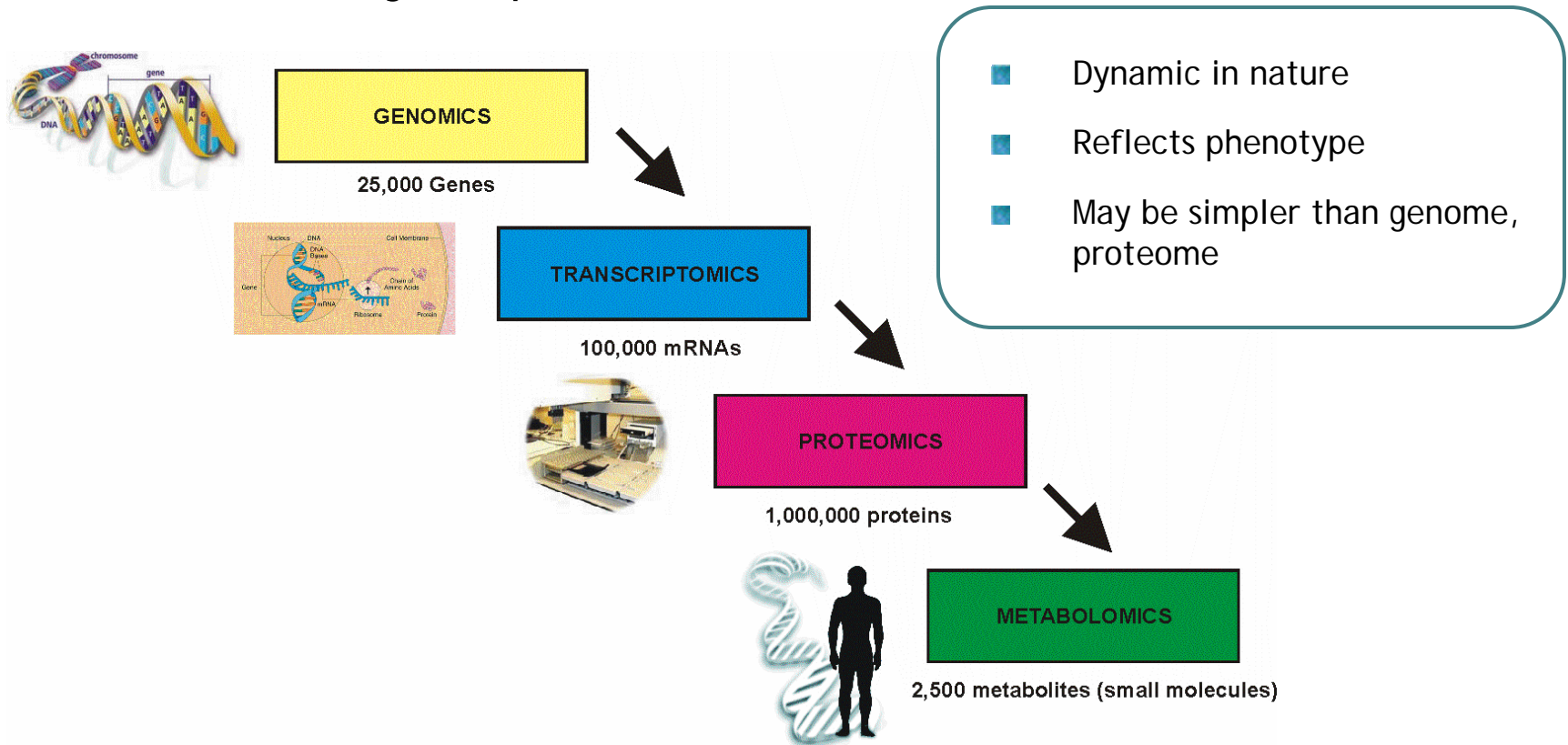
Standards Development for Metabolomics

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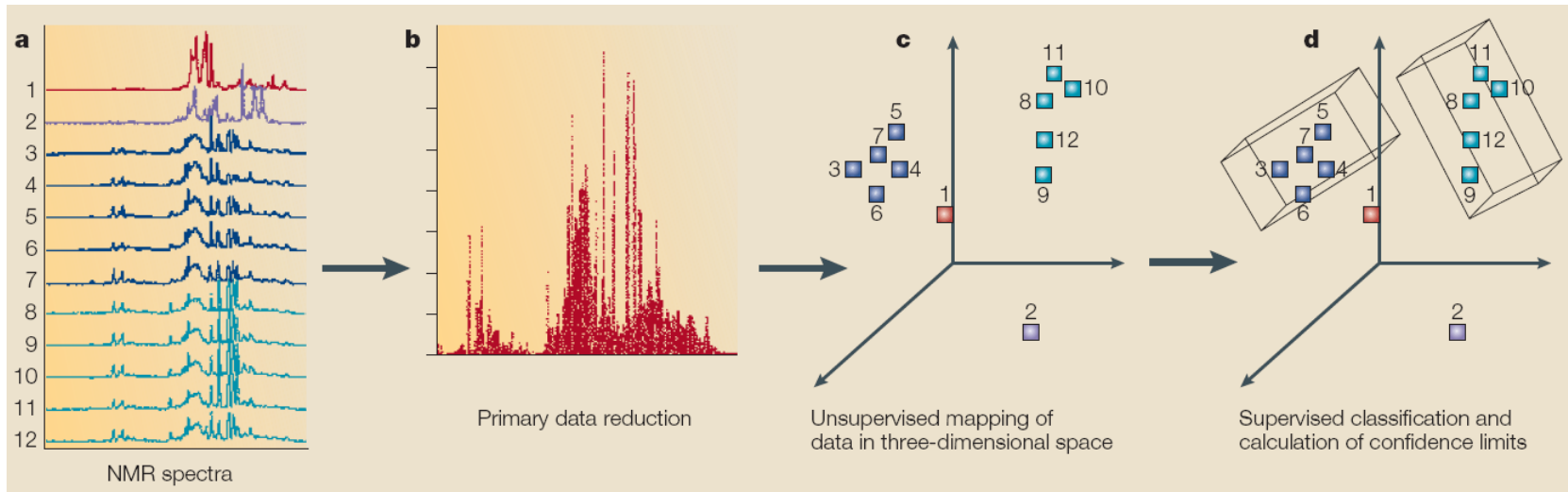
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Metabolomics

The **metabolome** represents the identity and concentration of metabolites at a given point in time



Goals of Metabolomics

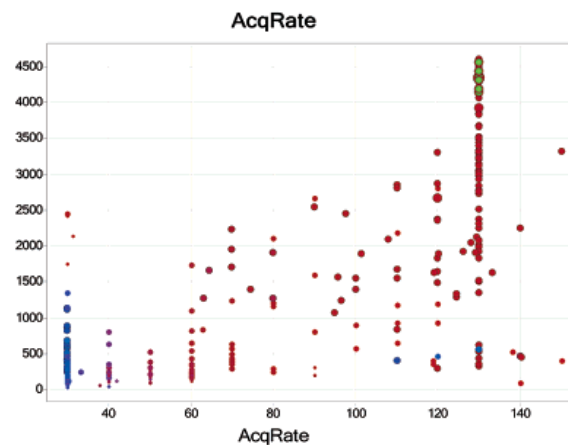


Nicholson et al., 2008

- Identification of new diagnostic tools
- Therapeutic targets (metabolic pathways)
- Drug toxicity
- Studies of gene function

What Are the Issues?

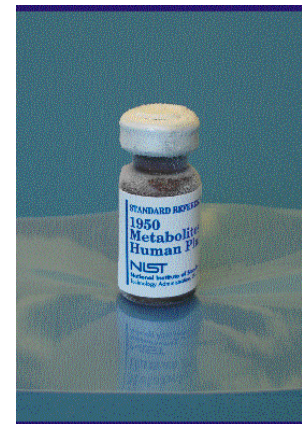
- Comparison of different data sets
 - Sampling
 - Instrument variations
 - Software
- Identification of statistically significant metabolites
 - Data deconvolution
 - Spectral databases
- Validation of metabolites



Kell et al., 2007

Reference Material Design - SRM 1950

- New SRM 1950 Metabolites in Human Plasma is being developed to provide a well-characterized reference material for metabolomics technology development
- Plasma samples collected from approximately 100 individuals
- Equal number of healthy men and women, 40 - 50 years of age
- Racial distribution similar to that of U.S. population
- Total plasma volume ~ 20 L
- Both quantitative and qualitative (identity) information



Additional Needs

- Control samples for specific populations and matrices
- Tools for data alignment of complex data sets
- Validation of statistical models for pattern recognition
- Reporting standards - Metabolomics Standards Initiative

