

Prions: Infectious Proteins

Acellular pathogens and the science
of abnormally folded proteins.



What Are Prions?

Infectious agents made entirely of abnormally folded protein. They are similar in size to viruses but operate through a completely different mechanism.

Normal Protein



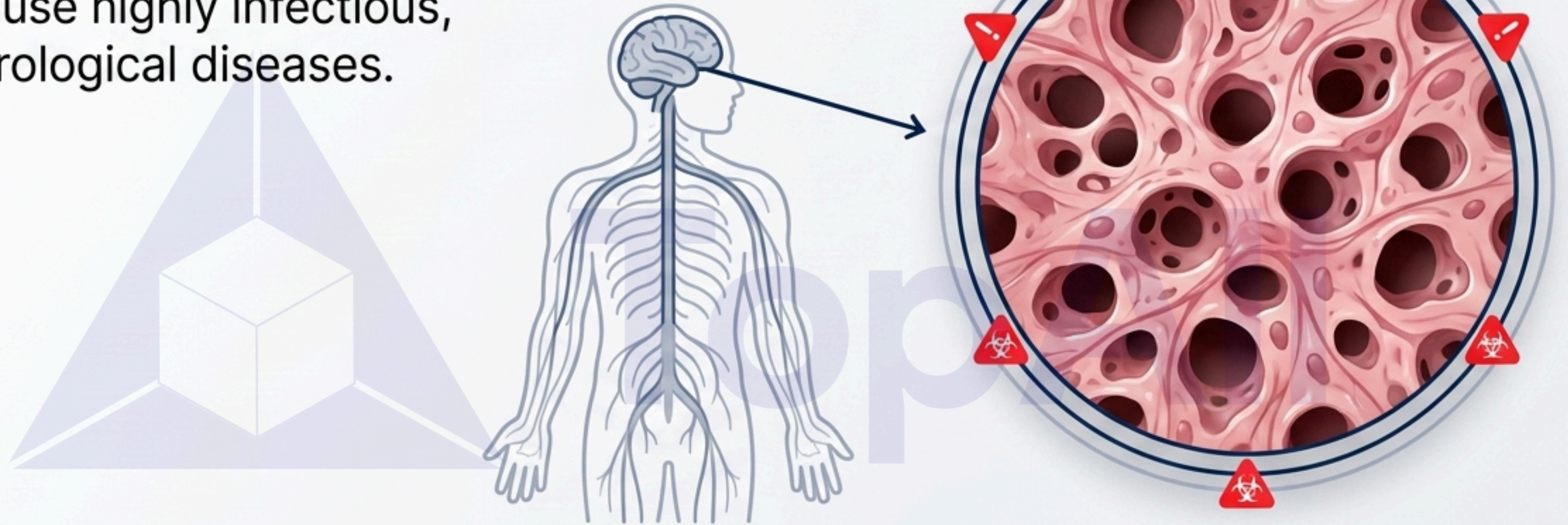
Prion Agent



⚠ No Genetic Material.
Uniquely lack DNA or RNA.

The Neurological Impact

Prions cause highly infectious, fatal neurological diseases.



They induce the abnormal folding of normal cellular proteins in the brain, leading to severe cellular degradation and 'sponge-like' brain damage.



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

$$E=mc^2$$



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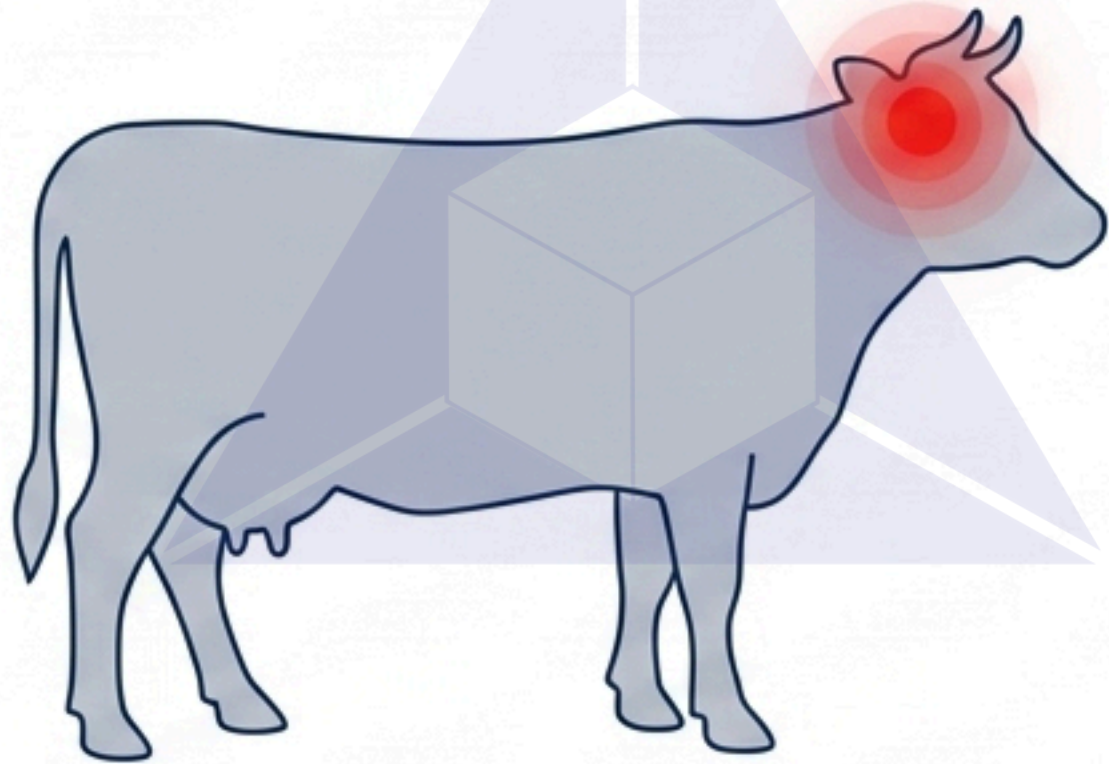
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Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



Case Study: Cattle



Organism: Cattle

Bovine Spongiform Encephalopathy (BSE)

Commonly referred to as “Mad Cow Disease.” A fatal neurodegenerative disease in cattle that causes a spongiform degeneration of the brain and spinal cord.

Case Study: Humans

Organism: Human

Creutzfeldt-Jakob Disease (CJD)

The analogous variant of BSE. It presents as a rare, highly fatal, and transmissible neurological disorder in humans caused by prion infection.



Acellular Pathogens: A Diagnostic Matrix

Pathogen	Composition	Genetic Material	Target / Disease
Virus	Nucleoprotein (DNA/RNA + Protein Coat)	Has DNA or RNA	General hosts / e.g., Mumps, TMV
Viroid	Free RNA (Low Molecular Weight, No Protein Coat)	Free RNA only	Plants / Potato Spindle Tuber
Prion	Abnormally folded protein	None (No DNA/RNA)	Neurological / BSE & CJD

Prion = Infectious protein ONLY. Completely distinct from viruses and viroids in structure, composition, and mechanism of infection.



You've Learned the Theory.

Now Let's Test It.

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Jump in while the concept is still fresh in your head

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