

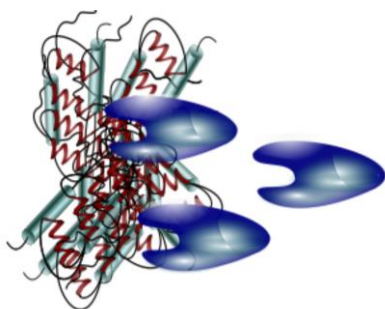


NovaUCD

Technology Licensing Opportunity

# Novel Protease Technology for Protein and Prion Destruction

- Controlling a silent global healthcare challenge



## Opportunity:

There is a continuing concern over the potential to transmit prion diseases, such as CJD, in the hospital sector through contaminated instruments. Some of the methods proposed to eliminate prion contamination from equipment, once there is a suspected case, are not suitable for many delicate devices, including exposure to NaOH (1M), sodium hypochlorite solution (20,000ppm of available chlorine) or high temperature porous load autoclave. As a result, there is a continuous search for decontaminants that can work under mild conditions, lacking high temperature or alkaline processing, but also have the potential of incorporation into daily use in current practises in the hospital sector to mitigate against transmission. For the agricultural sector prevention of resurgence of *Bovine Spongiform Encephalopathy* (BSE), the prion disease linked to CJD is needed, as is the halting of the spread of *Chronic Wasting Disease* (CWD) of Elk and Deer.

The prion agent is a protein aggregate that is difficult to destroy. UCD researchers undertook an extensive screening programme to identify proteases that could breakdown this protein. The team identified new microbial proteases capable of degrading the prion protein under mild conditions, these enzymes have the potential to be adapted for decontamination practices under mild conditions and routine use.

## Applications:

In mild decontamination practices in both the hospital and agricultural sector, and in routine use and for environmental use e.g. use in soils.

## Key Features/Advantages:

- The proteases degrades prion infectivity under mild and neutral pH range conditions.
- Ability to be added at the bedside or to instrument washing procedures.
- The proteases pH activity range means they could also be used along with alkaline detergents to improve their activity.
- The proteases have been recombinantly produced via a technology that should have low regulatory hurdles.
- The proteases have been produced using verified low-cost production medium, and fermenter conditions that can be used in an industrial setting for protease production (1.0 to 5.0 g/liter of the proteases).

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## Value Proposition:

New class of enzyme for the decontamination of prions. Uniquely these enzymes decontaminate the prion under mild conditions.

## Market:

Applications in protein destruction, prion decontamination in medical, agricultural and environmental sectors.

## Lead Inventor:

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## IP Status/Publication:

National filings in US  
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