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| **R-GECO 1 and 1.2** | Mutation  |  | Primer Sequence 5’->3’ (Forward- F), (Reverse-R) |
| I78L | FR | CCCGGCGCCTACATCGTCGACCTTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTAAGGTCGACGATGTAGGCGCCGGG |
| I78T | FR | CCCGGCGCCTACATCGTCGACACAAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTTGTGTCGACGATGTAGGCGCCGGG |
| I78N | FR | CCCGGCGCCTACATCGTCGACAACAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTGTTGTCGACGATGTAGGCGCCGGG |
| I78H | FR | CCCGGCGCCTACATCGTCGACCATAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTATGGTCGACGATGTAGGCGCCGGG |
| I78A | FR | CCCGGCGCCTACATCGTCGACGCTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTAGCGTCGACGATGTAGGCGCCGGG |
| I78Y | FR | CCCGGCGCCTACATCGTCGACTATAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTATAGTCGACGATGTAGGCGCCGGG |
| I78Q | FR | CCCGGCGCCTACATCGTCGACCAAAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTTTGGTCGACGATGTAGGCGCCGGG |
| I78PRO | FR | CCCGGCGCCTACATCGTCGACCCTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTAGGGTCGACGATGTAGGCGCCGGG |
| I78Val | FR | CCCGGCGCCTACATCGTCGACGTTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTAACGTCGACGATGTAGGCGCCGGG |
| I78C | FR | CCCGGCGCCTACATCGTCGACTGTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTACAGTCGACGATGTAGGCGCCGGG |
| I78K | FR | CCCGGCGCCTACATCGTCGACAAAAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTTTTGTCGACGATGTAGGCGCCGGG |
| I78G | FR | CCCGGCGCCTACATCGTCGACGGTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTACCGTCGACGATGTAGGCGCCGGG |
| I78F | FR | CCCGGCGCCTACATCGTCGACTTTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTAAAGTCGACGATGTAGGCGCCGGG |
| I78D | FR | CCCGGCGCCTACATCGTCGACGATAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTATCGTCGACGATGTAGGCGCCGGG |
| I78E | FR | CCCGGCGCCTACATCGTCGACGAAAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTTTCGTCGACGATGTAGGCGCCGGG |
| I78S | FR | CCCGGCGCCTACATCGTCGACTCTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTAGAGTCGACGATGTAGGCGCCGGG |
| I78R | FR | CCCGGCGCCTACATCGTCGACCGTAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTACGGTCGACGATGTAGGCGCCGGG |
| I78W | FR | CCCGGCGCCTACATCGTCGACTGGAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTCCAGTCGACGATGTAGGCGCCGGG |
| **mRuby3** | H200I | FR | CCCGGTGTCCATGCCGTTGATATCCGCCTGGAAAGGATCGAGGAGCTCCTCGATCCTTTCCAGGCGGATATCAACGGCATGGACACCGGG |
| H200T | FR | CCCGGTGTCCATGCCGTTGATACACGCCTGGAAAGGATCGAGGAGCTCCTCGATCCTTTCCAGGCGTGTATCAACGGCATGGACACCGGG |
| **RCaMP1h****(mRuby)** | H115T | FR | CCTGCCATTCATTACGTCAGCACACGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGTGTGCTGACGTAATGAATGGCAGG |
| **jRCaMP1a****(mRuby)** | H134I | FR | CCTGCCATTCATAGCGTCAGCATTCGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGAATGCTGACGCTATGAATGGCAGG |
| H134T | FR | CCTGCCATTCATAGCGTCAGCACTCGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGAGTGCTGACGCTATGAATGGCAGG |
| **jRCaMP1b****(mRuby)** | H134I | FR | CCTGCCATTCATTACGTCAGCATCCGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGGATGCTGACGTAATGAATGGCAGG |
| H134T | FR | CCTGCCATTCATTACGTCAGCACACGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGTGTGCTGACGTAATGAATGGCAGG |
| H134K | FR | CCTGCCATTCATTACGTCAGCAAGCGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGCTTGCTGACGTAATGAATGGCAGG |
| H134R | FR | CCTGCCATTCATTACGTCAGCCGTCGTCTGGAGCGCCTGGAGGAGCTCCTCCAGGCGCTCCAGACGACGGCTGACGTAATGAATGGCAGG |
| **jRGECOa****(mApple)** | I131T | FR | CCCGGCGCCTACATCGTGGACACCAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTGGTGTCCACGATGTAGGCGCCGGG |
| I131H | FR | CCCGGCGCCTACATCGTGGACCACAAGTTGGACATCGTGTCCCACGTGGGACACGATGTCCAACTTGTGGTCCACGATGTAGGCGCCGGG |
| I131R | FR | CCCGGCGCCTACATCGTGGACAGGAAGTTGGACATCGTGTCCCAC GTGGGACACGATGTCCAACTTCCTGTCCACGATGTAGGCGCCGGG |