**Table S1**. Whole-rockchemical analyses of the studied marble and schist from the Pirin unit. Location of the samples in Figure 1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| sample | R4b | R1 | R4a | R6 |
| location | 41°24'14.0" 23°34'53.4" | 41°40'53.1" 23°17'50.5" | 41°24'14.0" 23°34'53.4" | 41°29'08.8" 23°46'55.3" |
| Rock type | Fe-rich calc-schist | dolomitic marble | marble | marble |
| SiO2 | 56.93 | 0.00 | 0.00 | 0.00 |
| TiO2 | 0.94 | 0.01 | 0.01 | 0.01 |
| Al2O3 | 13.84 | 0.04 | 0.06 | 0.02 |
| Fe2O3 | 5.86 | 0.06 | 0.08 | 0.03 |
| MnO | 0.15 | 0.01 | 0.01 | 0.01 |
| MgO | 0.18 | 20.13 | 1.83 | 0.55 |
| CaO | 8.58 | 32.24 | 53.93 | 55.13 |
| Na2O | 0.01 | 0.00 | 0.01 | 0.01 |
| K2O | 0.48 | 0.00 | 0.00 | 0.00 |
| P2O5 | 0.24 | 0.02 | 0.03 | 0.00 |
| LOI | 12.54 | 47.17 | 43.98 | 43.93 |
| Total | 99.75 | 99.67 | 99.94 | 99.70 |
|  |  |  |  |  |
| Sc | 17.98 | <0.82 | <0.79 | <0.94 |
| V | 123 | 5,18 | 5,08 | 5,45 |
| Cr | 70 | 5 | 7 | 1 |
| Co | 14,74 | <LLD | <LLD | <LLD |
| Ni | 20 | <LLD | <LLD | <LLD |
| Cu | 27.26 | 4 | 6 | 6 |
| Zn | 104 | 38 | 59 | 35 |
| Ga | 18 | <LLD | <LLD | <LLD |
| Rb | 19.75 | 0.33 | 0.30 | 0.36 |
| Sr | 16.17 | 66 | 100 | 179 |
| Y | 22.44 | 2.80 | 0.60 | 0.08 |
| Zr | 166 | 1.16 | 0.89 | 0.47 |
| Nb | 12.82 | 0.05 | <0.06 | <0.05 |
| Cs | 1.32 | 0.04 | 0.06 | 0.05 |
| Ba | 100 | 2.64 | 5.20 | 2.51 |
| Hf | 4.67 | 0.06 | <0.06 | <0.06 |
| Ta | 1.03 | <0.02 | 0.03 | <0.02 |
| Pb | 36 | 15 | 20 | 7 |
| Th | 12.56 | 0.06 | 0.04 | <0.03 |
| U | 1.93 | 0.17 | 0.14 | 0.30 |
| La | 23.40 | 0.93 | 0.38 | 0.08 |
| Ce | 57.03 | 0.59 | 0.25 | 0.07 |
| Pr | 5.80 | 0.16 | 0.06 | <0.04 |
| Nd | 23.97 | 0.72 | 0.26 | <0.19 |
| Sm | 4.90 | 0.17 | <0.14 | <0.17 |
| Eu | 1.40 | 0.05 | 0.03 | <0.04 |
| Gd | 4.90 | 0.22 | <0.13 | <0.10 |
| Tb | 0.71 | 0.03 | <0.02 | <0.02 |
| Dy | 4.08 | 0.21 | 0.06 | <0.09 |
| Ho | 0.79 | 0.06 | 0.01 | <0.02 |
| Er | 2.43 | 0.15 | 0.04 | <0.04 |
| Tm | 0.31 | 0.02 | 0.01 | 0.02 |
| Yb | 2.30 | 0.13 | <0.11 | 0.06 |
| Lu | 0.31 | 0.02 | <0.02 | <0.01 |

Major and trace elements analyzed by XRF (Geneva). REE

analyzed by LA-ICP-MS (Sofia). LLD=lower limit detection.