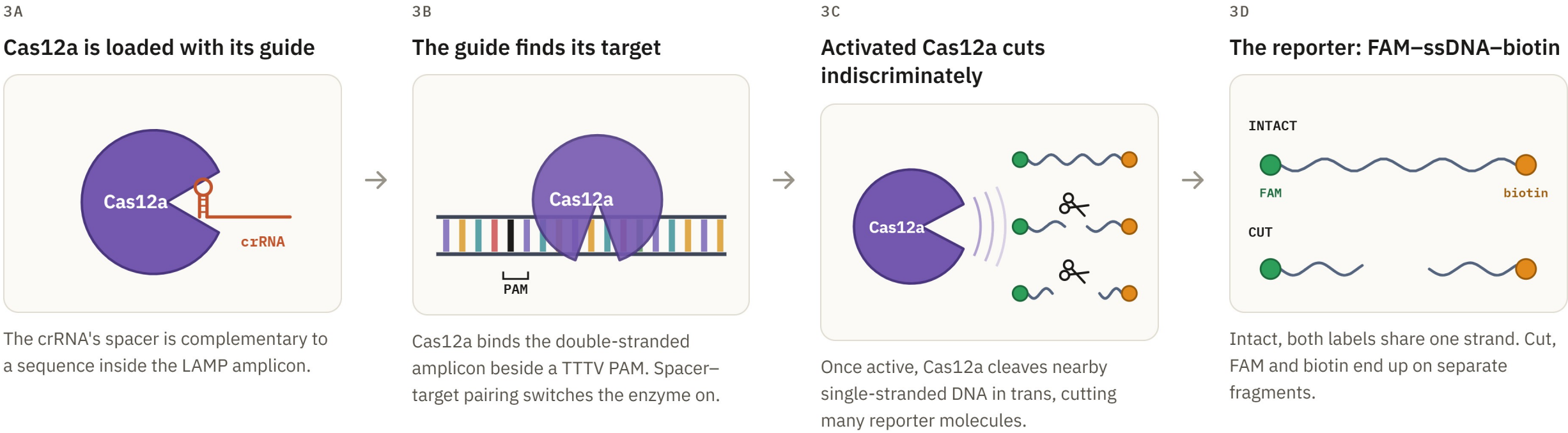
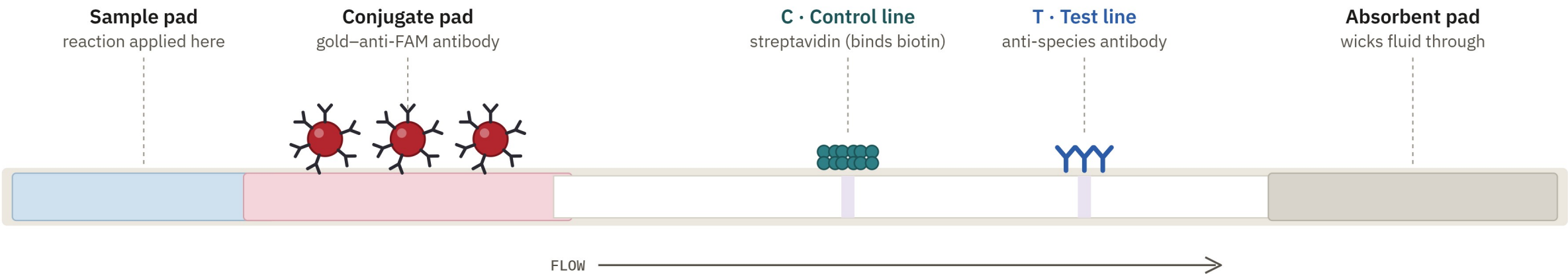


From target recognition to a line on the strip

3 CRISPR recognition & collateral cleavage

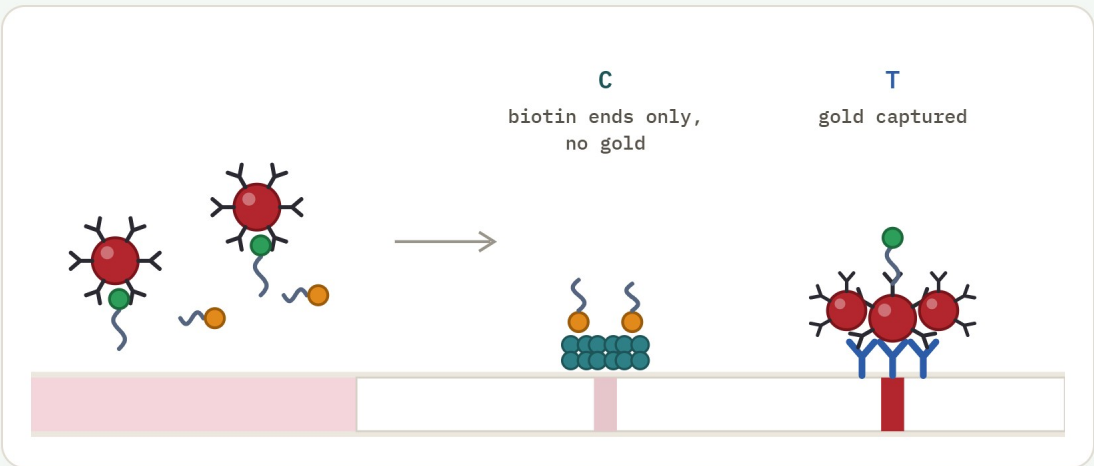


4 Reading it on a lateral flow strip

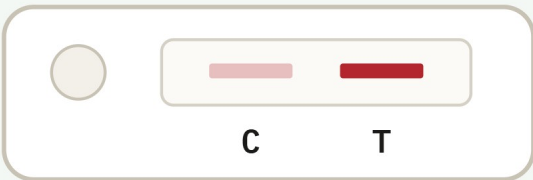


Positive

Target present · reporters cut



- 1 Cas12a has cut the reporters, so **FAM and biotin sit on separate fragments**.
- 2 Gold-anti-FAM picks up FAM fragments, but nothing tethers them to biotin, so they **flow past the control line**.
- 3 The anti-species antibody at T captures the gold conjugate itself: **test band appears**.

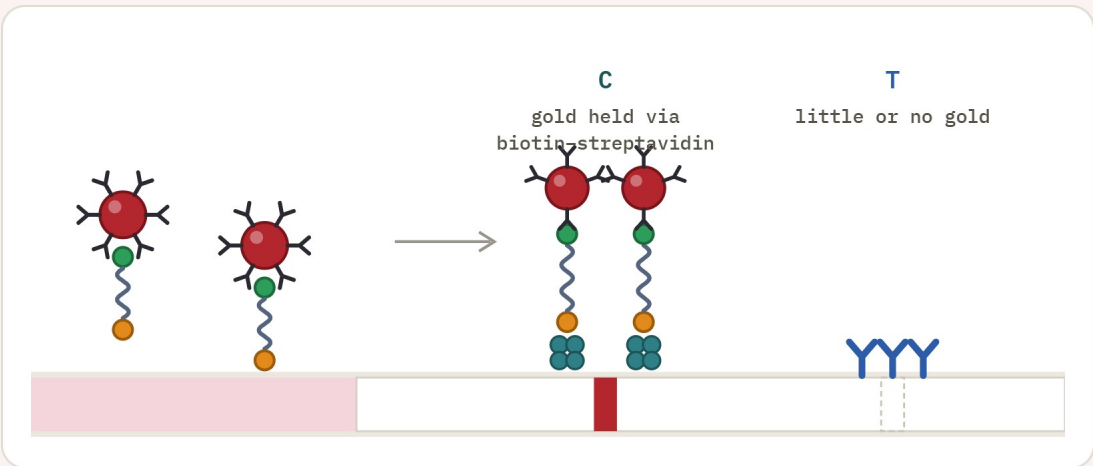


WHAT YOU SEE
T band visible. C band faint or gone — only leftover intact reporter can still bind there.

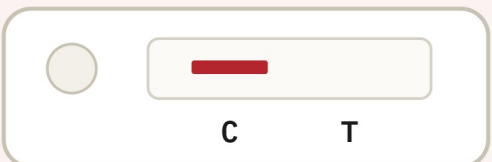


Negative

No target · reporters intact



- 1 No activated Cas12a, so **reporters stay whole**: FAM and biotin on one strand.
- 2 Gold-anti-FAM binds the reporter's FAM end; the **biotin end is caught by streptavidin** at C.
- 3 Gold accumulates at C: **control band appears**. Little free conjugate is left to reach T.



WHAT YOU SEE
C band only. A faint T line can still show if reporter is limiting, so compare with a no-template control.

The C line here depends on intact reporter, so it is not a true flow control: run a positive and a no-template control with every batch, and read at the time the strip manufacturer specifies.