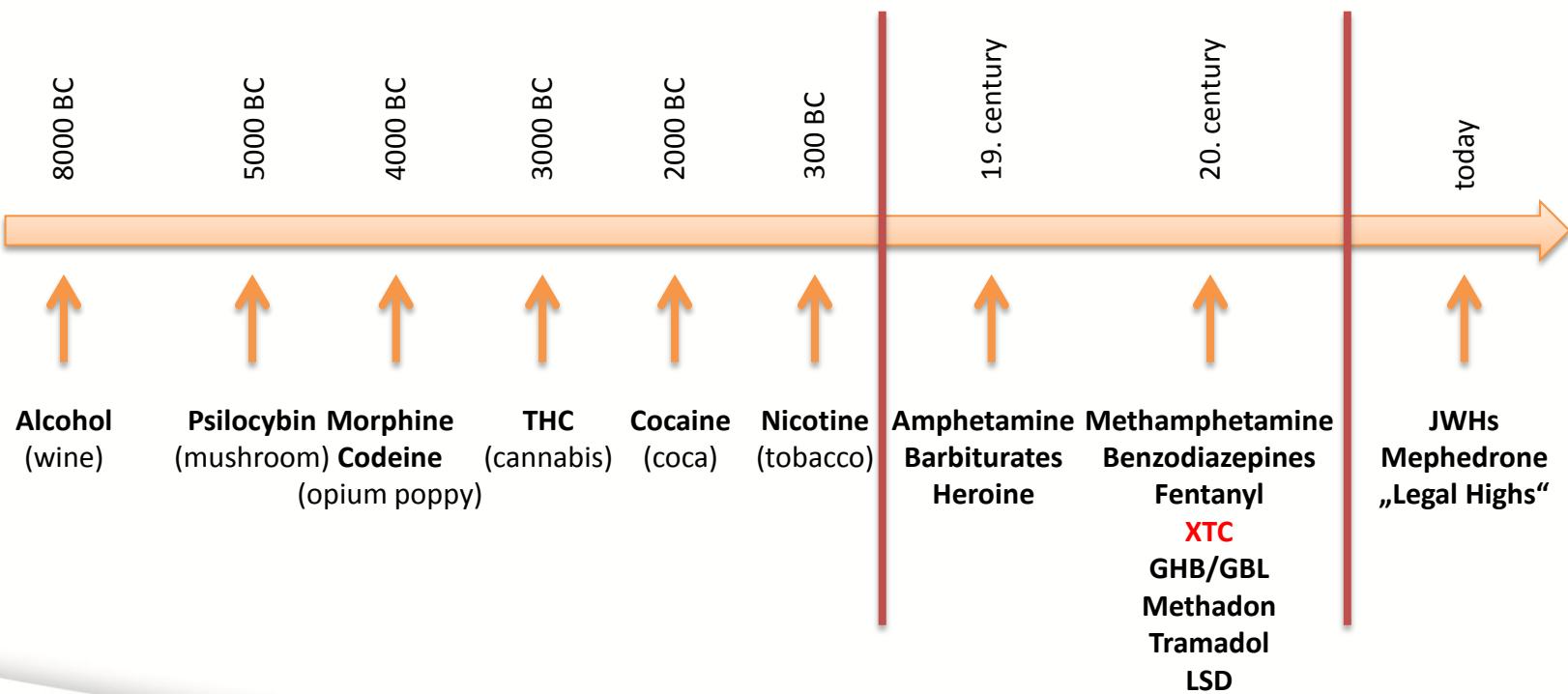


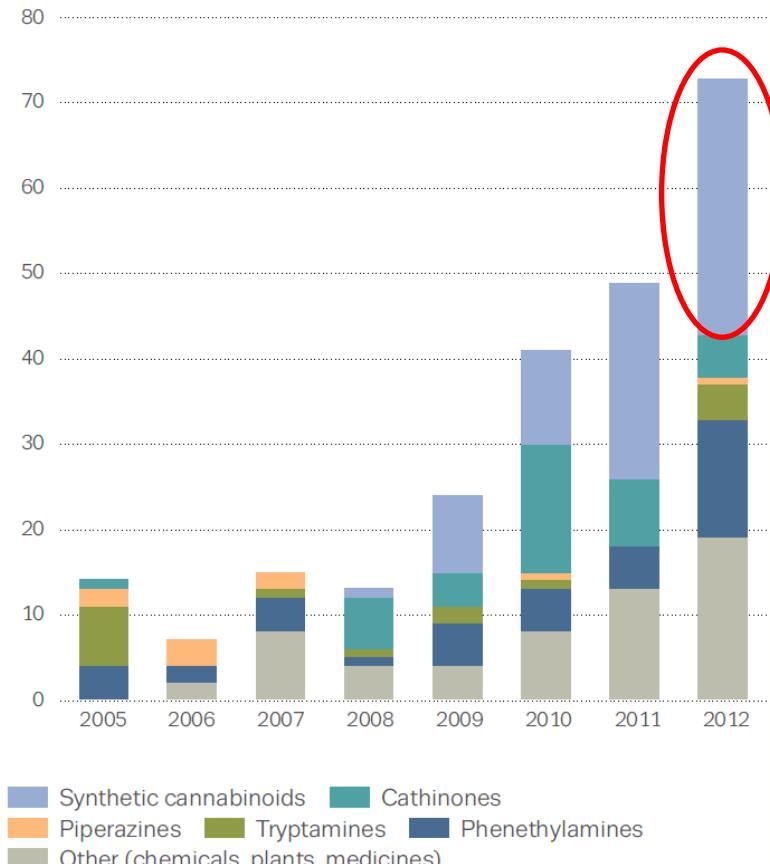
Rapid Tests for Synthetic Cannabinoids

Dr. Torsten Winkler

Psychoactive substances through the ages

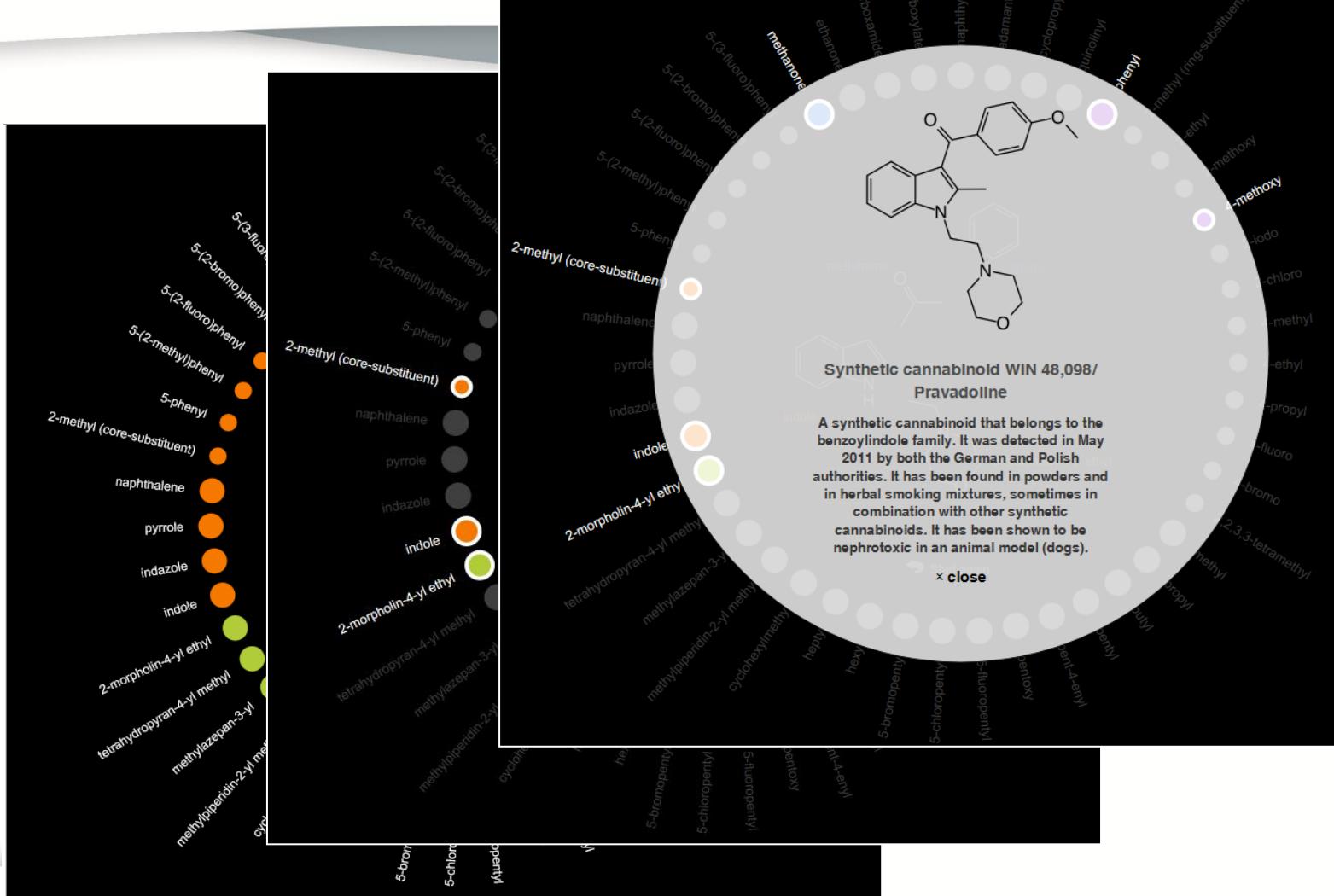


Emerging Drugs of Abuse

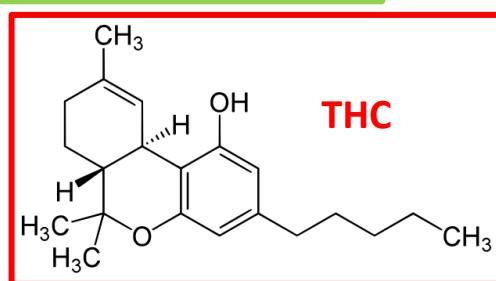
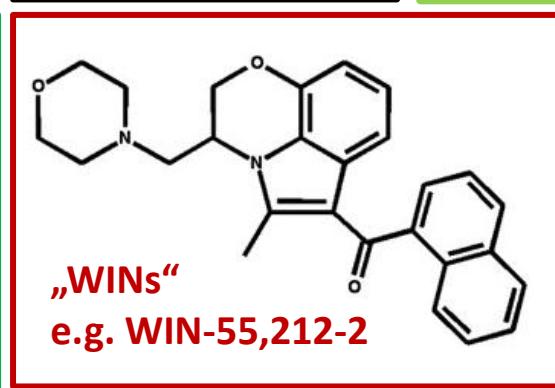
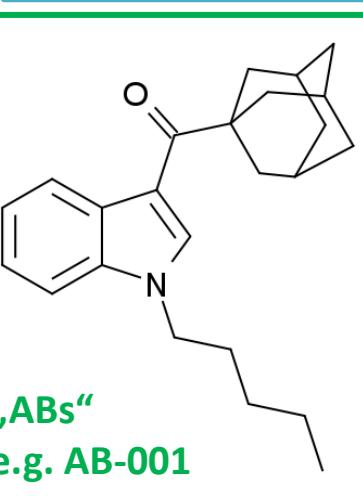
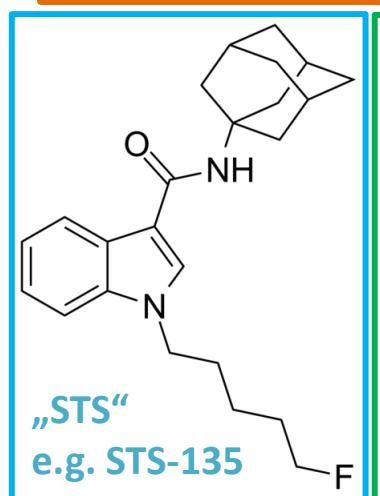
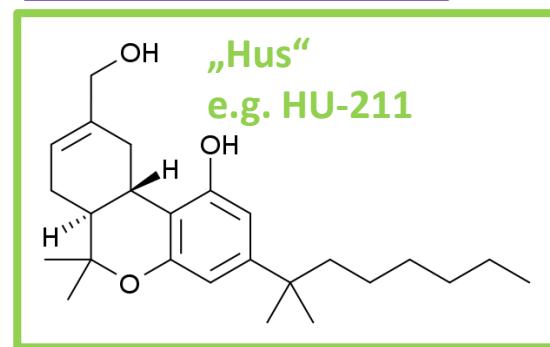
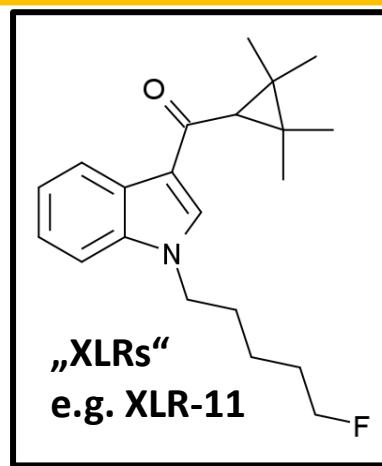
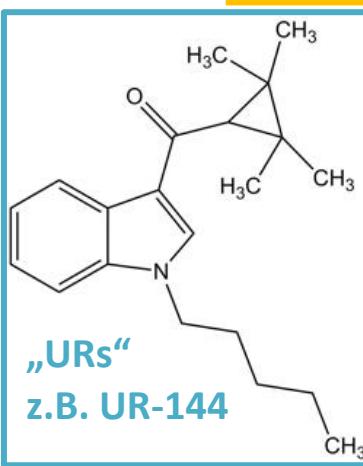
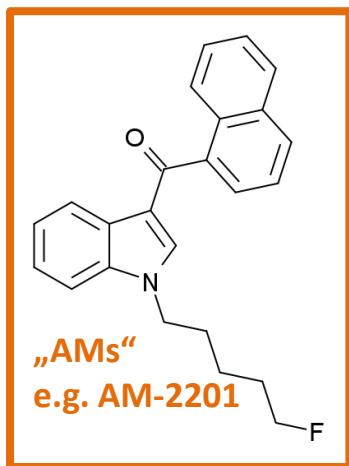
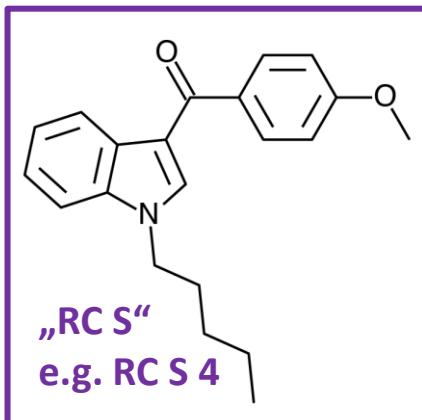
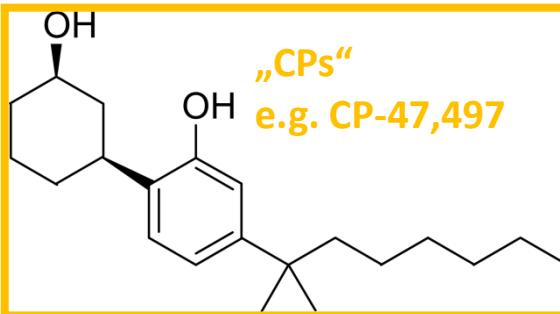
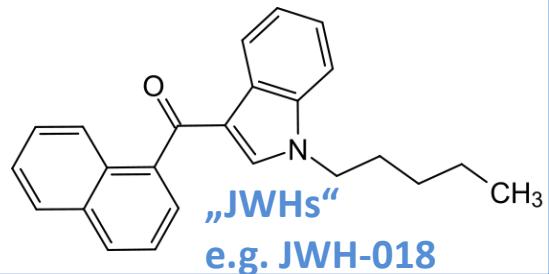


Spice today

new art laboratories



„Spice“ today



Vision of a „Spice“ rapid test

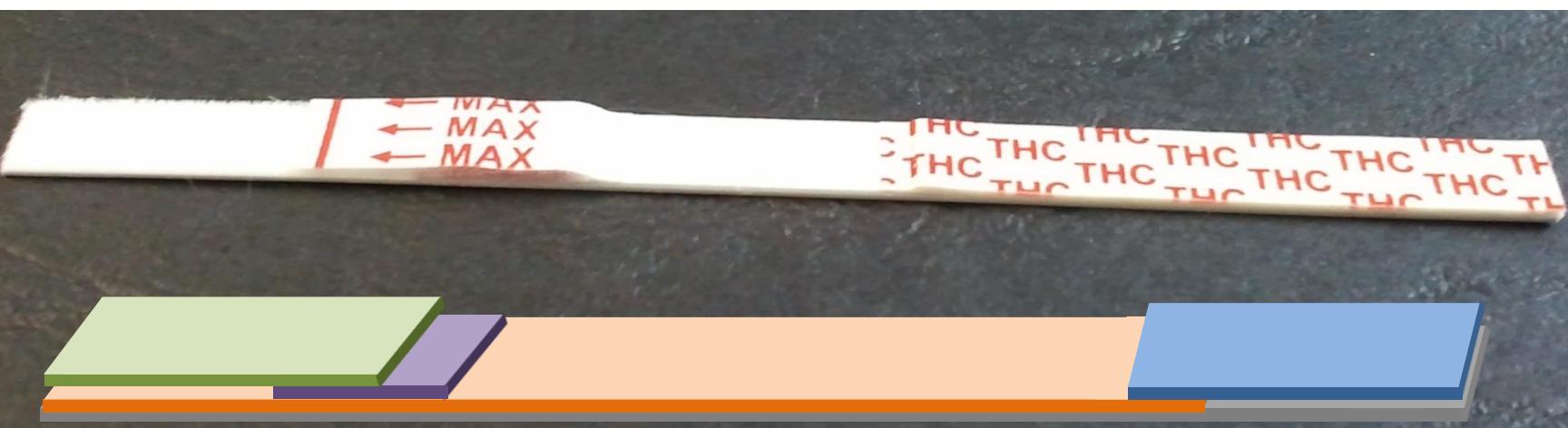


Target Cut-Off: < 25 ng/ml
Target analyte: JWH-018 metabolite
Sensitivity: >90%
Specificity: >95%

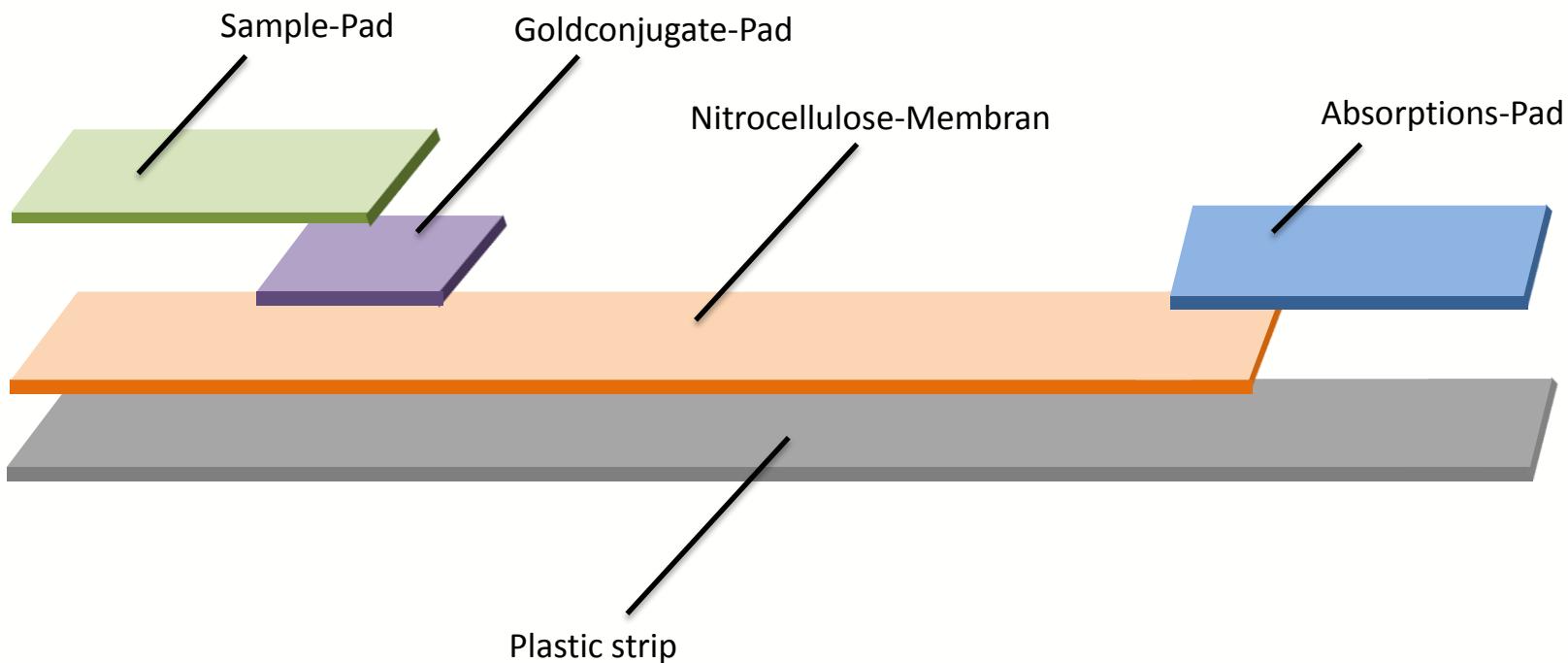
Principle of a rapid test



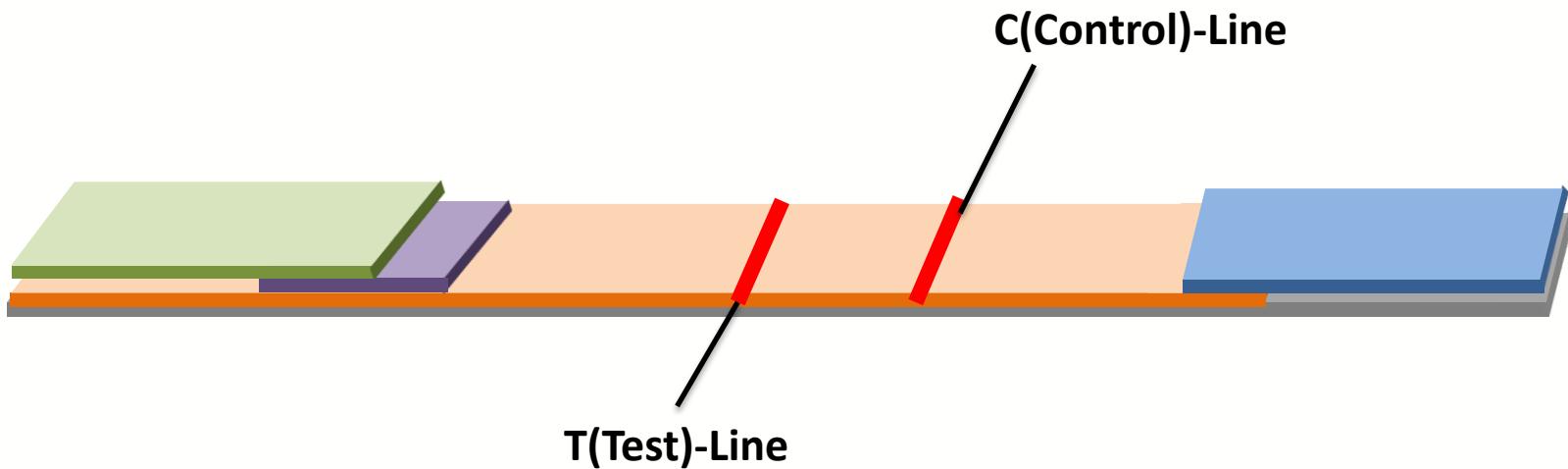
Principle of a rapid test



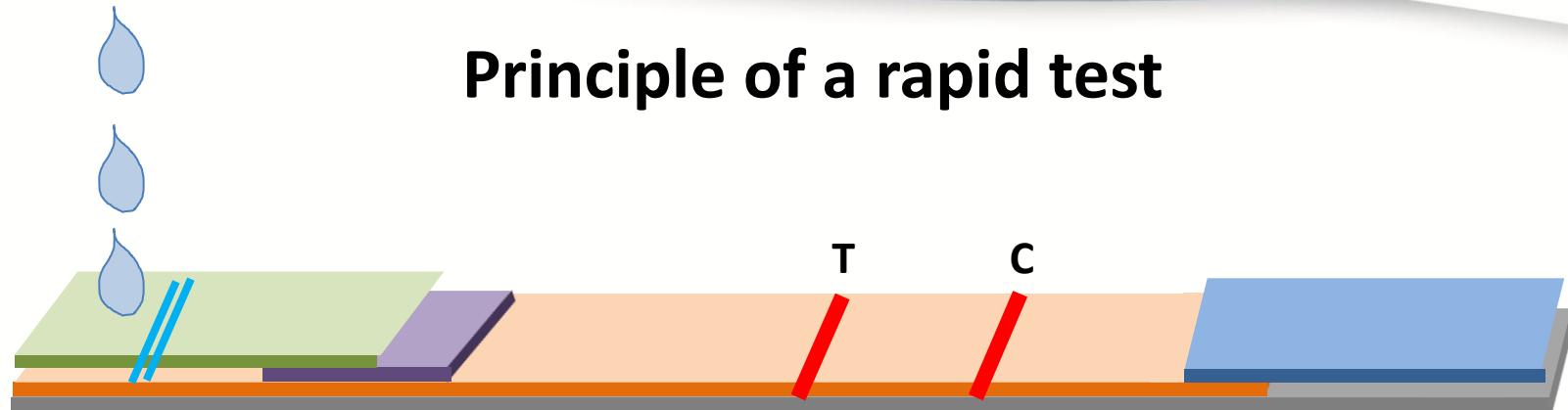
Principle of a rapid test



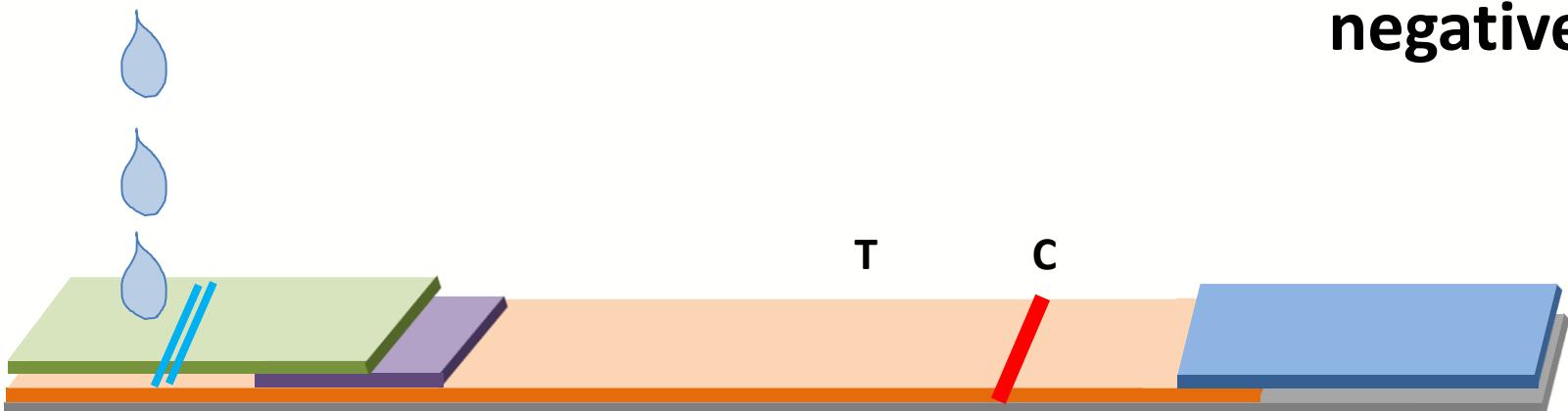
Principle of a rapid test



Principle of a rapid test



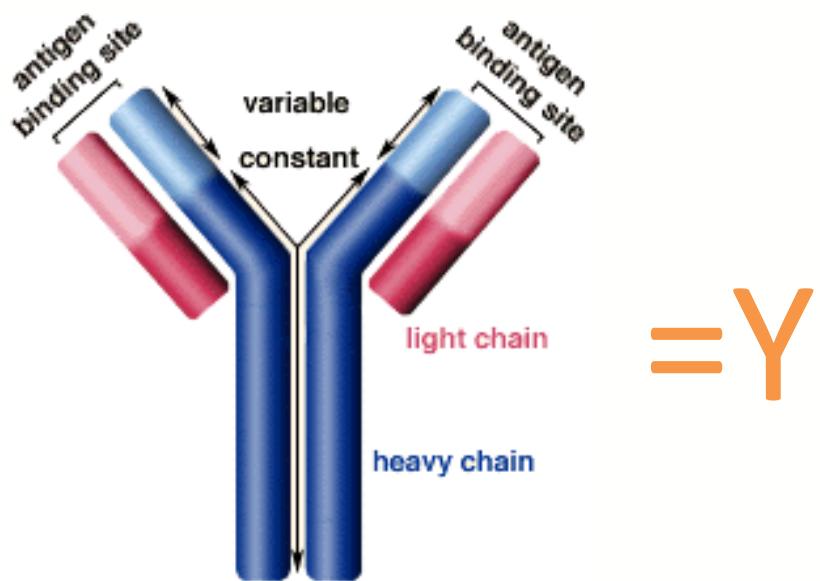
negative



positive

Principle of a rapid test

- Antibody -



= γ



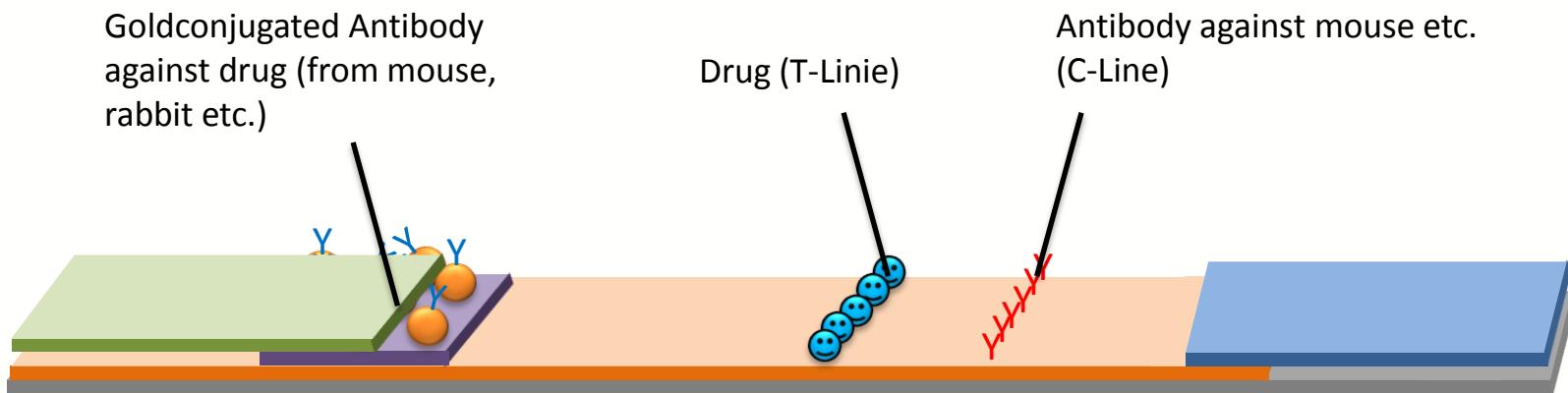
How can you visualize the binding?

Principle of a rapid test

Gold-conjugated antibody



Principle of a rapid test



Cross reactivities

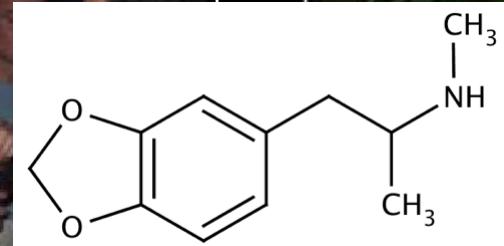
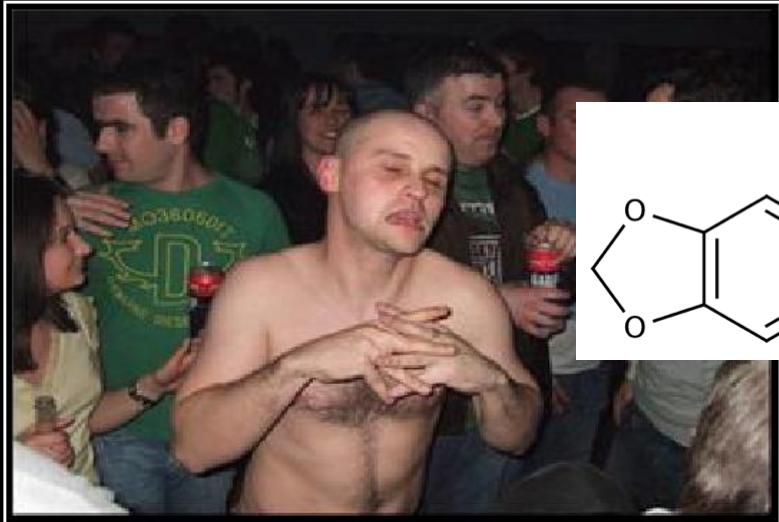


Cross reactivities

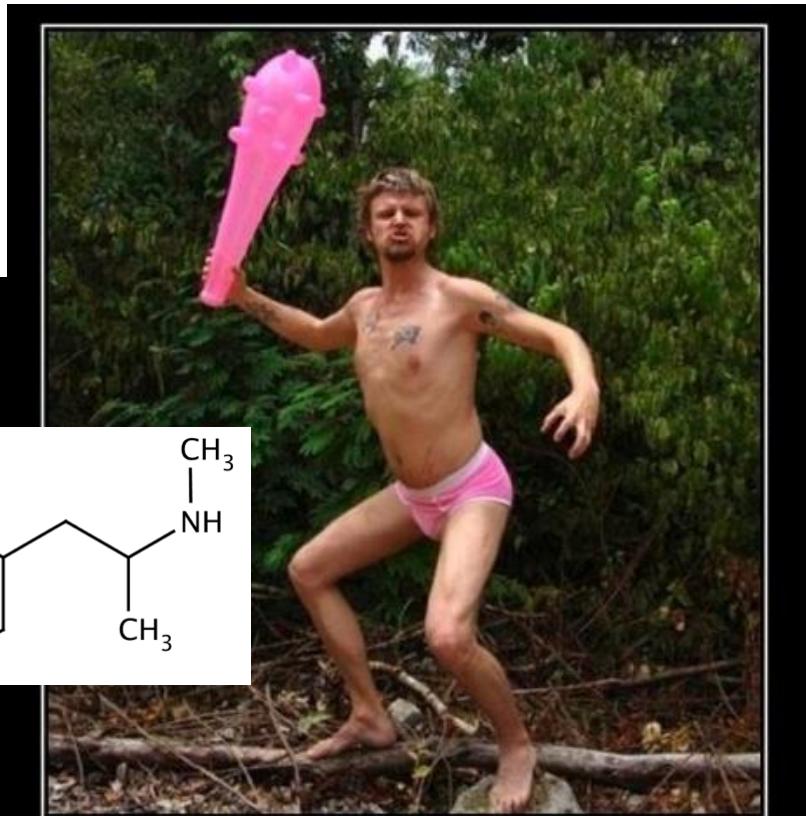


Cross reactivity

One antibody binds to more substances



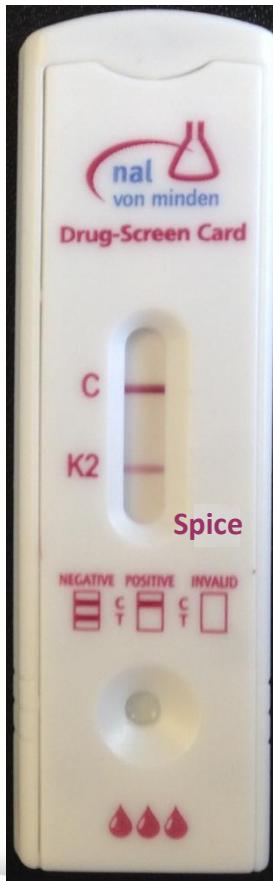
ECSTASY!



CRYSTAL METH

Development of a „Spice“ rapid test

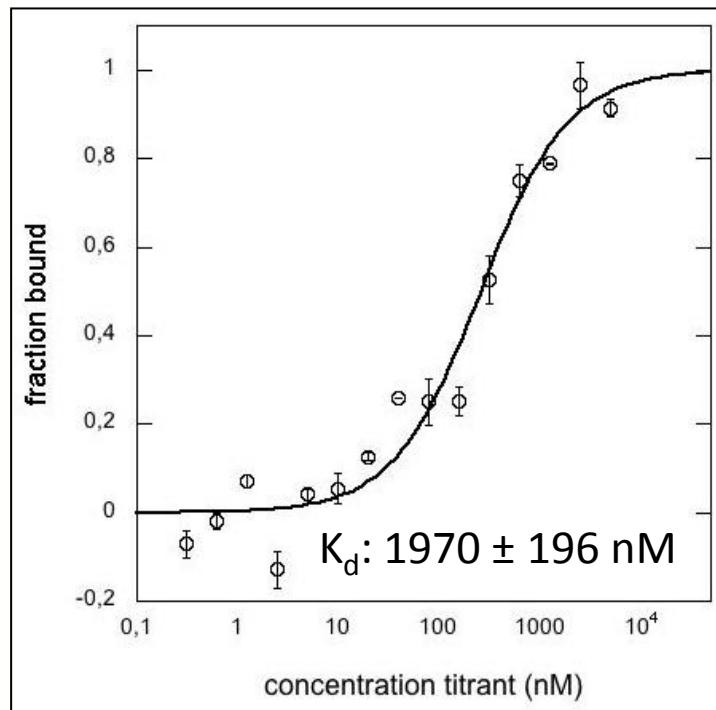
Vision of a „Spice“ rapid test



Target Cut-Off: < 25 ng/ml
Target analyte: JWH-018 metabolite
Sensitivity: >90%
Specificity: >95%

From vision to development of a „Spice“ rapid test

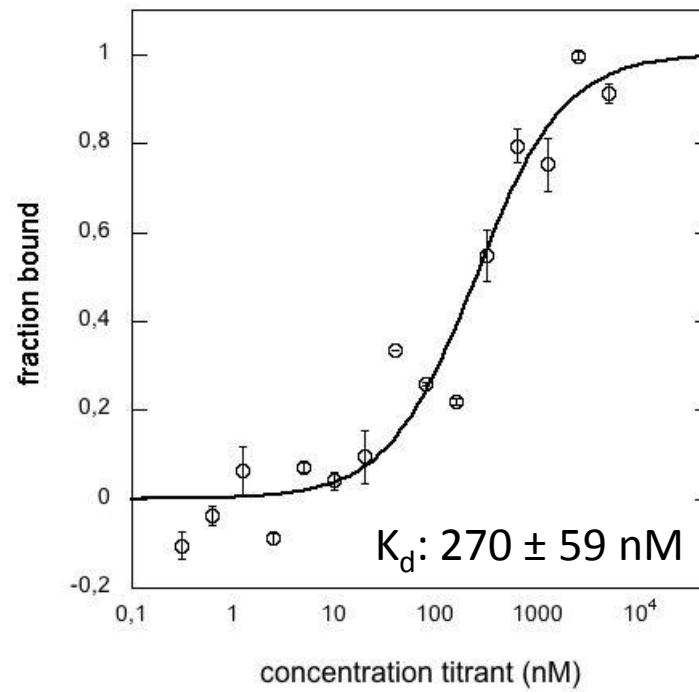
Screening for antibodies: commercially available antibodies



Theoretical cut-off of 180 ng/ml possible...

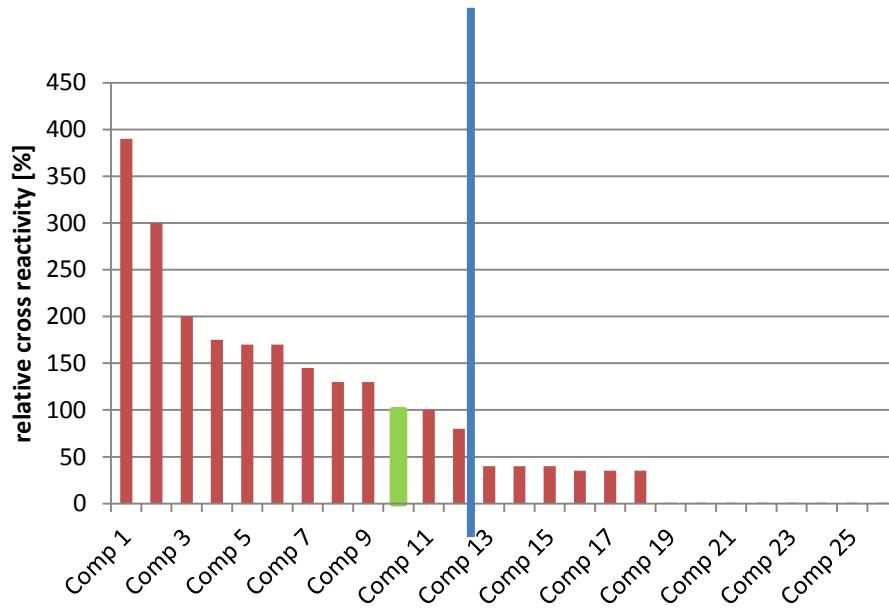
From vision to development of a „Spice“ rapid test

Screening for antibodies: self made antibody



Theoretical cut-off of 19 ng/ml possible

Cross reactivity pattern



Development of a „Spice“ rapid test



Target analytes

- JWH-018 metabolite
- JWH-250 metabolite
- UR144 metabolite
- Perhaps even fourth target

Problem: Confirmation of „false“-positive samples

High sensitivity?



?

Low specificity?



Thank you for your attention

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Email: t.winkler@nal-vonminden.com

Drug Rapid Tests

Medical Rapid Tests

Laboratory Diagnostics

Laboratory Service

Consulting & Service