Clinical Directorate of Laboratory Medicine, Beaumont Hospital					
Doc No:	LI-NCJD-RTQuIC Instructions	**Revision**	1	**Active Date**	30/11/21

Cerebrospinal fluid (CSF) for RT-QuIC Analysis: Sample suitability & transport instructions

The Real-Time Quaking-Induced Conversion (RT-QuIC) assay is highly sensitive (92%) and specific (100%) for the clinical diagnosis of sporadic Creutzfeldt-Jakob disease (CJD)[1].

Please notify the Neuropathology Dept. (01 8092633) when a CSF is to be sent.

Samples must reach Neuropathology, Beaumont Hospital between 9am and 4pm.

1. SAMPLE SUITABILITY

- Sample Type: Cerebrospinal fluid (CSF). **Blood samples are NOT suitable.**
- Volume CSF: 1 - 2ml.
- Sample appearance: Must be clear and colourless (**not blood stained**) with a white cell count of <10x10^6/L and have a total protein concentration of <1 g/L[1]. Red blood cells (>1250 x 10^6/L) inhibit the RT-QuIC response resulting in false negatives[1]. High CSF total protein concentrations of >1.0 g/L and raised white blood cell counts can result in false positives[1].

Referral Form (LF-NCJD-CSFQuestions) must accompany the sample.

CLINICAL & MRI DETAILS MUST BE INCLUDED ON THE REQUEST CARD

2. SAMPLE STORAGE

- CSF must be frozen at -70°C within 30 minutes of aspiration and transported to the Neuropathology Dept, Beaumont Hospital **on dry ice**.
- If freezing at -70°C is not possible, please contact us to discuss. Sub optimal sample storage may give unpredictable results.
- CSF spun for cell count may be used for RT-QuIC analysis provided it was stored under the appropriate conditions.

3. SAFETY

- CSF is considered to be a low risk sample for all types of Prion Disease[2]. Take appropriate precautions when sampling.

[1] *Green AJE, RT-QuIC: a new test for sporadic CJD, Pract Neurol 2019;19:49–55.*

[2] *Protocol for Reporting and Management of cases of CJD and other TSE or of a person at increased risk of TSE, ISBN - 978-0-9565622-7-2.*

4. TRANSPORT OF FROZEN CSF SAMPLES

NB: Label all packaging prior to removing the sample from the freezer!

- **PACKAGING REQUIREMENTS:**

Frozen CSF samples (transported on dry ice) are classified as UN3373, Biological Substance Category B, Class 6.2 and must meet the requirements of Packing Instruction P650 when transported by road as follows:

Layer 1: Securely tightened specimen container is placed in a sealed biohazard bag.

Layer 2: This is then placed into a pre-cooled, leak proof and break-resistant Biojar designed for specimen transportation with an absorbent pad.

Layer 3: Place the Biojar into labelled outer package. Include 1) Emergency response information sheet & 2) LF-NCJD-CSFQuestions request form.

Layer 4: Place into a polystyrene box filled with dry ice.

Layer 5: Place into a pre-labelled fibreboard box clearly labelled as per Diagram 1.

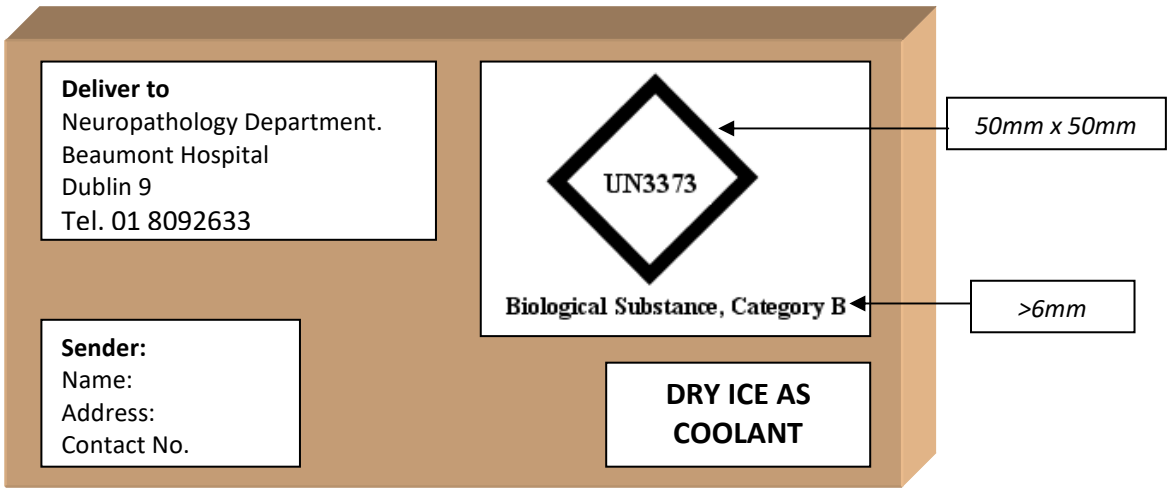

Diagram 1: Labelling requirements for frozen CSF transport by road.

Please notify the Neuropathology Dept. (01 8092633) when a CSF is to be sent.

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EMERGENCY RESPONSE INFORMATION

- The goods being transported are classified as UN3373, Biological Substance, Category B.
- There is no immediate hazard to health unless the sample is ingested or injected into the body.
- In the event of accidental leakage of the sample please contact Neuropathology, Beaumont Hospital. Telephone no. 01 8092633.
- Disposable gloves must be worn before attempting to handle the material.
- Dry Ice Precautions: Dry ice in poorly ventilated areas can result in depletion of the oxygen level resulting in asphyxiation. Insulated cryogenic gloves and eye protection must be worn when handling.