

RT-QuIC for CWD and other prions



Standardized reagents for consistent results

Minimizes variability between individuals or labs
Little optimization required



Reagents are ready-to-use

No filtration or centrifugation required
Less handling leads to less opportunity for human error
Saves time



Maximal sensitivity with minimal spontaneous protein conversion

Sensitive detection in many sample types
Reduces risk of false positives

Test Performance

Inter-laboratory reproducibility

Two-year study using rectal biopsy samples from elk ¹

Excellent agreement among 5 participating laboratories performing RT-QuIC

Early antemortem detection of CWD prions

RT-QuIC and IHC performed on serial biopsies from experimentally infected white-tailed deer ²

CWD prions detected an average of 4 months earlier in tonsil biopsies and 3.7 months earlier in rectal biopsies with RT-QuIC

All deer with positive RT-QuIC results became IHC-positive

samples

Kappa

Year 1

387

0.92

Year 2

315

0.89



Other features

- ✓ Same homogenization techniques as ELISA
- ✓ Removal of normal prion protein not required
- ✓ Ability to test sample types not feasible with IHC
- ✓ Can be used on formalin-fixed tissue ³

Learn more at vrrd.com/cwd-rt-quic-reagents

RT-QuIC Amplification Reagent

CATALOG #: RTQUIC-CWD-AR

Store at -80°C

- Contains 1.25 mL per tube (enough for half of a 96-well plate)
- Composed of Syrian Hamster recombinant PrPc amino acids 90-231
- Shown to effectively identify abnormal prion proteins associated with numerous diseases in multiple species, including CWD, scrapie, BSE, FSE, vCJD, and sCJD

5x RT-QuIC Reaction Buffer

CATALOG #: RTQUIC-CWD-RB

Store at -20°C

- Contains 1 mL per tube (enough for half of a 96-well plate)
- Composed of 5x PBS pH 7.4, 1.6 M NaCl, 5 nM EDTA, and 50 µM thioflavin T
- Prefiltered and ready to use

10x Sample Dilution Buffer

CATALOG #: RTQUIC-CWD-DB

Store at -20°C prior to dilution and
at room temperature after dilution to 1x

- Contains 1 mL per tube
- Composed of 1x PBS +1.0% SDS
- Must be diluted 10-fold with reagent-grade water before use
- Used after sample homogenization to obtain the final dilution of sample for an optimal RT-QuIC reaction.

Recommended Sample Dilutions:

Brain: 10⁻⁴

Lymph node: 10⁻³

RAMALT tissue: 10⁻²

Other tissues or organs: 10² to 10³

Feces, urine, and saliva: Concentration methods should be used for effective prion recovery.^{4,5}

CSF: See literature for optimal SDS concentration and dilution.^{6,7}

References

1. Haley NJ, et al. Cross-validation of the RT-QuIC assay for the antemortem detection of chronic wasting disease in elk. *Prion*. 2020;14(1):47-55.
2. Henderson DM, et al. Progression of chronic wasting disease in white-tailed deer analyzed by serial biopsy RT-QuIC and immunohistochemistry. *PLoS ONE*. 2020;15(2):e0228327.
3. Hoover CE, et al. Detection and quantification of CWD prions in fixed paraffin embedded tissues by real-time quaking-induced conversion. *Sci Rep*. 2016;6:25098.
4. Henderson DM, et al. Rapid antemortem detection of CWD prion in deer saliva. *PLoS ONE*. 2013;8(0): e74377.
5. Henderson DM, et al. Longitudinal detection of prion shedding in saliva and urine by chronic wasting disease-infected deer by real-time quaking-induced conversion. *J Virol*. 2015;89(18): 9338-9347.
6. Green AJE. RT-QuIC: a new test for sporadic CJD. *Pract Neurol*. 2019;19:49-55;7
7. Groveman BR, et al. Rapid and sensitive RT-QuIC detection of human Creutzfeldt-Jakob disease using cerebrospinal fluid. *mBio*. 2015;6(1):e02451-14