*Table A3-1: Results of regression of E on each chemical constituent for each specimen. Significant relationships are shown in bold.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Specimen | CaO | | P2O5 | | Protein | | MgO | | Na2O | | Cl | |
| p | r2 | p | r2 | p | r2 | p | r2 | p | r2 | p | r2 |
| Slope 95% CI | | Slope 95% CI | | Slope 95% CI | | Slope 95% CI | | Slope 95% CI | | Slope 95% CI | |
| MacacaA  (n=53) | **0.050** | 0.089 | **0.023** | 0.114 | 0.558 | 0.008 | **0.004** | 0.196 | 0.276 | 0.029 | 0.158 | 0.055 |
| 1.050 - 12.604 | | -9.476 - 5.675 | | -6.108 - 3.606 | | -92.109 - -12.360 | | 0.348 - 0.011 | | -59.156 - 7.204 | |
| MacacaB  (n=102) | **<0.001** | 0.524 | **<0.001** | 0.311 | **<0.001** | 0.479 | **<0.001** | 0.292 | **<0.001** | 0.524 | **<0.001** | 0.483 |
| 6.969 - 12.198 | | 6.717 - 12.685 | | -8.766 - -5.261 | | -49.021 - -21.407 | | 0.000 - 0.438 | | 40.150 - 64.428 | |
| MacacaC  (n=100) | **0.007** | 0.044 | **<0.001** | 0.078 | **0.002** | 0.057 | **0.006** | 0.052 | **0.015** | 0.041 | 0.172 | 0.009 |
| 1.555 - 7.942 | | 3.845 - 11.960 | | -5.673 - -1.463 | | -64.965 - -15.426 | | 0.007 - 0.064 | | -2.646 - 33.162 | |
| MacacaE  (n=84) | **0.001** | 0.159 | **0.047** | 0.056 | **0.004** | 0.107 | **<0.001** | 0.204 | **0.007** | 0.104 | **0.002** | 0.136 |
| 4.682 - 14.223 | | 0.620 - 11.659 | | -8.140 - -1.824 | | -90.360 - -35.613 | | 0.003 - 0.104 | | 17.782 - 61.946 | |
| MacacaF  (n=89) | 0.116 | 0.034 | 0.676 | 0.001 | 0.474 | 0.042 | **0.002** | 0.067 | **0.003** | 0.062 | **0.012** | 0.032 |
| -3.423 - 2.147 | | -3.232 - 5.189 | | -1.213 - 2.955 | | -48.329 - -14.446 | | 0.001 - 0.106 | | 7.359 - 39.581 | |
| MacacaG  (n=92) | **<0.001** | 0.192 | **<0.001** | 0.19 | **<0.001** | 0.206 | **0.012** | 0.089 | **<0.001** | 0.19 | **<0.001** | 0.16 |
| 4.016 - 10.050 | | 4.256 - 10.755 | | -6.186 - -2.582 | | -52.064 - -10.303 | | 0.000 - 0.190 | | 15.318 - 43.594 | |
| MacacaH  (n=87) | **0.003** | 0.07 | **0.001** | 0.145 | **0.001** | 0.122 | 0.059 | 0.019 | **0.016** | 0.073 | 0.246 | 0.028 |
| 2.236 - 9.048 | | 3.140 - 10.674 | | -6.166 - -1.851 | | -74.078 - -4.298 | | 0.008 - 0.069 | | -4.916 - 26.030 | |
| 18495M  (n=12) | 0.198 | 0.201 | 0.247 | 0.172 | 0.933 | 0.001 | 0.282 | 0.172 | 0.680 | 0.018 | 0.470 | 0.053 |
| -12.470 - 2.101 | | -3.027 - 14.156 | | -7.039 - 6.514 | | -17.542 - 81.948 | | 0.680 - 0.018 | | -40.848 - 82.322 | |
| 28534M  (n=8) | 0.262 | 0.243 | 0.259 | 0.257 | 0.176 | 0.342 | 0.632 | 0.055 | 0.196 | 0.334 | 0.111 | 0.483 |
| -1.934 - 7.017 | | -2.440 - 9.412 | | -5.019 - 0.812 | | -77.131 - 47.016 | | 0.133 - 0.334 | | -1.021 - 63.401 | |
| 4X0315  (n=97) | **0.001** | 0.119 | **<0.001** | 0.182 | **<0.001** | 0.171 | 0.059 | 0.047 | 0.284 | 0.016 | 0.287 | 0.016 |
| 3.467 - 12.132 | | 6.305 - 15.908 | | -8.303 - -3.156 | | -86.915 - -3.919 | | 0.220 - 0.016 | | -11.611 - 49.439 | |
| 4X0357  (n=50) | **0.002** | 0.194 | **<0.001** | 0.394 | **<0.001** | 0.337 | 0.093 | 0.073 | 0.063 | 0.073 | **0.012** | 0.129 |
| 3.109 - 11.942 | | 6.335 - 17.217 | | -9.058 - -3.339 | | -63.105 - 0.685 | | 0.034 - 0.069 | | 14.848 - 83.282 | |
| CPoly2  (n=75) | **0.001** | 0.159 | **0.004** | 0.073 | **<0.001** | 0.201 | 0.059 | 0.01 | 0.106 | 0.059 | 0.246 | 0.046 |
| 3.441 - 10.472 | | 2.888 - 12.589 | | -9.015 - -3.992 | | 2.619 - 58.648 | | 0.062 - 0.037 | | -9.594 - 54.250 | |
| 007-1  (n=26) | 0.132 | 0.119 | **0.002** | 0.365 | **0.003** | 0.335 | 0.384 | 0.044 | 0.277 | 0.067 | 0.359 | 0.046 |
| -1.188 - 17.467 | | 5.791 - 20.296 | | -12.970 - -3.303 | | -30.232 - 92.407 | | 0.202 - 0.067 | | -13.550 - 42.910 | |
| MacacaSP  (n=69) | 0.966 | 0 | 0.086 | 0.052 | 0.333 | 0.019 | 0.297 | 0.024 | 0.146 | 0.042 | 0.410 | 0.012 |
| -2.862 - 2.741 | | -0.099 - 5.458 | | -2.803 - 0.763 | | -5.909 - 26.723 | | 0.093 - 0.042 | | -6.813 - 17.868 | |
| G83  (n=87) | 0.404 | 0.015 | 0.826 | 0.003 | 0.671 | 0.006 | **0.013** | 0.119 | 0.568 | 0.009 | 0.410 | 0.019 |
| -5.773 - 2.058 | | -6.150 - 4.922 | | -2.122 - 3.430 | | 11.764 - 62.659 | | 0.542 - 0.004 | | -31.853 - 12.569 | |
| LLagM  (n=53) | **<0.001** | 0.487 | **<0.001** | 0.59 | **<0.001** | 0.638 | 0.384 | 0.02 | **<0.001** | 0.536 | **<0.001** | 0.506 |
| 7.993 - 14.467 | | 9.938 - 16.028 | | -9.185 - -5.977 | | -45.508 - 14.918 | | 0.000 - 0.536 | | 44.556 - 78.781 | |
| LLagF  (n=73) | **<0.001** | 0.187 | **<0.001** | 0.176 | **<0.001** | 0.226 | **<0.001** | 0.286 | **<0.001** | 0.141 | **<0.001** | 0.209 |
| 5.633 - 12.194 | | 8.578 - 17.957 | | -9.287 - -4.847 | | -111.078 - -57.702 | | 0.000 - 0.166 | | 27.085 - 59.864 | |
| 001-1  (n=74) | **<0.001** | 0.219 | **<0.001** | 0.399 | **<0.001** | 0.343 | **0.003** | 0.145 | **<0.001** | 0.257 | **<0.001** | 0.324 |
| 4.440 - 11.666 | | 8.885 - 15.436 | | -8.128 - -4.211 | | -89.730 - -25.380 | | 0.000 - 0.265 | | 32.984 - 61.559 | |
| PBadius111  (n=78) | **0.001** | 0.153 | **<0.001** | 0.213 | **<0.001** | 0.218 | 0.480 | 0.009 | **0.007** | 0.112 | **0.003** | 0.134 |
| 3.511 - 11.667 | | 5.363 - 13.768 | | -7.997 - -3.169 | | -50.256 - 20.917 | | 0.003 - 0.112 | | 12.747 - 47.929 | |
| CApellaM1  (n=55) | 0.702 | 0.003 | 0.336 | 0.022 | 0.449 | 0.015 | 0.297 | 0.029 | 0.568 | 0.008 | 0.188 | 0.047 |
| -5.742 - 8.862 | | -2.586 - 8.909 | | -5.156 - 1.941 | | -98.768 - 22.826 | | 0.527 - 0.008 | | -4.939 - 46.467 | |
| 19577M  (n=8) | 0.241 | 0.101 | 0.647 | 0.036 | 0.176 | 0.19 | 0.822 | 0.001 | 0.568 | 0.039 | 0.410 | 0.101 |
| -4.446 - 19.415 | | -6.816 - 11.713 | | -14.987 - 2.196 | | -103.550 - 84.590 | | 0.491 - 0.061 | | -35.516 - 81.543 | |
| 004-1  (n=74) | **0.001** | 0.152 | **<0.001** | 0.257 | **<0.001** | 0.508 | 0.672 | 0.003 | **<0.001** | 0.313 | **<0.001** | 0.218 |
| 2.319 - 8.118 | | 6.532 - 15.208 | | -12.470 - -7.788 | | -6.123 - 9.877 | | 0.000 - 0.313 | | 24.597 - 64.000 | |

*Table A3-2: Results of regression of H on each chemical constituent for each specimen. Significant relationships are shown in bold.*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Specimen | CaO | | P2O5 | | Protein | | MgO | | Na2O | | Cl | |
| p | r2 | p | r2 | p | r2 | p | r2 | p | r2 | p | r2 |
| Slope 95% CI | | Slope 95% CI | | Slope 95% CI | | Slope 95% CI | | Slope 95% CI | | Slope 95% CI | |
| MacacaA  (n=53) | 0.252 | 0.038 | **0.016** | 0.132 | 0.343 | 0.023 | 0.096 | 0.106 | 0.148 | 0.075 | 0.062 | 0.112 |
| -0.251 - 0.438 | | -0.498 - 0.245 | | -0.234 - 0.244 | | -3.404 - 0.635 | | 0.364 - 2.792 | | -3.776 - -0.619 | |
| MacacaB  (n=102) | **0.016** | 0.008 | 0.240 | 0.035 | **0.026** | 0.025 | 0.904 | **<0.001** | 0.097 | 0.03 | **0.033** | 0.027 |
| 0.085 - 0.443 | | -0.070 - 0.336 | | -0.280 - -0.030 | | -1.716 - 0.053 | | -1.432 - -0.053 | | 0.329 - 2.096 | |
| MacacaC  (n=100) | 0.056 | 0.046 | **<0.001** | 0.187 | **0.002** | 0.118 | 0.403 | 0.017 | 0.337 | 0.024 | 0.242 | 0.023 |
| 0.014 - 0.248 | | 0.173 - 0.461 | | -0.208 - -0.056 | | -1.727 - 0.117 | | -0.805 - 0.156 | | -0.166 - 1.129 | |
| MacacaE  (n=84) | 0.252 | 0.023 | 0.070 | 0.048 | 0.068 | 0.046 | 0.403 | 0.02 | 0.359 | 0.019 | **0.040** | 0.076 |
| -0.060 - 0.332 | | 0.005 - 0.428 | | -0.250 - -0.001 | | -1.909 - 0.409 | | -1.116 - 0.252 | | 0.268 - 2.011 | |
| MacacaF  (n=89) | **<0.001** | 0.22 | 0.183 | 0.017 | **0.001** | 0.145 | 0.218 | 0.044 | **0.027** | 0.04 | **0.007** | 0.069 |
| -0.363 - -0.158 | | -0.304 - 0.041 | | 0.078 - 0.239 | | 0.188 - 1.637 | | 0.221 - 1.137 | | -1.782 - -0.469 | |
| MacacaG  (n=92) | **<0.001** | 0.265 | **<0.001** | 0.358 | **<0.001** | 0.329 | **<0.001** | 0.237 | **<0.001** | 0.361 | **<0.001** | 0.432 |
| 0.189 - 0.391 | | 0.261 - 0.465 | | -0.253 - -0.137 | | -2.463 - -1.118 | | -1.687 - -0.951 | | 1.294 - 2.112 | |
| MacacaH  (n=87) | **0.050** | 0.032 | **<0.001** | 0.136 | **0.002** | 0.092 | 0.861 | 0.001 | 0.057 | 0.043 | 0.177 | 0.019 |
| 0.029 - 0.341 | | 0.187 - 0.516 | | -0.272 - -0.079 | | -2.184 - 0.996 | | -1.115 - -0.106 | | -0.091 - 1.281 | |
| 18495M  (n=12) | 0.840 | 0.007 | 0.232 | 0.172 | 0.402 | 0.095 | 0.861 | 0.009 | 0.511 | 0.088 | 0.941 | 0.001 |
| -0.835 - 0.662 | | -1.305 - 0.279 | | -0.320 - 0.868 | | -5.712 - 4.320 | | -1.389 - 3.588 | | -6.083 - 5.580 | |
| 28534M  (n=8) | **0.046** | 0.641 | 0.058 | 0.573 | **0.007** | 0.794 | 0.403 | 0.278 | 0.119 | 0.488 | 0.289 | 0.26 |
| 0.126 - 0.868 | | 0.086 - 1.168 | | -0.583 - -0.189 | | -10.593 - 2.480 | | -6.409 - 0.074 | | -1.887 - 7.396 | |
| 4X0315  (n=97) | **0.015** | 0.086 | **<0.001** | 0.16 | **0.001** | 0.148 | 0.509 | 0.012 | 0.836 | 0.002 | 0.578 | 0.007 |
| 0.078 - 0.385 | | 0.194 - 0.533 | | -0.277 - -0.095 | | -2.280 - 0.662 | | -0.773 - 0.509 | | -0.632 - 1.503 | |
| 4X0357  (n=50) | 0.216 | 0.03 | **<0.001** | 0.186 | **0.004** | 0.118 | 0.699 | 0.012 | 0.837 | **<0.001** | 0.621 | 0.012 |
| -0.050 - 0.352 | | 0.295 - 0.751 | | -0.342 - -0.087 | | -2.086 - 0.684 | | -0.755 - 1.081 | | -1.017 - 2.064 | |
| CPoly2  (n=75) | 0.393 | 0.005 | **0.002** | 0.219 | **0.008** | 0.103 | **0.002** | 0.174 | 0.903 | 0.002 | 0.621 | 0.001 |
| -0.049 - 0.155 | | 0.103 - 0.360 | | -0.182 - -0.036 | | 0.197 - 1.692 | | -0.839 - 0.742 | | -1.155 - 0.576 | |
| 007-1  (n=26) | 0.289 | 0.065 | **0.029** | 0.23 | **0.029** | 0.21 | 0.861 | 0.004 | 0.903 | 0.001 | 0.941 | 0 |
| -0.210 - 0.905 | | 0.138 - 1.064 | | -0.679 - -0.068 | | -3.106 - 4.154 | | -1.287 - 1.105 | | -1.737 - 1.615 | |
| MacacaSP  (n=69) | 0.085 | 0.058 | 0.058 | 0.067 | 0.886 | 0.001 | 0.312 | 0.043 | 0.716 | 0.005 | 0.913 | 0.001 |
| -0.295 - -0.003 | | 0.015 - 0.311 | | -0.106 - 0.087 | | -0.110 - 1.627 | | -0.805 - 0.435 | | -0.577 - 0.757 | |
| G83  (n=87) | 0.884 | 0 | 0.068 | 0.033 | 0.262 | 0.01 | 0.312 | 0.032 | 0.674 | 0.002 | 0.242 | 0.011 |
| -0.128 - 0.148 | | 0.009 - 0.388 | | -0.159 - 0.034 | | -0.381 - 1.465 | | -0.817 - 0.395 | | -0.213 - 1.330 | |
| LLagM  (n=53) | **0.001** | 0.252 | **0.001** | 0.228 | **<0.001** | 0.294 | 0.907 | 0 | **0.027** | 0.145 | 0.053 | 0.107 |
| 0.210 - 0.604 | | 0.196 - 0.618 | | -0.373 - -0.147 | | -1.629 - 1.449 | | -2.447 - -0.460 | | 0.269 - 2.591 | |
| LLagF  (n=73) | 0.133 | 0.027 | 0.081 | 0.029 | 0.054 | 0.035 | 0.342 | 0.033 | 0.473 | 0.026 | 0.242 | 0.038 |
| -0.015 - 0.273 | | -0.004 - 0.410 | | -0.209 - -0.007 | | -2.237 - 0.211 | | -1.244 - 0.389 | | -0.176 - 1.261 | |
| 001-1  (n=74) | **0.003** | 0.143 | **<0.001** | 0.317 | **<0.001** | 0.253 | **0.018** | 0.121 | **<0.001** | 0.176 | **<0.001** | 0.254 |
| 0.124 - 0.430 | | 0.295 - 0.582 | | -0.303 - -0.134 | | -3.611 - -0.958 | | -1.783 - -0.680 | | 1.086 - 2.322 | |
| PBadius111  (n=78) | 0.056 | 0.063 | **0.011** | 0.101 | **0.009** | 0.098 | 0.861 | 0.001 | 0.119 | 0.049 | 0.090 | 0.056 |
| 0.028 - 0.434 | | 0.099 - 0.524 | | -0.300 - -0.055 | | -1.923 - 1.454 | | -1.140 - 0.002 | | 0.059 - 1.795 | |
| CApellaM1  (n=55) | 0.783 | 0.003 | 0.339 | 0.02 | 0.472 | 0.013 | 0.861 | 0.004 | 0.282 | 0.04 | 0.114 | 0.069 |
| -0.393 - 0.595 | | -0.190 - 0.589 | | -0.340 - 0.140 | | -5.145 - 3.181 | | -3.516 - 0.514 | | -0.014 - 3.421 | |
| 19577M  (n=8) | 0.783 | 0.383 | 0.924 | 0.009 | 0.886 | 0.197 | 0.713 | 0.084 | 0.903 | 0.32 | 0.914 | 0.442 |
| -0.810 - 1.132 | | -0.722 - 0.663 | | -0.812 - 0.652 | | -7.152 - 6.643 | | -2.217 - 2.582 | | -4.052 - 4.908 | |
| 004-1  (n=74) | **0.039** | 0.084 | 0.276 | 0.019 | **0.008** | 0.109 | 0.699 | 0.009 | **0.049** | 0.082 | 0.090 | 0.06 |
| 0.035 - 0.284 | | -0.083 - 0.328 | | -0.323 - -0.064 | | -0.459 - 0.199 | | -1.472 - -0.175 | | 0.068 - 1.847 | |