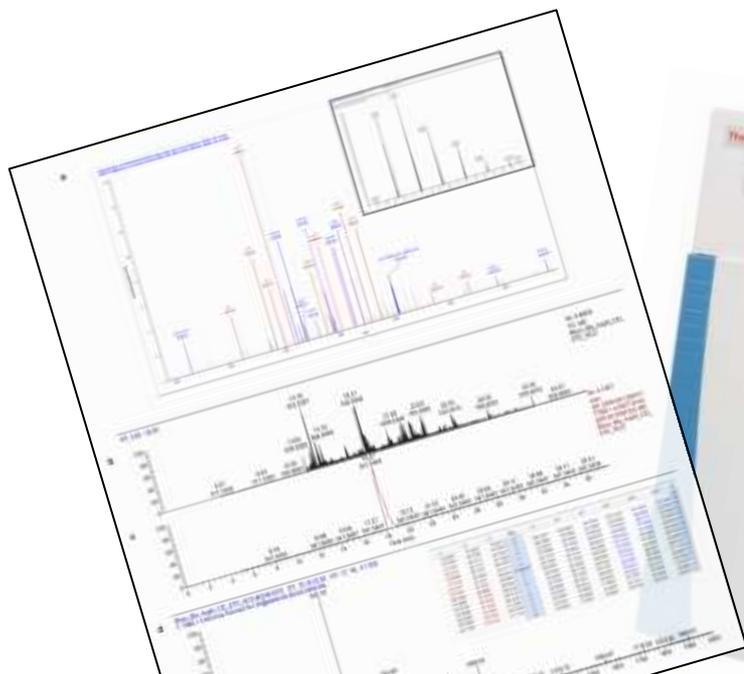


# Drug Testing: Securing The Best Value For The Racing Regulator



Mary C. Scollay, DVM  
Equine Medical Director  
Kentucky Horse Racing Commission

# An Important Reality



1. The majority of participants act in compliance.
2. Your stakeholders want you to enforce your rules.
3. They are relying on you to protect them from those who would not.

# Testing roulette:

## To rotate or not to rotate

### When Is It OK?

- OK
  - Intelligence gathering
  - Population surveys
  - One-off tests specifically in response to intelligence
- Not OK
  - Controlled therapeutic medications
  - Substances identified as ongoing threats
  - When its primary purpose is cost-cutting, not strategic testing



# Turn-Around Time

The regulatory authority required:

“Final report within 3 days of receipt of samples.”

The Laboratory Director’s interpretation:

If work was incomplete at 3 days,  
the sample was be reported as ‘Passed.’

# ELISA Testing

Antibody: Specific to a substance

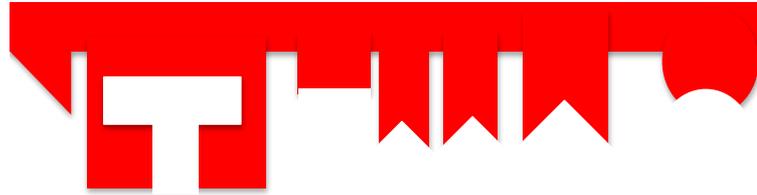


Can cross react—**but with decreased sensitivity**—with other, similar molecules.

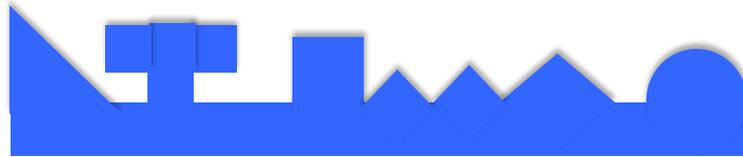
The similar molecules must be present in much higher concentrations to generate same response as target drug at lower concentration.

There is vulnerability in multiple substance panels.

**Antibody**



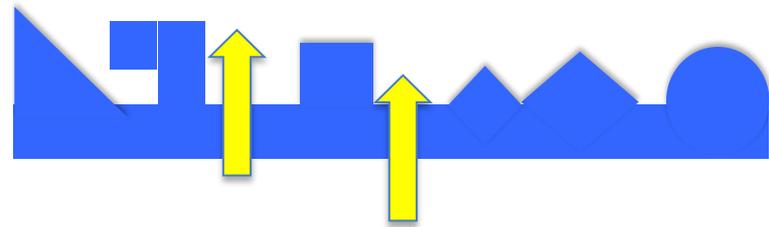
**Molecule  
selected for  
analysis**



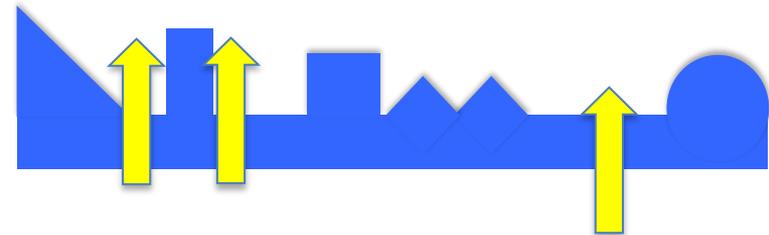
Target Molecule



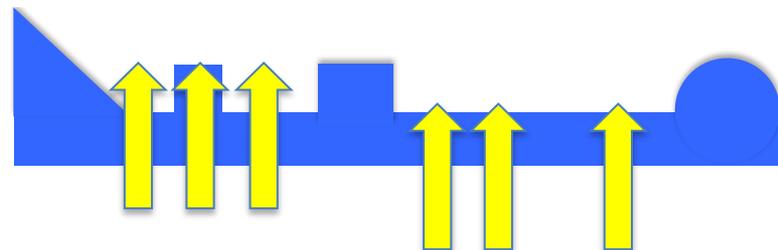
Molecule 2

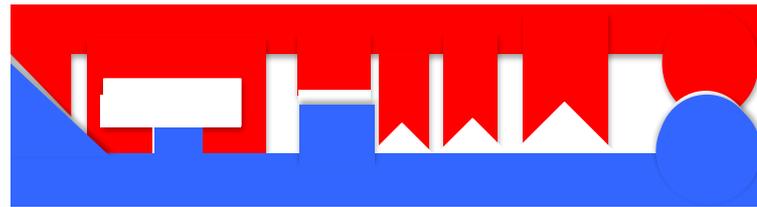
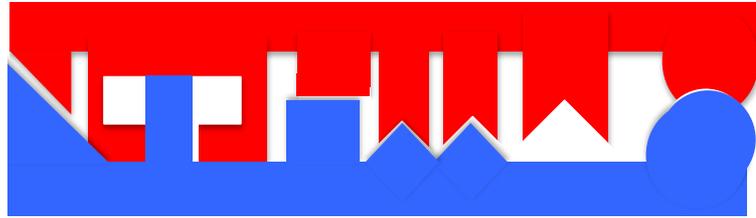
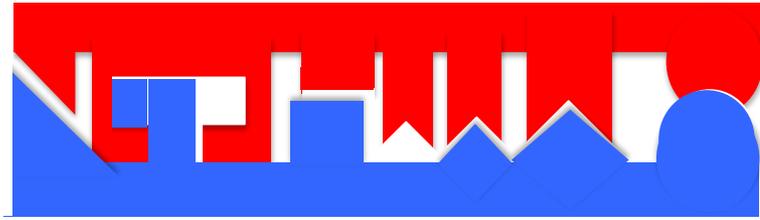
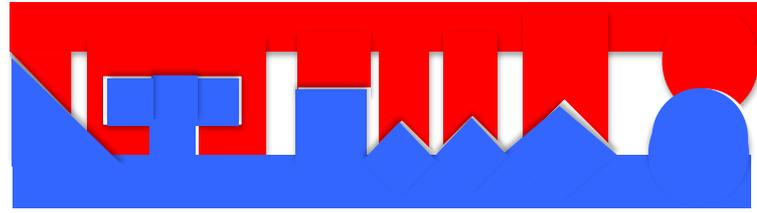


Molecule 3



Molecule 4





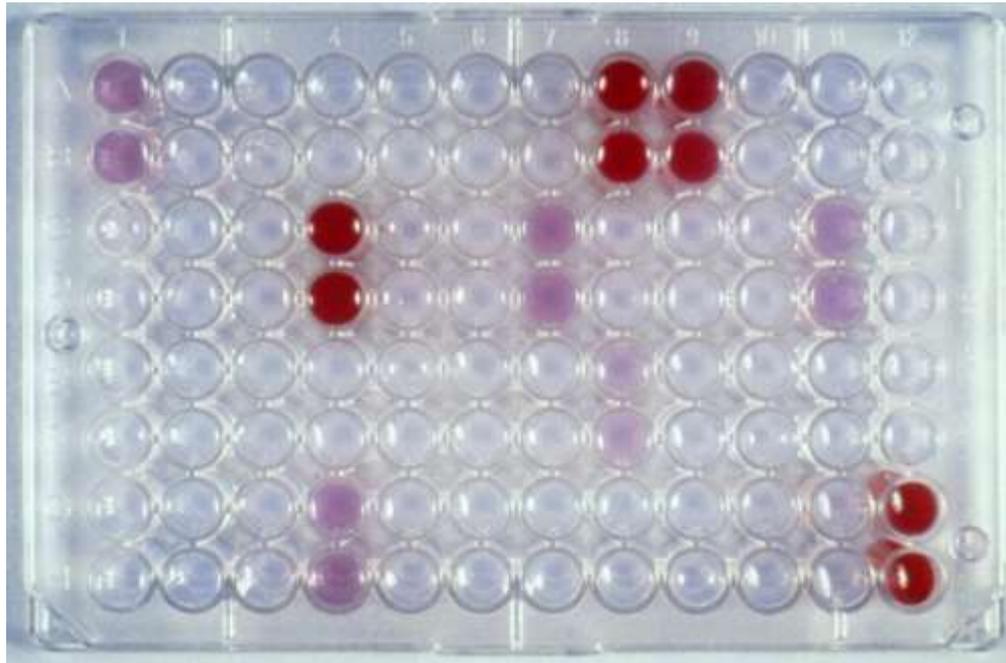
# The Result

While ELISA testing *can* detect Molecules 2, 3, and 4...

...their detection by this test won't support your drug testing regulations.

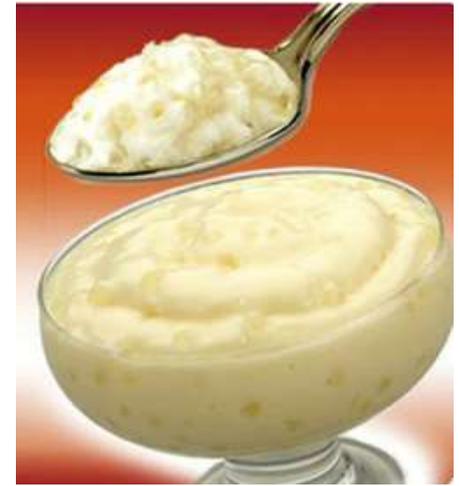
When a laboratory offers to detect hundreds of substances with 30-45 ELISA tests....

....remember that these tests only have relevant sensitivity for 30-50 of those substances.



# Instrumental screening

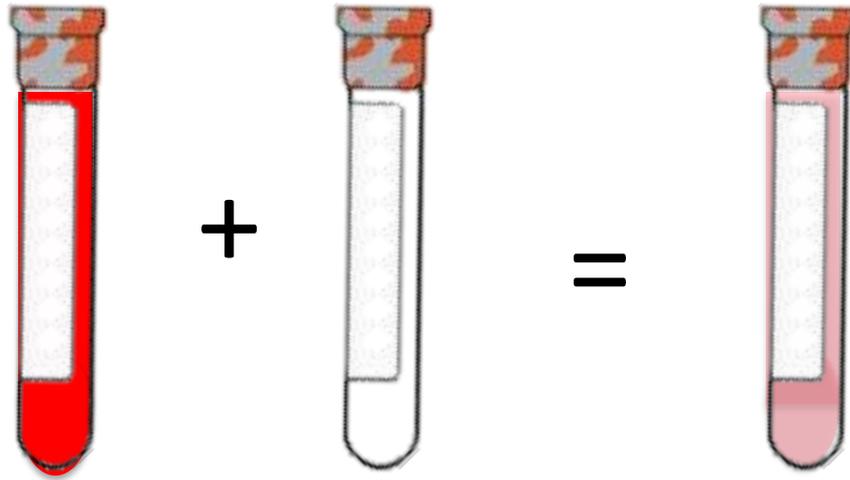
- You can run pudding through a mass spectrometer
- Samples must be adequately prepared to actually detect substances.
- Instrumental screening of inadequately prepared samples—you might as well be analyzing the pudding.
- Require details of the number and nature of extracts the lab will prepare for EACH sample.



# What instrumental screening can do for you

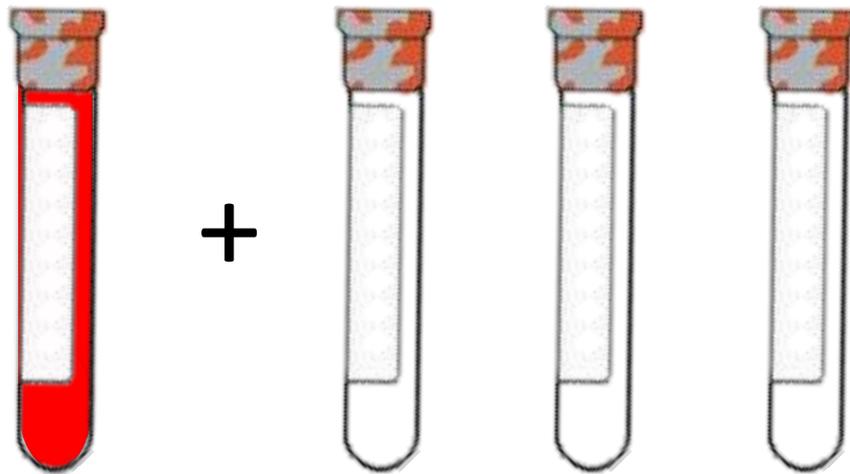
- Intelligence gathering
  - Medication usage patterns by
    - Horse
    - Trainer
    - Racetrack / Race meet
    - Surface / Class / Distance / Age
- Retention of data for retrospective analysis
  - The addition of a new substance to the mass spectral library
  - Identification of 'unknown' peaks for investigation

# Pooling Samples: So what's the risk?



Concentration of substance  
in the sample decreased by

**50%**



**=**

**75%**

# Take Home Message

Know what you want from your drug testing program.

Require the service provider to do the work.

Be willing to pay fairly for it.

Good testing costs good money.

Bad testing wastes everybody's money.

# Thank you



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