

Online Resource 2. Frequency of optimal codon (Fop), effective number of codon (ENC), GC percentage on the third codon position (GC<sub>3</sub>), and GC percentage of the coding region for female biased, male biased, and unbiased genes.

| Female    |       |       |                 |       |
|-----------|-------|-------|-----------------|-------|
| bias      | Fop   | ENC   | GC <sub>3</sub> | GC    |
| CG10035   | 0.538 | 47.01 | 0.632           | 0.575 |
| CG10206   | 0.642 | 42.57 | 0.746           | 0.557 |
| CG11981   | 0.576 | 47.81 | 0.67            | 0.545 |
| CG12276   | 0.471 | 55.79 | 0.589           | 0.518 |
| CG13934   | 0.518 | 54.23 | 0.688           | 0.594 |
| CG15717   | 0.594 | 40.87 | 0.759           | 0.589 |
| CG16985   | 0.379 | 61    | 0.476           | 0.484 |
| CG2222    | 0.642 | 42.62 | 0.75            | 0.557 |
| CG3481    | 0.832 | 27.76 | 0.872           | 0.599 |
| CG3509    | 0.409 | 57.45 | 0.494           | 0.486 |
| CG3661    | 0.575 | 44.75 | 0.649           | 0.571 |
| CG3831    | 0.537 | 47.83 | 0.728           | 0.539 |
| CG4299    | 0.596 | 49.81 | 0.655           | 0.518 |
| CG5272    | 0.407 | 58.72 | 0.577           | 0.542 |
| CG5363    | 0.423 | 52.4  | 0.489           | 0.441 |
| CG5499    | 0.564 | 47.44 | 0.671           | 0.589 |
| CG5757    | 0.385 | 54.92 | 0.502           | 0.494 |
| CG6459    | 0.582 | 46.25 | 0.703           | 0.536 |
| CG7484    | 0.594 | 45.34 | 0.714           | 0.549 |
| CG7840    | 0.559 | 48.76 | 0.668           | 0.526 |
| CG9135    | 0.521 | 49.51 | 0.638           | 0.539 |
| Male bias | Fop   | ENC   | GC <sub>3</sub> | GC    |
| CG10252   | 0.488 | 54.08 | 0.61            | 0.554 |
| CG10623   | 0.509 | 53.75 | 0.602           | 0.535 |
| CG10920   | 0.62  | 42.34 | 0.8             | 0.639 |
| CG11379   | 0.59  | 44.24 | 0.749           | 0.627 |
| CG11697   | 0.521 | 49.87 | 0.661           | 0.523 |
| CG12395   | 0.218 | 53.54 | 0.291           | 0.371 |
| CG12681   | 0.55  | 46.85 | 0.714           | 0.573 |
| CG1314    | 0.542 | 43.45 | 0.727           | 0.579 |
| CG13690   | 0.533 | 54.68 | 0.625           | 0.508 |
| CG14629   | 0.684 | 36.79 | 0.858           | 0.613 |
| CG14926   | 0.452 | 53.44 | 0.562           | 0.541 |
| CG15179   | 0.498 | 56.13 | 0.604           | 0.477 |
| CG15208   | 0.549 | 46.77 | 0.699           | 0.614 |
| CG17376   | 0.534 | 61    | 0.625           | 0.587 |
| CG18266   | 0.507 | 47.98 | 0.625           | 0.549 |
| CG18418   | 0.567 | 48.68 | 0.723           | 0.582 |
| CG1885    | 0.613 | 43.32 | 0.779           | 0.597 |
| CG2555    | 0.482 | 43.83 | 0.565           | 0.591 |
| CG2574    | 0.602 | 41.73 | 0.73            | 0.596 |

|         |       |       |                 |       |
|---------|-------|-------|-----------------|-------|
| CG2577  | 0.652 | 39.24 | 0.808           | 0.598 |
| CG3024  | 0.564 | 49.45 | 0.685           | 0.521 |
| CG3085  | 0.598 | 44.13 | 0.715           | 0.55  |
| CG3476  | 0.353 | 61    | 0.462           | 0.489 |
| CG3483  | 0.503 | 53.76 | 0.626           | 0.524 |
| CG3708  | 0.521 | 47.16 | 0.702           | 0.588 |
| CG4593  | 0.638 | 43.64 | 0.739           | 0.571 |
| CG5045  | 0.423 | 58.71 | 0.556           | 0.508 |
| CG5565  | 0.472 | 58.28 | 0.575           | 0.533 |
| CG5915  | 0.542 | 53.69 | 0.617           | 0.517 |
| CG6036  | 0.434 | 58.29 | 0.537           | 0.491 |
| CG6130  | 0.613 | 36.57 | 0.808           | 0.584 |
| CG6332  | 0.628 | 39.68 | 0.828           | 0.607 |
| CG6789  | 0.663 | 37.06 | 0.792           | 0.626 |
| CG6971  | 0.519 | 53.54 | 0.582           | 0.515 |
| CG6980  | 0.592 | 40.36 | 0.725           | 0.526 |
| CG8277  | 0.498 | 56.19 | 0.57            | 0.466 |
| CG8564  | 0.529 | 49.54 | 0.665           | 0.562 |
| CG8844  | 0.713 | 41.03 | 0.787           | 0.589 |
| CG9314  | 0.66  | 38.6  | 0.826           | 0.59  |
| CG9531  | 0.571 | 49.17 | 0.682           | 0.532 |
| Unbias  | Fop   | ENC   | GC <sub>3</sub> | GC    |
| CG10853 | 0.391 | 57.75 | 0.478           | 0.606 |
| CG11130 | 0.612 | 45.33 | 0.735           | 0.58  |
| CG11785 | 0.52  | 52.35 | 0.633           | 0.502 |
| CG12117 | 0.664 | 39.15 | 0.802           | 0.593 |
| CG1239  | 0.352 | 61    | 0.423           | 0.443 |
| CG12909 | 0.642 | 42.41 | 0.761           | 0.552 |
| CG13189 | 0.595 | 42.63 | 0.738           | 0.594 |
| CG13419 | 0.649 | 44.64 | 0.732           | 0.578 |
| CG1397  | 0.639 | 39.87 | 0.806           | 0.598 |
| CG14434 | 0.617 | 44.85 | 0.754           | 0.606 |
| CG14717 | 0.487 | 53.9  | 0.663           | 0.548 |
| CG14797 | 0.412 | 60.34 | 0.582           | 0.535 |
| CG1503  | 0.544 | 49.17 | 0.704           | 0.579 |
| CG15035 | 0.591 | 37.84 | 0.782           | 0.648 |
| CG15336 | 0.477 | 60.71 | 0.614           | 0.547 |
| CG17361 | 0.503 | 57.7  | 0.598           | 0.493 |
| CG17404 | 0.431 | 56.16 | 0.538           | 0.529 |
| CG1749  | 0.421 | 59.57 | 0.542           | 0.503 |
| CG1751  | 0.546 | 51.09 | 0.638           | 0.532 |
| CG18341 | 0.715 | 32.94 | 0.891           | 0.658 |
| CG18553 | 0.565 | 46    | 0.732           | 0.568 |
| CG1950  | 0.607 | 46    | 0.717           | 0.579 |
| CG2867  | 0.501 | 50.9  | 0.625           | 0.562 |
| CG3004  | 0.546 | 48.16 | 0.664           | 0.546 |

|         |       |       |       |       |
|---------|-------|-------|-------|-------|
| CG32409 | 0.48  | 51.66 | 0.54  | 0.498 |
| CG3603  | 0.461 | 49.7  | 0.547 | 0.514 |
| CG3652  | 0.463 | 54.84 | 0.579 | 0.513 |
| CG3683  | 0.551 | 53.17 | 0.629 | 0.541 |
| CG3704  | 0.645 | 42.8  | 0.763 | 0.576 |
| CG3975  | 0.566 | 47.15 | 0.66  | 0.538 |
| CG4236  | 0.53  | 51.69 | 0.65  | 0.529 |
| CG4570  | 0.581 | 45.95 | 0.728 | 0.579 |
| CG4973  | 0.417 | 57.96 | 0.513 | 0.49  |
| CG5276  | 0.55  | 47.27 | 0.667 | 0.543 |
| CG5662  | 0.703 | 32.31 | 0.934 | 0.682 |
| CG5919  | 0.56  | 49.07 | 0.684 | 0.545 |
| CG6094  | 0.569 | 47.24 | 0.663 | 0.566 |
| CG6255  | 0.644 | 41.81 | 0.77  | 0.597 |
| CG6554  | 0.524 | 50.07 | 0.609 | 0.493 |
| CG6913  | 0.508 | 53.42 | 0.647 | 0.586 |
| CG6981  | 0.638 | 35.29 | 0.737 | 0.549 |
| CG7251  | 0.503 | 53.28 | 0.622 | 0.539 |
| CG7508  | 0.646 | 41.94 | 0.735 | 0.585 |
| CG7860  | 0.671 | 37.46 | 0.809 | 0.646 |
| CG7953  | 0.755 | 33.59 | 0.836 | 0.578 |
| CG8326  | 0.571 | 48.01 | 0.705 | 0.562 |
| CG8392  | 0.607 | 42.52 | 0.688 | 0.559 |
| CG8675  | 0.668 | 40.52 | 0.773 | 0.569 |
| CG9125  | 0.467 | 55.6  | 0.575 | 0.493 |
| CG9164  | 0.611 | 42.29 | 0.774 | 0.585 |
| CG9273  | 0.483 | 51.47 | 0.61  | 0.514 |
| CG9283  | 0.644 | 40.69 | 0.696 | 0.575 |
| CG9383  | 0.559 | 53.4  | 0.649 | 0.533 |
| CG9437  | 0.435 | 54.9  | 0.581 | 0.525 |
| CG9617  | 0.626 | 49.11 | 0.747 | 0.553 |
| CG9723  | 0.577 | 46.7  | 0.725 | 0.545 |
| CG9893  | 0.612 | 47.16 | 0.707 | 0.578 |
| CG9915  | 0.3   | 56.41 | 0.415 | 0.487 |
| CG9919  | 0.461 | 56.05 | 0.576 | 0.499 |

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