

## SUPPLEMENTAL RESULTS

**Supplemental table 1:** Table listing sequences of all smFISH probes used in this study.

(☼) denotes the position of the fluorophore in the sequence.

Probe name	mix	Sequences (☼5' → 3')
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<i>gcl</i> mRNA 48 probes Quasar670	gatcccactattgacccat, ctacagcgacgttcatatgca, aaagatgaatcagtgctgcg, tttttgggctgagtggtg, ctgggtgtagtaagaagtt, tgaagagcgcttctgatatg, acatccgagttctttcctc, cttatccagagccatgacag, tacaccttatgcaggtgcca, gaagatggactctggctca, cacgtcccattgaacatag, atgaaattctgctgggcttc, gtcgtccaggattgtgatct, atggaaccaaagacagcatc, cgatttcgatctcatcggaa, accgagataaacatctgctga, ttccgtctaagtgaacaac, atgttatccaccatcacctc, aatactggatagctgtctcc, aaaggtggacttcttgactc, agcagattgatctggaacca, caggttcgggtgcttactat, atcagctcaatggagatgtg, tcacatacaaatcgggactg, tagagtgtacagcgagaact, agtcgtaggaacatccatgt, aaaagctcctgctgtcttag, aaagtatgtccactggacga, aagacctcacataaggctg, gtactgggttcgtagcttct, agatccatgtagtggttggt, gccactccttgggtataata, tggttgtaatgtgcccagata, gatacgtagtaatgcatccc, tacaatcctcctgcccagta, aaagaactgctcatcgtcca, atccatgccaaagttgaagc, aatgttcagctacgcgag, atgaaactgctgttcgtctg, tttatcgaggtcaccgtggt, agaacagatctcggacgttt, ttgggtctaacaccatgag, gcattaccaccagcatggtt, gcattaccaccagcatggtt, tccttgaactctgattcgg, tatggagagagaggtgtcg, ttgctccgatttccgaaatg, tgaaaacggcccgaatcatca
<i>gcl</i> (1 <sup>st</sup> third) 32 probes Quasar670	ggctctccaaatcttttagt, ttatctctgtttgctgacg, catttcaattccgttcgctg, ctgattaggcatgcccgttta, acacgggctaaaattctacg, ttacttggtctgtttcaat, gccgtactttatataacag, actgtaaaactgcagttac, atggctgagcgcaggaattc, catggtatcccactatttgac, acacctcagcgacgttcata, gcttccgcttccgtcgattg, cccaaagatgaatcagtgct, gcgcttgtatgtactgg, ccgagttctttcctcctg, cttatccagagccatgacag, gtacacctatgcaggtgcc, tagaagtatggactctggct, ccacgtcccattgaacatag, atgaaattctgctgggcttc, gtcgtccaggattgtgatct, ccaggctagcaacgggtgatc, tacatggaaccaaagacagc, gctgactcgatttcgatctc, ggccaataccgagataacat, tctaagtggacaacagtgcc, ggcacactgtcgtgatgattc, ccggactaatgttatccacc, tcgtaatactggatagctgt, cacaccgtactggcagggcg, aggtggacttcttgactccg, agattgatctggaaccactg
<i>gcl</i> (2 <sup>nd</sup> third) 31 probes Quasar670	cggttgcttactataaatgc, atggagatgtgcctaagcag, ggtcagggcactcatcagct, ggtcagggcactcatcagct, gcatacacatacaaatcggga, cagtagagtgtacagcgaga, gtcgtaggaacatccatgctg, ctctggatcgtagtcgggat, aaaagctcctgctgtcttag, ctggacgacatcaccactag, agcggctggtaaagtatgct, gccaaagacgagcgttctc, aagacctcacataaggctg, gtactgggttcgtagcttct, gatccatgtagtggttggtc, cttgggtataatattgtca, ttgtgaatgtgccgatacag, acgtagtaatgcatcccag, gaggactacaatcctcctgc, aactgctcatcgtccagctg, gcatcgcagcagttctcaa, caggctcaagcaacatacgt, gtccagcggcacttctggta, atccatgccaaagtgaagc, gcgagtcgatcaggtgatg, gtgccgacgaatgttcagtc, taagcactcgtcgtgctcg, atgaaactgctgttcgtctg, gtttatcgaggtcaccgtgg, gaacagatctcggacggttg, ctgcttctttcgaggctaa, tctaacaccatgagtgccac
<i>gcl</i> (3 <sup>rd</sup> third) 28 probes Quasar670	gagaagtggatgcaccaact, accaccagcatgtttattga, ttgaaactctgattcgggtg, ctgctgagcgggaacaattt, ccgatttccgaaatgggtat, cagcggctgtcgtggttg, gaatcatcagcactggacgg, gctcagagtcaccaatgaaa, gaccaagcagattctgggccg, gattgcgcccgttctgctag, tgctcagcagccagttgct, attggttgggtgactgctc, ctgcccggtaaatgaacaaaa, aaacaactacaacgagcccg, gcgatggcgataaacgaatt, gagtgatcagccgtagctaa, tcgatgtacaaacgctaga, acgattgcggatagcttat, atatagatctgcgcattcca, gcgtcattacatgatactag, ccatttaagttagtgacgta, ggcactagagtgtgctgta, ttgcaacgcctacatattgt, atttcttggccggttttt, aacttgcaggattcgaagac, gggacagtaattacatgctg, ctgtgcgtacattagcag, tgatcactcaaggaatag
<i>nos</i> mRNA 48 probes CAL Fluor 590	ggtaaagctacgcgccaact, acggcaatccaggaatgtt, acttgaacaactgcgaagc, aaaatcgtatgtcccttaga, aaatcgtgacgcagaggcaa, aactaaactcgttttgggt, ttccgatacttcttatct, gcacagtttattcaactgaa, caaatcctcacccaaaaacc, ttatcgcgcactctacttcc, aaatccgggtcgaaagtac, taaacgctgcaaaagctgcc, gctttgatcggaaatgcgtat, ccaggcgtatttaaacgtt, gcacgggataacgctctaaa, agtgatcgttcgttctat, gtttccctttcacagaaaca, gccacgacgattgaacaagt, tcattcatcaactttcgga, aaatgaaggcgaccagttgc, cgaaattttcggccgaag, ttcaaagtgttctttttca, tgatacagattgacagttcga, ctgctatttcttttagcaa, acaatgaatgcgtagccgac, tactcttcgcttatctatca, gcgggtgttcatgtgtgaa, cgagccattgaattttcat, aaccttctttatttggca, tccaagtgtcgcggaacat, tccttggcgtgaaaagcag, tgcaggcccagaatgttgag, ccactggtatccaaatacat, gtaatggcggactcaaagt, tcggccagaaaaggggaagt, cataaggagcgaattggcgg, caagtggtagtggtactgtc, ttgctggtgactcgcactag, aaggatcgcgcaatctcgtc, cgtaacctgcgcaaagatt, catagccattggtcgcgaac, taggacatgcgaccgagatc, cattaagttgcccagcattgg, agtgggtggcgagtggaatg, cacacgtgttcagatgctc, ggctggtatatacagatgt, ctgcaaacccattgtattgg, cgagattgggtgacacagtg
<i>osk</i> mRNA 48 probes CAL Fluor 590	cgcgacggatataatggtg, cacctcactatctatcgg, atatcgtgattccattctg, cgatattcactcttgatgct, tgcagtggaatggattgcc, caggaaatccgtcacgtgtg, cagcgggtcacattgggaatg, tcgcttccaggtggaagatc, aggaggtgaccgttctcag, tttctggtgagcaccat, tatgttctccagggacggag, gtttgaagggttctccag, ggtgtcagctgggacagag, cttttcatccgttatctgg, catttgatcagcgaaccg, agatgcttccaattatcctg, ggcttgcgtgtagaaattgt, gcatttttggcgcatttacg, gctgtagatgttgatgggta, caggtggagccaaattgatt, ttttctgcttgggttctg, caaatggcggtttctcagtc, gccgttfaatggatgcacaa, tggcgtcttctcattatgtt, gttaaaatcgttggcgtggg, agaatcgtttaggttccac, aatccgagttaatcgtcagc, aagtcagcagatagggatc,

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<p><i>gcl</i> red 45 probes Quasar 570</p>	<p>tccaaatcttttagttatgg, ttccgttcgctgcaatttt, aattctacgagctgctgatt, cggtcactggcttcgtttca, gagcgcaggaattcttact, cagcgacgttcatatgcatg, cccaaagatgaatcagtgct, ccgagttcttttctccttg, gtacaccttatgcaggtgcc, ccacgtcccattgaacatag, gtcgtccaggattgtgatct, tacatggaaccaaagacagc, ggccaataaccgagataacat, ggcaacttgcgatgattc, cggcctcgttaactggata, attgatctggaaccactgaa, gatgtgcctaagcaggttcg, tacaatcgggactggcggg, atgtgcgtagtagtgatg, cgggtcctctggatcgtagt, ctggacgacatcaccactag, gccaaagaacgagcgttcctc, gtactgggtcgtagcttct, ccttgggtataatattgtca, acgtagtaatgcattcccagt, aactgctcatcgtccagctg, caggctcaagcaacatacgt, atccatgccaaagtgaagc, gtgccgacgaatgttcagtc, atgaacttgcgtttcgtctg, gaacagatctcggacgtttg, tctaaccatgagtgggcac, accaccagcatgtttattga, ctgctgagcggaaacaattt, cagcgggtctgctgctgtttg, gctcagagtcaccaatgaaa, cgccagttgtccgagattg, ctgcccggtaaatgaacaaaa, gcgatggcgataaacgaatt, tcgatgtacaaacgcttaga, atatagatctgcgcatcca, ccatttaagtagatgacgta, ttgcaacgcctacatattgt, aactgcaggattcgaagac, ctgtgcgtacatttagcgag</p>
<p><i>gcl</i> green 45 probes Quasar 670</p>	<p>ctctgttttgcagcttgg, catgcggtttaagccatttc, aaataaaataaacacgggct, cagttacagtgccgtacttt, tcccactatttgaccatgg, ctccgtcgtattgtgtaaca, gcgccttgatagtagctg, cttatccagagccatgacag, tagaagtaggactctggct, atgaaattctgctgggctc, ccaggtagcaacgggtgatc, gctgtagcagattcgtatctc, tctaagtgaacaacgtggc, ccggactaatgttatccacc, gttggactcttgactccgac, gcttactataaatgcttagc, gggcaactcagctcaatg, cgagaactccgtctgcatca, ggatgcagtcgtaggaacat, aaaagctcctgcgtctttag, agcggctggtaagtagtgc, aagacctcacataaggctg, gatccatgtagtggtggc, ttgtgaatgtgccgatacag, gaggactacaatcctcctgc, gcatcgcatgcagtttcaa, gttccagcgcacttctggta, gcgagtcctgatcaggatg, taagcactcgtcgtgctgc, gtttatcgaggctaccgtgg, ctctgtttttcgaggctaa, gaagtggatgaccaacttt, ttgaaactctgattcgggtg, ccgatttccgaaatgggtat, gaatcatcagcactggacgg, ctgaccgaccaagcgattct, atgggttgggtgactgctc, aaacaactacaacgagcccg, gagtgatcagccgtagctaa, acgattgcggatagcttat, gcgctattacatgatactag, ggcaactagatgtgcgtcta, atttctttgccgctttttt, gggacagtaattacatgcgt, tgatcactcaaggaatagt</p>
<p><i>gcl</i> intron 48 probes Quasar 570</p>	<p>aaacaaggtacacaaagggg, ctaacgaacgacgcaaaaact, gcagttaatccgcagctata, tatatccccatgttctctggc, gatatggaaaacggaccacc, ttgtttggccctgataacac, aacgcttattacgatggcc, aatcagctgattgacagct, cagataaggctacaagcagc, aaatttggagctccgaaat, agttgccttagacgactgag, gcaactgattcgtagggat, ggagactcgaactcgaactc, gaagaagccaacaagcatgg, ccaaggagtaaacggctaaa, aggaggattgtccactttt, ttcgaaatgtatcatccgga, ttatctactgcaccttggg, acaagttttcagcgttgaca, aagtgcatttccaaacgatt, gtgcctgaagctttgtttc, ccgagtttccaaaagtcgta, gatgaccaagaccaccaaac, attacgtcaccactgaagc, caaaacaagacgattgcagc, tccaaagcgtgtatttctt, aagagtagtgttccaaaccg, ggacgcagactaagcataaaa, gacagctcggactatggat, ggatctcattgatatgggcg, aacaatcaaaccggacgcttt, atagtgtatttctgccc, tggaaagctactgactactaca, tgatgaacctatgcaaggc, gttgtgtttatgctttggcg, aatgagatcaaacgagctcg, tagcgcaaacatatttgggt, aagcgattttaaagcactga, aagaaacagagaagcatccg, ggtcgacaaaatgcaattca, cgcaataagcccagactaa, gcgatgctcggaaaacttaa, ggaaagcgcattccata, cgactttacaggccctaaaa, agtttcattccgccaactg, cctcaatggaaccagttgac, ctgacagattgcggtgtgat, aaaaatgcggctggttatcg</p>
<p><i>gcl</i> 3'UTR 48 probes Quasar 670</p>	<p>ttgtgaatgtgccgatacag, acgtagtaatgcattcccagt, gaggactacaatcctcctgc, aactgctcatcgtccagctg, gcatcgcatgcagtttcaa, caggctcaagcaacatacgt, gtccagcgcacttctggta, atccatgccaaagtgaagc, gcgagtcctgatcaggatg, gtgccgacgaatgttcagtc, taagcactcgtcgtgctgc, atgaacttgcgtttcgtctg, gtttatcgaggctaccgtgg, gaacagatctcggacgtttg, ctgcttctttcgaggctaa, tctaaccatgagtgggcac, gaagtggatgaccaacttt, accaccagcatgtttattga, ttgaaactctgattcgggtg, ctgctgagcggaaacaattt, ccgatttccgaaatgggtat, cagcgggtctgctgctgtttg, gaatcatcagcactggacgg, gctcagagtcaccaatgaaa, gaccaagcgaattcgtggcgg, gattgcgcccgttctgctag, gtctcagcagcggcgtgct, attggttgggtgactgctc, ctgcccggtaaatgaacaaaa, aaacaactacaacgagcccg, gcgatggcgataaacgaatt, gagtgatcagccgtagctaa, tcgatgtacaaacgcttaga, acgattgcggatagcttat, atatagatctgcgcatcca, gcgctattacatgatactag, ccatttaagtagatgacgta, ggcaactagatgtgcgtcta, ttgcaacgcctacatattgt, atttctttgccgctttttt, aactgcaggattcgaagac, gggacagtaattacatgcgt, ctgtgcgtacatttagcgag, tgatcactcaaggaatagt</p>