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Protocol status: In development
We are still developing and optimizing this protocol

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Tissue sampling from museum specimens of mitten crabs

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ABSTRACT

Simple protocol for sampling tissues from mitten crabs housed in natural history collections. Mitten crabs are somewhat unique because they have hair on their chelae from which DNA can be extracted. However, the protocol could also be used for other crabs (I am providing a few possible tissue sampling sites).The tissues are intended to be used for DNA extraction and museomic / genomic studies. The protocol is aimed at limiting contamination and specimen destruction while allowing reasonable throughput.

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1 Clean all surfaces with DNAaway

2 Flame forceps and scalpel

3 Open collection jar

4 Take out one specimen

5 Place in clean tray with scale (e.g. ruler). Take first picture of the collection metadata (the jar label) and then picture of the crab. This way you can trace back which crab you photographed

6 Chose the tissue extraction site: leg that had already fallen off (1), muscle tissue from leg (2), hair from the chela

6.1 If legs have already fallen off the crab and are at the bottom of the jar, place it or a part of it in a 1.5ml Eppendorf tube

6.2 Cut a small window (5x5mm) in the ventral side of a walking leg with the scalpel and remove muscle tissue using forceps. Place in 1.5ml Eppendorf tube

6.3 Remove hair from 1/4 of one chela with scalpel, use forceps to hold hair and place in 1.5ml Eppendorf tube

7 Top off tube with the ethanol from the collection jar. Label with collection code (abbreviation of the collection, e.g. ZMH) and consecutive number (e.g. 01, 02, 03). Add collection information in spreadsheet. Make sure to link sampling ID (e.g. ZMH01) and collection ID (e.g. Cr24103) in spreadsheet.

8 Proceed to protocol: pH and formaldehyde measurement