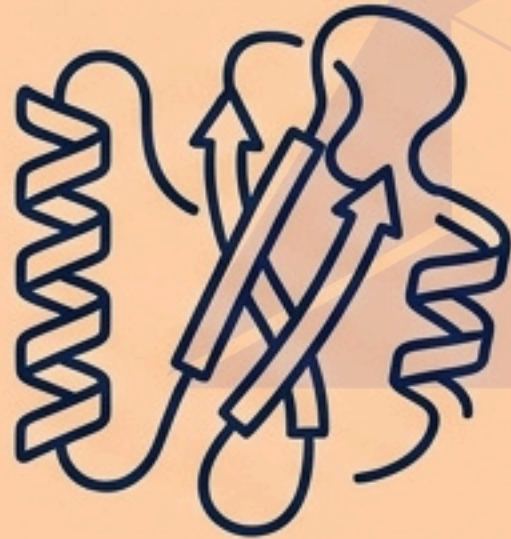


The Avery-MacLeod-McCarty Experiment

Biochemical Characterisation of the Transforming Principle (1933–1944)

The Unsolved Mystery: Protein, RNA, or DNA?

In 1928, Griffith proved a 'transforming principle' from heat-killed Smooth (S) bacteria could turn harmless Rough (R) bacteria lethal. But what was the exact biochemical molecule responsible?



Protein



RNA



DNA

Isolating the Suspects



S strain



Step 1: Heat-kill virulent S strain (*Streptococcus pneumoniae*).



Step 2: Extract and purify the biochemical mixture.



Purified Extract

***Note:** Prior to this experiment, the scientific consensus strongly favored protein as the genetic material.



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



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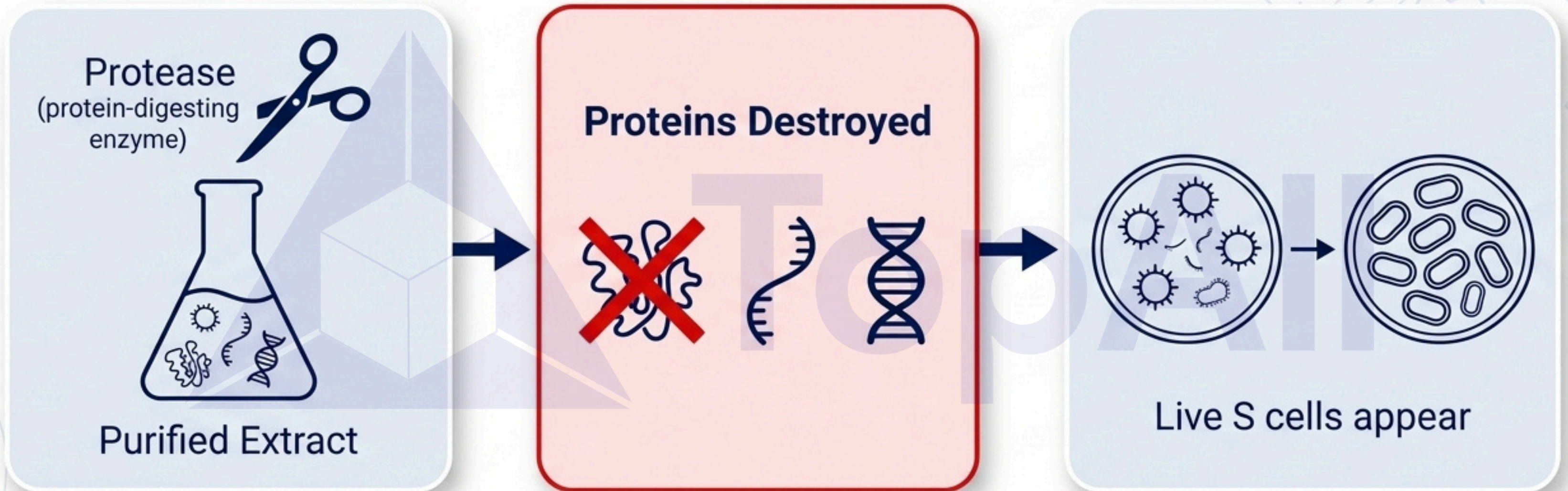
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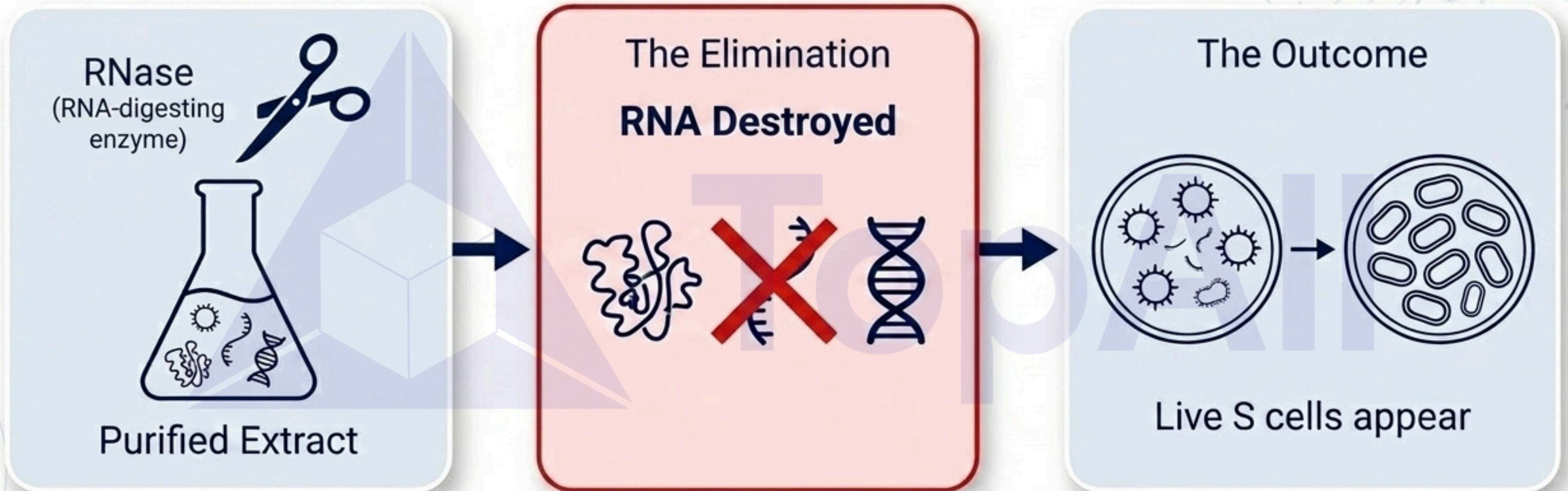


Trial 1: Eliminating Proteins



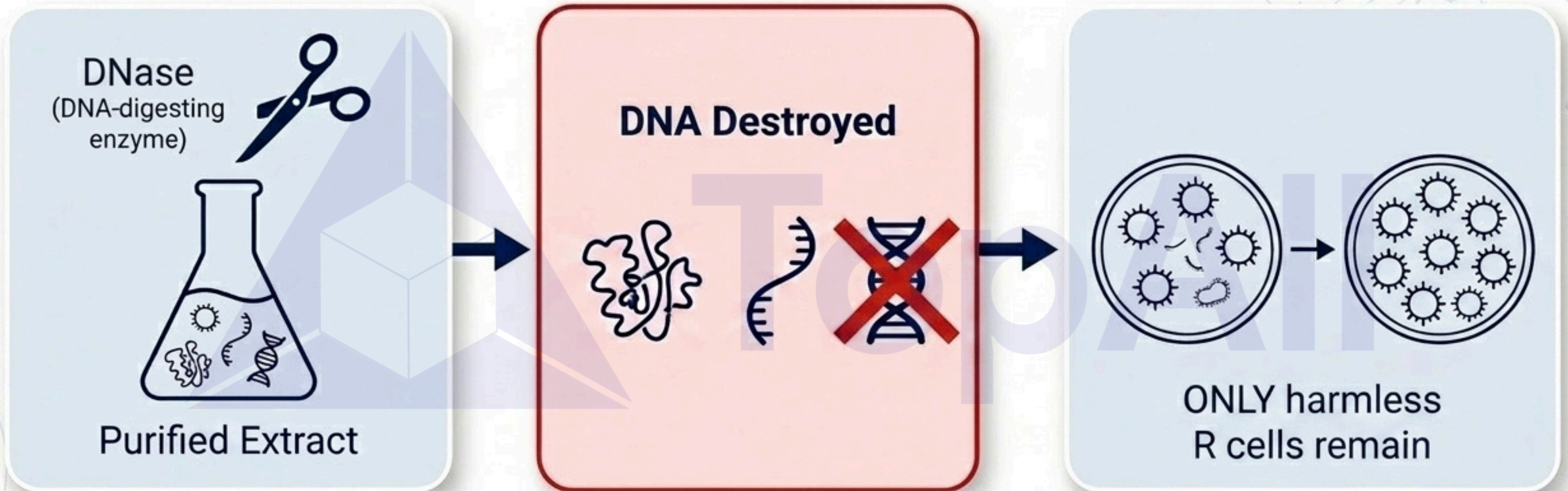
Transformation Occurred. Protein is NOT the transforming principle.

Trial 2: Eliminating RNA



Transformation Occurred. RNA is NOT the transforming principle.

Trial 3: Eliminating DNA



Transformation Stopped! DNA is required for transformation.

The Final Verdict

Conclusion Matrix

	Destroyed Molecule	Did R cells transform to S?	Conclusion
1		Yes	Not the cause
2		Yes	Not the cause
3		NO	DNA is the Transforming Principle.

Key Takeaway: DNA alone from S bacteria caused R bacteria to transform. DNA is the hereditary material.





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