**>putative\_LINE-like\_transcript\_greenland\_shark\_LIVER**

GAACCAAGAGCCTGTGAGAGAAAGAGAAAGATAAACCTTTAAGAGCAGCTATATCAAAGATGAACCCCTGAAAAACTCCCAATTTTGGACCTAAAAGTGGGCTAAGGTGGAACACGACACAAAAAAGAGAAAAAAAAAAAGTTATCTATCTGAGACAAAAAACAAACGACTACAATGAGCAGGGAAATGATATATCCTGAGCAATGCACAAAAAATAAAGCAAAGGAAAAATACAAGTACACAACACTAAAAAATAACCCAGAGATCCTCTACGTTGACTATACCACACACAAAGGGACTAAGCTGAAGAACAACCTCATATTCTACACCGAATACGTCACCTCCTGGAAGGAGACTTTACAAAAACACTACGCATACGTCTCCAGTGAAGGTATTGGCAGTGGAGGCAGACTGAAAATATGTAAAGATGGAAACCTAGATAAAGATGACCCCCTGCTAACCATAAGCTACTACAACAAAAATAGAAAGATCATGATACAGGGGAATGTGGAAAATCTGGACTCCTTCGAAAAGGAATTCCCCCAGTTGAAAACTAAGGCAGACACAAAGAGGACCAATGGACAGGAGGCAAAAGAGAATCGAACAGAGGATGATGAGAGCCAAGCGGAGGAAGAAGAAGAGAGTCCAGCAGAGACACACACCTCCCTGACCATCTCCACCCCCCCCACACCTCTCAACGCAAACAAACTGCTGAAGGAGAATCTGTCCAAACTAGAACTCGATTTCAACGAATACAGGGAAACACAGGCCAAGAATTTGAAGGAGGAACTCAAACAGCTGAAAACGGAAAACGAGTCCACCATCCACGAGTTGAGAAAGATCGTAGAGGAGCAAAGAAATGAGATCAAAGAACTCCGTACTCAACTAAAAAAAGGGAAGGAGACCGTAGAAAGGCTCAGCAGGCAACACAAACCTCTTAAGGTCCAAAAACCTGAGGACACAAAAACAACACACACAAGGACACAGAACCCGCCGGATGCCACCCCACACGAAGACACACCGAAAGCCACAAACCCCGCTCCAACCAGCCCTCAGTCGAGTCATGCCCAGACTACTGCTACCCAGTCCTCACACACAGGAACACAAAAACCGACAGATACCCCCCCAAACGAGGACACACCGAAAGCCCCAAACCCCGCTCCTGCCACACAACATATCCCAGAAACCCAGCCAACAACCAGCCACCAGGCGAGTCCTACCCAGACTACTGTTACCCAGTCTGAAAAACCAGCCCCTCAGGCGGTCCTGCTGACCGACTCCAACGGAAAGTTTCTGGACCCCCAGAGGCTGTTCCCAGACCATCAAGTCCTGAAAAAATGGTGCAGCAACACAGACCAAGCAATGAAGATCCTGAACAAAGAATCCCTTGGAAGCCCCAAATGGATTGTGATCCACACAGGCACGAACGACCTACGCACCCTACAGGAAGGCACTGCTAGGGCGGTGAGCAGGATGGCGGAAAAGGCCAGCAGGGAATTCCCCGAGGCGCGGATCGTGATCTCCACACTACTGCCCAGAAAGGACACCCCAGCCTATATAATCCACAACACCAACAGGGAGATCGACACGAGATGTTCTGTCTTCCCCAACGTCTACCTGGCCCATCATCCAAACATCAACACAAGGGACCTCTATGACGAAATACATCTACTCAAACAGCGGATGTGGGTCTTCGCAAGAAACCTCATAAACACTGCCAAAAGACGCAGCCCTCCCACCCCCTCTACCATTGGGAGCCGTAACCCAAACAGGACCACCAATGTCCCCCACCCCCCTTTACAAAACCAACAACAGAACCGTGCTTTTATACCTGACCCAAGACCCCCCTCTAGACCACAGACTGTAGACCAAGAACTGAGAAAGATCATGACGATGCTGAACAGCCTGATAGAAAGCCGGAGAAATTATTAATATTGTTATTTATCATTATCATTATTGTTATCTTATCAGTATTATTACTATTATTAGATAGATATATGTGCATGCCTCATGAAATTTATACTAAATCATCATTTAGCATTATAGAAAATAGTGTTTCCACACTCATCCCACAAAATAGGTCCATTTTATTTCGTTTTATTGAACTATATAAATGCGTTCTTTCCACATAAGCTGCTGGAATATCCAGGGCCTCCGCTCCTCAACTTTTGGGATGAAGAGTACAGACCCTGAATTCCTAAAAGCTATAAAAGACATTGATATAATTGTGTTAACAGAAACATGGTGCCAAAAGGACATGCCGACCCACTGTCCTCCAATGTACCATGAAATCATTGTGCCCTCAGTAAAGAACACTAAAACACGCAAGGGCAGAACCTCCGGGGGAATATTGGTGTGGTATAAGGGAGAACTGGACAAACACATCTCACCGGTAAAACAGGGAAAATCACACGTATGGCTAAAACTAGATAAAAATATAGGAATAGCAAAAAAAGATGTTTACTTATGTGCGATCTACATACCTCCAATAGATTCGCCATATTTCGAAGAGGAGTTATTTGATACTCTCCACATGGAAATCAGCCATTTCCAGGCCCAAGGAAAGGTGCTACTATGTGGGGACCTAAATGCAAGGACCGGTTGTGAACCTGACTTCATAGACCCACAGGGAAACAACCATGTGTTTGGCCAGACCCCTTTAGATGTCACACCAGCCATCGCAAATCGGAACAACCTTGATCGTGAAATAAATAAAAGCGGTAGGGAGGTAGTGCAACTCTGCCGAGCCTTAGGCCTGTACATAGTTAACGGTAGGTTCAGAGGGGACTCCCTAGGGAGACTCACATACTCCTCAACTCTTGGGTCTAGTGTGGTGGACTATACAATCACTGACCTGGACCCCTGCGATATCAACGCATTCACTGTCAGGCAGCAATCCCCCCTCTCAGACCATAACCAAATAAATGTGTACCTTAAACTTTCTGCCCAAACTACAGACACAAAAAAGGAACCCAGTAAGCTACATAAAATAAACCAGACATACAGATGGGCCCCAGACAGTGGAGATAAATTCATCACAGCACTAAATTCACCTGATCTCACAAGTAAAATTTCAAAATTTAAAGAAAATCTATATGAGATCACCAGAGATGGTGTAAACATGGCCATAGAGGATATAAATATGATCTTCCATGAGGCAGCTGTAAAAGCCGACCTTGTGAAACAGAAGAGGAAGCGTCACAAAAGACAAAATAAAAATAAGAAATGGTTTGACCACGAATGCAAAAATGCCAGAAAAGACCTGAGAAAAATATCAAACCAAAAGCATCGGCAACCAAACAATCCGGACCTACGTACTAGATACAATGAAACCCTCAAAAGATATAAACACACCATTAGGAACAAAACACAAAACTATACCCACAAAATACTCGAAGAAATTGAAAACTCCACCAATCCAAAACAATTCTGGGAAATGTGGAATAACCTGAGTACAACACAATTGCAAGCATTACCAATCCAAGATGGCGACATCTGGAGAACACATTTTGAAAACCTCTACAAAGACATCCCAATAAACGAAACAAACCCAAGTCAACATCAGGTCACAGAAAAACTCCACACATTAGAAGCAACAATTAAAGACAACCAAAACCCTCTAGACTCCCCAATCACATGGAAAGAACTGGCCACAAAAACAAAATCTCTCCACCTAAAGAAAGCCTGTGGCCCAGACAACATCAAAAATGAAATGCTCAAGTTCAGCAATATGGAGATGCAGGGTGCGGTACTCAAATTATTCAACATCATATTACGTTCAGGCTGTTTTCCCGATATCTGGTGCCAAGGACTAATCTCCCCCATATATAAAAGTGGAAACAAATCAGACCCAAATAACTACCGCGGCATCTGTGTCAACAGTTGTCTAGGGAAGTTATTCTGCAGTATTCTAAATAGTAGATTACTTGATTTTCTTAACAAACATAATATCCTCAGAAAAAACCAAATAGGCTTTCTTCCAAAACACCGCACCGCCGACCATATCTATACCCTTCACACCCTCATTGAAAAACATATACACCAAACAAAAAATGGGAAAATATTCGCCTGTTTCATCGACTTCAAGAAAGCCTTTGACTCTATATGGCACGAAGGGCTCTATTATAAACTTCTTCAGTGTGGAATAGGGGGCAAAGTCTATGACCTTATTAAATCAATGTATCTGAAAAACAAATGCGGGGTCAAAATTGGAGACAAACGCACCGATTTCTTCACCCAGAGAAGAGGCGTCCGGCAGGGCTGCAATTTGAGCCCGACCCTGTTCAACATATACATAAATGAATTAGCAGACATGCTGGAGCAAAGCGAGTCACCAGGTCTCCGTCTCCTGGATGGAGAAGTGAAGTCCCTGTTCTATGCGGACGACCTGGTTCTGCTGTCTCCCACAGAACAGGGATTACAGCAACAACTAGACCTACTCGACAAATACTGCCAAAATTGGGCTCTAACAGTAAATCTAAAGAAAACCAACATCATGATTTTTCAGAAAAGACCCAGATGTCAGGAAAACAAATACCAGTTTACCCTCAGTGATACCACTATAGGACACACTATGAGCTACACCTACCTTGGTCTAACTATTACAGCATCAGGGAGCTTCAGCATAGCAGTGAATGCACTAAAAGAAAAAGCCCGAAGAGCCCTATATGCAATAAAAAGAAAATTCTACAACATCCAAATCCCAATCAAAATCTGGCTCAAAATATTTGACAGCATAATCCTGCCCATTGCACTGTACGGTAGTGAAGTATGGGGCCCGCTAAATCACCAAAGCTACACTAAATGGGAAAAACACACAATAGAAGCCCTACATGCAGAATTCTGCCGAAGCATCCTTCGCACCCAAAGAAAAACGCCAACAAATGCATGCAGAGCCGAACTAGGCAGATACCCACTGATAATAAACATCCAAAAACGAGCACTAAACTTCCTAAATCACCTCAAATCTAGCTCCCCAGACACCCTTCATTTCAAAGCCTTTCAGACCCAAGAGCTAAACCCAGAAAAGAGTCCCCTGAGTCAGCTGCTACTGAAACTAAGTACTCAGCCGGACCCTGACCAGCCCCAGACCAACACAGCCGTCCAAACACCAATCCGAGTGAACCAAATCATTAAACAATGCAAAGAAACCTACCTGGAACATTGGAACAAAATAACCGAAAGCCAAAGCAGATTAGAATGTTACCGGGCCCTAAAAAGAGAATATAAACTGGCAGACTACCTCACGACCATCAGAGACACAAAACAGAGACAGACCCTCACCAGGTACAGACTAAGCGACCACCAACTGGAAATTGAAAAAGGCAGATACAAGAAATCCTGGCAGCCTAGAGAGAATAGAATATGCGATCAATGTCTGGCTGGCGAGGTTGAAACAGAAATGCATTTCCTCCTAAAATGCGAAAAATTCAACACATCAAGAAACATATTATTCAACAAGCTAAGCCAAACAACCCCAGATTTCAAGGAATTGGATGACCTGTCAAAATTGAGATTAGTCCTGGGAGAAGGAGACAGACCATACCTTGGGGCCAAATATGTAACAACATGTCACAACCTGAGGACTGTTTAAAAGTAAGACTGTTTAAAATTAATATTGAACGTACCAAATGAAGTACAAAGACTGTTTAAAATTAATATTGTTTAAAAGTAATATTGTATGTACCCAACAAATGTCAAATCGATTGACACCTACAGAATGTTGGAAAACTGTACCTTTTTGCTATGTAAGCTTTGGCAATATGGTTCTCTGTAAACTTTCATGCCAATAAAGCATTTGAATTGAATTGAATTGAATTGAATTGAGAGAGAGAGAGAGAGAGAGAG

**>putative\_LINE-like\_transcript\_greenland\_shark\_MUSCLE\_reverse complement**

TGGACAGGAGGCAAAAGAGAATCGAACAGAGGATGATGAGAGCCAAGTGGAGGAAGAAGAAGAGAGACCAGCAGAGGAAAACACCTCCCTGTCCATCTCCACCCCCCCCACACCTCTCAACGAAAACAAAATGATGAAAGAGAATCTGGCCAAACTAGAACTTGATTTCAACGAATACAGAGAAACACTGGCCAAGAATTTGAAGGAGGAATTCAAGCAGCTAAAAACGGAACACGAGTCCAACATCCACGAGCTGATGAAGACTGTAGAGGAGCAAAGAAATGAGATCAAAGAACTCCGTACTCAACTAAAAAAAGGGAAGGAGACCGTAGAAAGGCTCAGCAGGCAACACAAACCTCTTAAGGTCCAAAAACCTGAGGACACAAAAACAACACACACAAGGACACAGAACCCGTCGGATGCCACCCCACACGAGGACACACCGAAAGCCACAAACCCCGCTCCTGCCACACAGCTCACCACAGAAACCCAGCCAACAACCAGCCCTCAGTCGAGTCCTGCCCAGACTACCGCTACCCAGTCCTCACACACAGGGACGCAGAACCCGTCAGATGCCCCCCTCAAACCCCGCTCCTGCCACACAACATATCCCACACGAGGACACACCGAAAGCCACAAACCCCGCTCCTGCCACACAGCTCACCACAGAAACCCAGCCAACAACCAGCCCTCAGTCGAGTCCTGCCCAGACTACCGCTACCCAGTCCTCACACACAGGGACGCAGAACCCGTCAGATGCCCCCCCACACGAGGACACACCGAAAGCCTCAAACCCCGCTCCTGCCACACAACATATCCCAGAAACCCAGCCAACAACCAGCCATCAGTCGAGTCCTGCCCAGACTACTGCTACCCAGTCTGAAAAACCAGCCCCTCAGGCGGTCCTGCTGACCGACTCCAACGGAAAGTTTCTGGACCCCCAGAGGCTGTTCCCAGGTCATCAAGTCCTGAAAAAATGGTGCAGCAACACAGAACATGCAATGAAGATCCTGAACAAAGAATCCCTTGGAAGCCCCAAATGGCTTGTGATCCACACAGGCACAAACGACCTACGCACCCTACGGGAAGGCACTGCTAGGGCGGTGAGCAGGATGGCGGAAAAGGCCAGCAGGGAATTCCCCGAGGCGCGGATCGTGATCTCCACACTACTGCCCAGAAAGGACACCCCAGCCTATATAATCCACAACACCAACAGGGAGATCGACACGAGATGTTCTGTCTTCCCCAACGTCTACCTGGCCCATCATCCAAACATCAACACAAGGGACCTCTATGACGAAATACATCTACTCAAACAGCGGATGTGGGTCTTTGCAAAAAACCTCATAAACACTGCCAAAAGACGCAGCCCTCCCACCCCCTCTACCATTGGGAGCCGTAACCCAAACAGGACCACCAATGTCCCCCACCCCCCTATACAAAACCAACAACAGAACCGTGCTTTTATACCTGACCCAAGACCCCCCTCTAGACCACAGACTGTAGACCAAGAACTGAGAAAGATCATGACGATGCTGAACAGCCTGATAGAAAGCCGGAGAAATTATTAATATTGTTATTTATCATTATCATTATTGTTATCTTATCAGTATTATTACTATTATTAGATAGATATATGTGCATGCCTCATGAAATTTATACTAAATCATCATTTAGCATTATAGAAAATAGTGTTTCCACACTCATCCCACAAAATAGGTCCATTTTATTTCGTTTTATTGAACTATATAAATGCGTTCTTTCCACATAAGCTGCTGGAATATCCAGGGCCTCCGCTCCTCAACTTTTGGGATGAAGAGTACAGACCCTGAATTCCTAAAAGCTATAAAAGACATTGATATAATTGTGTTAACAGAAACATGGTGCCAAAAGGACGTGCCGACCCACTGTCCTCCAATGTACCATGAAATCATTGTGCCCTCAGTAAAGAACACTAAAACACGCAAGGGCAGAACCTCCGGGGGAATATTGGTGTGGTATAAGGGAGAACTGGACAAACACATCTCACCGGTAAAACAGGGGAAATCACACGTATGGCTAAAACTAGATAAAAATATAGGAATAGCAAAAAAAGATGTTTACTTATGTGCGATCTACATACCTCCAATAGATTCGCCATATTTCGAAGAGGAGTTATTTGATACTCTCCACATGGAAATCAGCCATTTCCAGGCCCAAGGAAAGGTGATAATATGTGGGGACCTAAATGCAAGGACAGGATGTGAACCTGACTTCATAGACCCACAGGGCAACAACCATGTGTTTGGCCAGACCCCTTTAGATGTCACACCAGCCATCGCAAATCGGAACAACCTTGATCGTGAAATAAATAAAAGCGGTAGGGAGGTAGTGCAACTCTGCCGAGCCTTAGGCCTGTACATAGTCAACGGTAGGTTCAGAGGGGACTCCTTAGGGAGACTCACATATTCCTCAACTCTTGGGTCTAGTGTGGTGGATTATACAATCACTGACCTGGACCCCTGCGATATCAACGCATTCACTGTCAGGCAGCAATCCCCCCTCTCAGACCATAACCAAATAAATGTGTACCTTAAACTTTCTGCCCAAACTACAGACACAAAAAAGGAACCCAGTAAGCTACATAAAATAAACCAGACATACAGATGGGCCCCAGACAGTGGAGATAAATTCATCACAGCACTAAATTCACCTGATCTCACAAGTAAAATTTCAAAATTTAAAGAAAATCTATATGAGATCACCAGAGATGGTGTAAACATGGCCATAGAGGATATAAATATGATCTTCCATGAGGCAGCTGTAAAAGCCGACCTTGTGAAACAGAAGAGGAAGCGTCACAAAAGACAAAATAAAAATAAGAAATGGTTTGACCACGAATGCAAAAATGCCAGAAAAGACCTGAGAAAAATATCAAACCAAAAGCATCGCCAACCAAACAATCCGGACCTACGTACTAGATACAATGAAACCCTCAAAAGATATAAACACACCATTAGGAACAAAACACAAAACTATACCCACAAAATACTCGAAGAAATTGAAAACTCCACCAATCCAAAACAATTCTGGGAAATGTGGAATAACCTGAGTACAACACAATTGCAAGCATTACCAATCCAAGATGGCGACATCTGGAGAACACATTTTGAAAACCTCTACAAAGACATCCCAATAAACGAAACAAACCCAAGTCAACATCAGGTCACAGAAAAACTCCACACATTAGAAGCAACAATTAAAGACAACCAAAACCCTCTAGACTCCCCAATCACATGGAAAGAACTGGCCACAAAAACAAAATCTCTCCACCTAAAGAAAGCCTGTGGCCCAGACAACATCAAAAATGAAATGCTCAAGTTCAGCAATATGGAGATGCAGGGTGCGGTACTCAAATTATTCAACATCATATTACGTTCAGGCTGTTTTCCCGATATCTGGTGCCAAGGACTAATCTCCCCCATATATAAAAGTGGAAACAAATCAGACCCAAATAACTACCGCGGCATCTGTGTCAACAGTTGTCTAGGGAAGTTATTCTGCAGTATTCTAAATAGTAGATTACTTGATTTTCTTAACAAACATAATATCCTCAGAAAAAACCAAATAGGCTTTCTTCCAAAACACCGCACCGCCGACCATATCTATACCCTTCACACCCTCATTGAAAAACATATACACCAAACAAAAAATGGGAAAATATTCGCCTGTTTCATCGACTTCAAGAAAGCCTTTGACTCTATATGGCACGAAGGGCTCTATTATAAACTTCTTCAGTGTGGAATAGGGGGCAAAGTCTATGACCTTATTAAATCAATGTATCTGAAAAACAAATGCGGGGTCAAAATTGGAGACAAACGCACCGATTTCTTCACCCAGAGAAGAGGCGTCCGGCAGGGCTGCAATTTGAGCCCGACCCTGTTCAACATATACATAAATGAATTAGCAGACATGCTGGAGCAAAGCGAGTCACCAGGTCTCCGTCTCCTGGATGGAGAAGTGAAATCCCTGTTCTATGCGGACGACCTGGTTCTGCTGTCTCCCACAGAACAGGGATTACAGCAACAACTAGACCTACTCGACAAATACTGCCAAAATTGGGCTCTAACAGTAAATCTAAAGAAAACCAACATCATGATTTTTCAAAAAAGGCCCAGATGTCAGGAAAACAAATACCAGTTTACCCTCAGTGATACCACTATAGGACACACTATGAGCTACACCTACCTTGGTCTAACTATTACAGCATCAGGGAGCTTCAGCATAGCAGTGAATGCACTAAAAGAAAAAGCCCGAAGAGCCCTATATGCAATAAAAAGAAAATTCTACAACATCCAAATCCCAATCAAAATCTGGCTCAAAATATTTGACAGCATAATCCTGCCCATTGCACTGTACGGTAGTGAAGTATGGGGCCCGCTAAATCACCAAAGCTACACTAAATGGGAAAAACACACAATAGAAGCCCTACATGCAGAATTCTGCCGAAGCATCCTTCGCACCCAAAGAAAAACGCCAACAAATGCATGCAGAGCCGAACTAGGCAGATACCCACTGATAATAAACATCCAAAAACGAGCACTAAACTTCCTAAATCACCTCAAATCTAGCTCCCCAGACACCCTTCATTTCAAAGCCTTTCAGACCCAAGAGCTAAACCCAGAAAAGAGTCCCCTGAGTCAGCTGCTACTGAAACTAAGTACTCAGCCGGACCCTGACCAGCCCCAGACCAACACAGCCGTCCAAACACCAATCCGAGTGAACCAAATCATTAAAAAATGCAAAGAAACCTACCTGGAACATTGGAACAAAATAACCGAAAGCCAAAGCAGATTAGAATGTTACCGGGCCCTAAAAAGAGAATATAAACTGGCAGACTATCTCTCGACCATCAGAGACACAAAACAGAGACAGACCCTCACCAGGTACAGACTAAGCGACCACCAACTGGAAATTGAAAAAGGCAGATACAAGAAATCCTGGCAGCCTAGAGAGAATAGAATATGCGATCAATGTCTGGCTGGCGAGGTTGAAACAGAAATGCATTTCCTCCTAAAATGCGAAAAATTCAACACATCAAGAAACATATTATTCAACAAGCTAAGCCAAACAACCCCAGATTTCAAGGAATTGGATGACCTGTCAAAATTGAGATTAGTCCTAGGAGAAGGAGACAGACCATACCTTGGGGCCAAATATGTAACAACATGTCACAACCTGAGGACTGTTTAAAAGTAAGACTGTTTAAAATTAATATTGAACGTACCAAATGAAGTACAAAGACTGTTTAAAATTAATATTGTTTAAAAGTAATATTGTATGTACCCAACAAATGTCAAATCGATTGACACCTACAGAATGTTGGAAAACTGTACCTTTTTGCTATGTAAGCTTTGGCAATATGGTTCTCTGTAAACTTTCATGCCAATAAAGCATTTGAATTGAATTGAATTGAATTGAGAGAGAGAGAGAGACTAGAGCAGGGCCGGGGAGAGAGAGAGAGAGAGAGAG

**Supplementary material 7:** Longest LINE-like transcript sequences identified in the liver (top) and muscle (bottom) tissues of Greenland shark. ORFs are highlighted in green and identified direct repeats in other colors. For direct repeat searching, the Repeats Finder tool accessed from <https://www.novoprolabs.com/tools/repeats-sequences-finder> was used, the minimum length of the repeated sequence was set to 9, and no mismatches were allowed.