

THE COMPARISON OF RAPID UREASE TESTS



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➔ **Introduction:** Rapid urease tests (RUT) are widely used for the detection of HP infection.

➔ **Aims:** To estimate the rapid urease tests (RUT) efficiency, to compare their sensitivity to jack bean and microbiotic urease and specificity to reagents with different pH.

➔ **Materials and methods:**

- Dry multi-layer RUT wherein layers are separated by a plastic mesh. (fig.2 sample 1)
- Dry multi-layer RUT wherein layers are separated by a hydrophobic membrane. (fig.2 sample 2)
- Dry multi-layer RUT optimized for digital reading. (fig.2 sample 3)
- Dry single-layer RUT. (fig.2 sample 4)
- Gel RUT. (fig.2 sample 5)

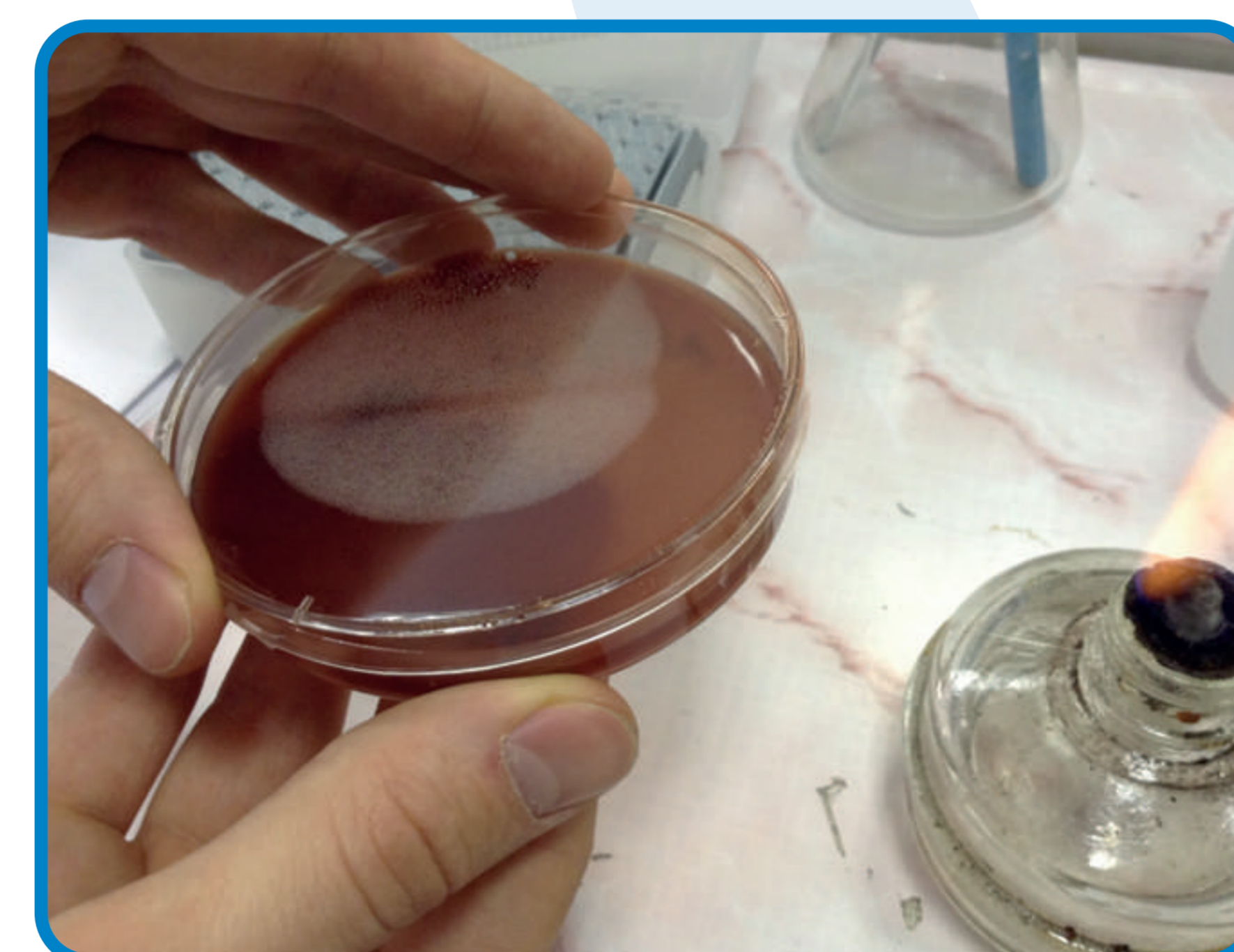


Fig.1 Culture of H.pylori on blood agar

Sensitivity of the test systems was defined according to the instructions using:

- model solutions of urease prepared with dilution of solution of urease of bean *Canavalia ensiformis* (jack bean);
- urease emitted by *Helicobacter pylori* colonies (fig.1) which were cultivated and transferred to solution;

Specificity for reagents with different pH was defined using

- set of buffer solutions with pH from 6.4 to 7.2

➔ **Results:**

High sensitivity (speed of reaction with both of urease types) was shown by single-layer systems: tests changed color after 10 seconds exposition, multi-layer systems - after 60 seconds. Gel RUT did not show any reaction with microbiotic urease after 1 hour exposition.

Dry multi-layer RUTs did not show any reaction with buffers what probably means that they are protected from false cross-reactions.

➔ **Conclusion:** Modern test systems are equally effective in diagnosis of HP.

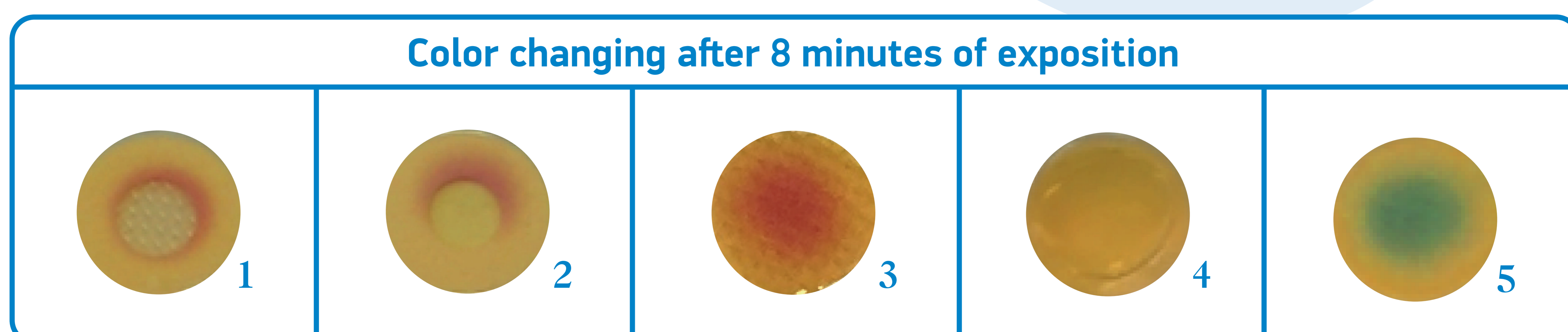


Fig.2 Color changing after 8 minutes of exposition with Helicobacter pylori urease