**Supplementary Table S-1**. LA-ICP-MS zircon U-Pb data of consistency standard sample YOI.

| Spot Label | $^{238}U/^{206}Pb \pm 2\sigma$ | $^{207}Pb/^{206}Pb \pm 2\sigma$ | $^{206}Pb/^{238}U$ age (Ma, $\pm 2\sigma$) | $^{207}Pb/^{235}U$ age (Ma, $\pm 2\sigma$) | $^{207}Pb/^{206}Pb$ age (Ma, $\pm 2\sigma$) | Th/U | Disc.[1)] (%) | Remarks |
|---|---|---|---|---|---|---|---|---|
| OTB-Gr1901 | | | | | | | | |
| 006YOI | 21.915 ± 0.701 | 0.0536 ± 0.0051 | 287.7 ± 9.0 | 295.2 ± 25.9 | 354.9 ± 230.1 | 0.31 | 2.61 | |
| 016YOI | 22.712 ± 0.863 | 0.0578 ± 0.0058 | 277.8 ± 10.3 | 305.4 ± 28.6 | 522.3 ± 235.9 | 0.44 | 9.94 | |
| 026YOI | 21.867 ± 0.897 | 0.0509 ± 0.0064 | 288.3 ± 11.6 | 282.7 ± 33.4 | 236.9 ± 236.8 | 0.31 | -1.94 | |
| OTB-Gr2005 | | | | | | | | |
| 015YOI | 22.925 ± 0.940 | 0.0535 ± 0.0067 | 275.3 ± 11.1 | 283.2 ± 33.2 | 349.4 ± 310.4 | 0.38 | 2.87 | |
| 025YOI | 23.137 ± 0.879 | 0.0559 ± 0.0054 | 272.7 ± 10.2 | 291.7 ± 26.7 | 446.8 ± 231.4 | 0.36 | 6.97 | |
| 035YOI | 22.302 ± 0.736 | 0.0473 ± 0.0048 | 282.8 ± 9.1 | 260.5 ± 24.7 | 64.4 ± 64.3 | 0.37 | -7.89 | |
| OTB-Gr1902 | | | | | | | | |
| 039YOI | 22.805 ± 0.844 | 0.0521 ± 0.0044 | 276.7 ± 10.0 | 278.0 ± 22.6 | 288.8 ± 204.3 | 0.40 | 0.47 | |
| 049YOI | 22.207 ± 1.044 | 0.0492 ± 0.0070 | 283.9 ± 13.1 | 270.5 ± 36.5 | 156.2 ± 156.1 | 0.31 | -4.72 | |
| 059YOI | 22.957 ± 0.918 | 0.0516 ± 0.0045 | 274.9 ± 10.8 | 274.1 ± 23.6 | 267.6 ± 215.5 | 0.48 | -0.29 | |
| OTB-PsS2002 | | | | | | | | |
| 018YOI | 23.026 ± 0.921 | 0.0519 ± 0.0062 | 274.1 ± 10.7 | 274.5 ± 30.8 | 278.8 ± 278.7 | 0.42 | 0.15 | |
| 031YOI | 23.223 ± 0.627 | 0.0531 ± 0.0028 | 271.8 ± 7.2 | 278.4 ± 14.5 | 333.8 ± 124.8 | 0.83 | 2.43 | |
| 044YOI | 23.223 ± 0.906 | 0.0574 ± 0.0058 | 271.8 ± 10.4 | 297.5 ± 28.2 | 505.1 ± 239.2 | 0.50 | 9.46 | |
| 058YOI | 22.361 ± 0.716 | 0.0499 ± 0.0031 | 282.0 ± 8.8 | 272.3 ± 16.9 | 189.2 ± 151.0 | 0.71 | -3.44 | |
| 086YOI | 23.020 ± 0.944 | 0.0527 ± 0.0053 | 274.1 ± 11.0 | 278.5 ± 26.9 | 315.0 ± 247.6 | 0.28 | 1.61 | |
| 112YOI | 23.143 ± 0.926 | 0.0440 ± 0.0056 | 272.7 ± 10.7 | 236.4 ± 28.7 | 0.1 ± 0.0 | 0.35 | -13.31 | discordant |

1) Discordance is calculated as :[ ($^{207}Pb/^{235}U$ age)/($^{206}Pb/^{238}U$ age) - 1 ] × 100 (%).

**Supplementary Table S-2.** LA-ICP-MS zircon U-Pb data of three tonalite mylonite samples.

| Spot Label | $^{238}U/^{206}Pb \pm 2\sigma$ | $^{207}Pb/^{206}Pb \pm 2\sigma$ | $^{206}Pb/^{238}U$ age (Ma, $\pm 2\sigma$) | $^{207}Pb/^{235}U$ age (Ma, $\pm 2\sigma$) | $^{207}Pb/^{206}Pb$ age (Ma, $\pm 2\sigma$) | Th/U | Disc.[1] (%) |
|---|---|---|---|---|---|---|---|
| (OTB-Gr1901) | | | | | | | |
| 007OTB-Gr1901 | 21.777 ± 0.784 | 0.0529 ± 0.0048 | 289.4 ± 10.2 | 293.4 ± 25.0 | 325.8 ± 218.4 | 0.54 | 1.38 |
| 008OTB-Gr1901 | 22.026 ± 0.749 | 0.0527 ± 0.0063 | 286.2 ± 9.5 | 289.7 ± 31.7 | 317.7 ± 295.9 | 0.51 | 1.22 |
| 009OTB-Gr1901 | 21.622 ± 0.670 | 0.0514 ± 0.0034 | 291.4 ± 8.8 | 287.9 ± 18.5 | 259.1 ± 159.2 | 0.98 | -1.20 |
| 010OTB-Gr1901 | 21.744 ± 0.848 | 0.0560 ± 0.0066 | 289.9 ± 11.1 | 308.5 ± 33.5 | 452.0 ± 285.9 | 0.48 | 6.42 |
| 011OTB-Gr1901 | 21.753 ± 0.761 | 0.0476 ± 0.0047 | 289.7 ± 9.9 | 267.9 ± 25.0 | 81.2 ± 81.1 | 0.74 | -7.53 |
| 012OTB-Gr1901 | 22.080 ± 0.684 | 0.0499 ± 0.0042 | 285.6 ± 8.7 | 275.6 ± 22.0 | 191.9 ± 191.8 | 0.54 | -3.50 |
| 013OTB-Gr1901 | 22.336 ± 0.581 | 0.0502 ± 0.0032 | 282.3 ± 7.2 | 274.3 ± 16.7 | 205.9 ± 155.6 | 0.56 | -2.83 |
| 017OTB-Gr1901 | 21.772 ± 0.631 | 0.0486 ± 0.0033 | 289.5 ± 8.2 | 272.3 ± 17.8 | 126.5 ± 126.4 | 0.90 | -5.94 |
| 018OTB-Gr1901 | 22.022 ± 0.991 | 0.0488 ± 0.0062 | 286.3 ± 12.6 | 270.6 ± 32.8 | 136.7 ± 136.6 | 0.40 | -5.48 |
| 019OTB-Gr1901 | 22.193 ± 0.799 | 0.0526 ± 0.0045 | 284.1 ± 10.0 | 287.1 ± 23.3 | 311.0 ± 206.0 | 0.51 | 1.06 |
| 020OTB-Gr1901 | 22.836 ± 0.754 | 0.0558 ± 0.0045 | 276.3 ± 8.9 | 295.0 ± 22.5 | 446.2 ± 188.4 | 0.50 | 6.77 |
| 021OTB-Gr1901 | 22.336 ± 1.005 | 0.0500 ± 0.0062 | 282.3 ± 12.4 | 273.1 ± 32.4 | 194.2 ± 194.1 | 0.41 | -3.26 |
| 022OTB-Gr1901 | 22.406 ± 0.650 | 0.0548 ± 0.0031 | 281.4 ± 8.0 | 295.2 ± 16.3 | 405.3 ± 130.5 | 1.07 | 4.90 |
| 023OTB-Gr1901 | 21.906 ± 0.723 | 0.0546 ± 0.0046 | 287.7 ± 9.3 | 299.7 ± 23.9 | 393.9 ± 202.8 | 0.68 | 4.17 |
| 027OTB-Gr1901 | 22.065 ± 0.662 | 0.0490 ± 0.0045 | 285.7 ± 8.4 | 271.0 ± 23.1 | 145.8 ± 145.7 | 0.60 | -5.15 |
| 028OTB-Gr1901 | 22.080 ± 0.817 | 0.0525 ± 0.0039 | 285.6 ± 10.3 | 287.8 ± 21.0 | 305.8 ± 178.0 | 0.68 | 0.77 |
| 029OTB-Gr1901 | 21.983 ± 0.659 | 0.0542 ± 0.0037 | 286.8 ± 8.4 | 297.0 ± 19.2 | 378.0 ± 160.7 | 0.76 | 3.56 |
| 030OTB-Gr1901 | 21.825 ± 0.698 | 0.0513 ± 0.0044 | 288.8 ± 9.0 | 284.8 ± 23.1 | 252.1 ± 210.8 | 0.53 | -1.39 |
| 031OTB-Gr1901 | 22.477 ± 0.562 | 0.0518 ± 0.0030 | 280.6 ± 6.9 | 280.3 ± 15.3 | 278.0 ± 136.0 | 1.25 | -0.11 |
| 032OTB-Gr1901 | 22.247 ± 0.779 | 0.0502 ± 0.0046 | 283.5 ± 9.7 | 275.3 ± 23.7 | 206.4 ± 206.3 | 0.49 | -2.89 |
| 033OTB-Gr1901 | 21.954 ± 0.703 | 0.0501 ± 0.0037 | 287.1 ± 9.0 | 277.6 ± 19.9 | 197.7 ± 181.6 | 0.72 | -3.31 |
| (OTB-Gr2005) | | | | | | | |
| 006OTB-Gr2005 | 22.316 ± 0.669 | 0.0501 ± 0.0052 | 282.6 ± 8.3 | 273.6 ± 26.2 | 197.5 ± 197.4 | 0.54 | -3.18 |
| 007OTB-Gr2005 | 22.815 ± 0.662 | 0.0543 ± 0.0044 | 276.6 ± 7.9 | 288.0 ± 22.1 | 381.8 ± 195.7 | 0.55 | 4.12 |
| 008OTB-Gr2005 | 22.477 ± 0.877 | 0.0518 ± 0.0050 | 280.6 ± 10.7 | 280.1 ± 26.0 | 275.5 ± 238.8 | 0.42 | -0.18 |
| 009OTB-Gr2005 | 22.989 ± 0.782 | 0.0526 ± 0.0056 | 274.5 ± 9.1 | 278.5 ± 27.4 | 312.5 ± 261.1 | 0.56 | 1.46 |
| 010OTB-Gr2005 | 22.691 ± 0.771 | 0.0560 ± 0.0047 | 278.0 ± 9.3 | 297.4 ± 23.7 | 453.0 ± 198.2 | 0.62 | 6.98 |
| 011OTB-Gr2005 | 22.753 ± 0.842 | 0.0515 ± 0.0037 | 277.3 ± 10.1 | 275.7 ± 19.8 | 262.7 ± 174.3 | 0.69 | -0.58 |
| 012OTB-Gr2005 | 23.137 ± 0.879 | 0.0532 ± 0.0050 | 272.8 ± 10.2 | 279.5 ± 25.0 | 336.2 ± 228.3 | 0.61 | 2.46 |
| 016OTB-Gr2005 | 23.026 ± 0.714 | 0.0502 ± 0.0040 | 274.1 ± 8.3 | 266.9 ± 20.2 | 205.1 ± 194.4 | 0.49 | -2.63 |
| 017OTB-Gr2005 | 22.331 ± 0.782 | 0.0545 ± 0.0051 | 282.4 ± 9.7 | 294.6 ± 25.6 | 392.4 ± 223.4 | 0.56 | 4.32 |
| 018OTB-Gr2005 | 22.085 ± 0.685 | 0.0483 ± 0.0041 | 285.5 ± 8.7 | 267.5 ± 21.4 | 112.8 ± 112.7 | 0.45 | -6.30 |
| 019OTB-Gr2005 | 22.619 ± 0.746 | 0.0552 ± 0.0045 | 278.9 ± 9.0 | 294.7 ± 22.5 | 421.8 ± 191.8 | 0.77 | 5.67 |
| 020OTB-Gr2005 | 22.862 ± 0.777 | 0.0533 ± 0.0049 | 276.0 ± 9.2 | 282.9 ± 24.5 | 340.9 ± 223.0 | 0.41 | 2.50 |
| 021OTB-Gr2005 | 22.277 ± 0.780 | 0.0554 ± 0.0048 | 283.1 ± 9.7 | 299.2 ± 24.4 | 427.0 ± 204.2 | 0.56 | 5.69 |
| 022OTB-Gr2005 | 22.553 ± 0.880 | 0.0460 ± 0.0050 | 279.7 ± 10.7 | 251.8 ± 26.2 | 0.1 ± 0.0 | 0.66 | -9.97 |
| 026OTB-Gr2005 | 22.614 ± 0.769 | 0.0523 ± 0.0044 | 278.9 ± 9.3 | 281.1 ± 22.8 | 299.1 ± 206.4 | 0.56 | 0.79 |
| 027OTB-Gr2005 | 23.299 ± 0.839 | 0.0525 ± 0.0048 | 270.9 ± 9.6 | 274.5 ± 23.8 | 305.2 ± 221.8 | 0.57 | 1.33 |
| 028OTB-Gr2005 | 22.548 ± 0.722 | 0.0475 ± 0.0043 | 279.7 ± 8.8 | 259.0 ± 22.2 | 75.2 ± 75.1 | 0.64 | -7.40 |
| 029OTB-Gr2005 | 22.743 ± 0.819 | 0.0518 ± 0.0037 | 277.4 ± 9.8 | 277.3 ± 19.6 | 276.8 ± 171.3 | 0.71 | -0.04 |
| 030OTB-Gr2005 | 21.834 ± 0.721 | 0.0570 ± 0.0040 | 288.7 ± 9.3 | 312.2 ± 21.2 | 491.5 ± 164.7 | 0.65 | 8.14 |
| 031OTB-Gr2005 | 23.084 ± 0.808 | 0.0549 ± 0.0040 | 273.4 ± 9.4 | 287.9 ± 20.3 | 407.5 ± 169.7 | 0.56 | 5.30 |
| 032OTB-Gr2005 | 22.366 ± 0.671 | 0.0480 ± 0.0035 | 282.0 ± 8.3 | 263.3 ± 18.3 | 100.3 ± 100.2 | 0.57 | -6.63 |
| (OTB-Gr1902) | | | | | | | |
| 040OTB-Gr1902 | 21.993 ± 0.616 | 0.0542 ± 0.0023 | 286.6 ± 7.9 | 296.9 ± 13.2 | 378.0 ± 99.7 | 0.36 | 3.59 |
| 041OTB-Gr1902 | 22.183 ± 0.599 | 0.0515 ± 0.0020 | 284.2 ± 7.5 | 281.9 ± 11.6 | 262.7 ± 89.7 | 0.93 | -0.81 |
| 042OTB-Gr1902 | 22.401 ± 0.582 | 0.0539 ± 0.0019 | 281.5 ± 7.2 | 290.8 ± 11.2 | 365.9 ± 80.9 | 0.69 | 3.30 |
| 043OTB-Gr1902 | 21.022 ± 0.462 | 0.0522 ± 0.0012 | 299.6 ± 6.4 | 298.8 ± 8.3 | 293.1 ± 53.4 | 1.50 | -0.27 |
| 044OTB-Gr1902 | 22.272 ± 0.579 | 0.0504 ± 0.0021 | 283.1 ± 7.2 | 275.5 ± 11.9 | 211.4 ± 97.9 | 0.51 | -2.68 |
| 045OTB-Gr1902 | 22.311 ± 0.535 | 0.0518 ± 0.0016 | 282.6 ± 6.6 | 281.9 ± 9.6 | 275.4 ± 72.6 | 0.85 | -0.25 |
| 046OTB-Gr1902 | 22.376 ± 0.604 | 0.0523 ± 0.0021 | 281.8 ± 7.4 | 283.6 ± 12.2 | 298.3 ± 96.4 | 0.53 | 0.64 |
| 050OTB-Gr1902 | 22.222 ± 0.556 | 0.0525 ± 0.0020 | 283.8 ± 6.9 | 286.1 ± 11.3 | 305.5 ± 88.9 | 0.64 | 0.81 |
| 051OTB-Gr1902 | 22.517 ± 0.563 | 0.0514 ± 0.0020 | 280.1 ± 6.9 | 277.7 ± 11.0 | 257.1 ± 89.8 | 0.81 | -0.86 |
| 052OTB-Gr1902 | 22.852 ± 0.594 | 0.0536 ± 0.0021 | 276.1 ± 7.0 | 284.3 ± 12.0 | 352.5 ± 93.0 | 0.57 | 2.97 |
| 053OTB-Gr1902 | 22.779 ± 0.569 | 0.0525 ± 0.0019 | 277.0 ± 6.8 | 280.0 ± 11.1 | 305.0 ± 86.6 | 0.52 | 1.08 |
| 054OTB-Gr1902 | 22.198 ± 0.666 | 0.0522 ± 0.0022 | 284.0 ± 8.3 | 285.1 ± 13.0 | 293.7 ± 101.3 | 0.34 | 0.39 |
| 055OTB-Gr1902 | 22.717 ± 0.545 | 0.0510 ± 0.0018 | 277.7 ± 6.5 | 274.0 ± 10.4 | 242.7 ± 85.2 | 0.63 | -1.33 |
| 056OTB-Gr1902 | 22.153 ± 0.665 | 0.0543 ± 0.0030 | 284.6 ± 8.4 | 295.8 ± 16.6 | 385.2 ± 130.9 | 0.36 | 3.94 |
| 060OTB-Gr1902 | 22.894 ± 0.710 | 0.0509 ± 0.0022 | 275.6 ± 8.4 | 271.6 ± 13.0 | 237.2 ± 104.8 | 0.66 | -1.45 |
| 061OTB-Gr1902 | 22.999 ± 0.667 | 0.0525 ± 0.0017 | 274.4 ± 7.8 | 278.0 ± 10.5 | 308.2 ± 74.5 | 0.76 | 1.31 |
| 062OTB-Gr1902 | 22.789 ± 0.684 | 0.0513 ± 0.0022 | 276.8 ± 8.1 | 274.3 ± 12.6 | 253.3 ± 99.6 | 0.45 | -0.90 |
| 063OTB-Gr1902 | 22.732 ± 0.682 | 0.0530 ± 0.0023 | 277.5 ± 8.2 | 282.8 ± 12.9 | 327.1 ± 100.7 | 0.47 | 1.91 |
| 064OTB-Gr1902 | 23.111 ± 0.763 | 0.0576 ± 0.0031 | 273.0 ± 8.8 | 299.8 ± 16.2 | 513.4 ± 120.9 | 0.59 | 9.82 |
| 065OTB-Gr1902 | 22.594 ± 0.700 | 0.0531 ± 0.0026 | 279.2 ± 8.5 | 285.1 ± 14.5 | 333.8 ± 115.1 | 0.37 | 2.11 |

1) Discordance is calculated as :[ ($^{207}Pb/^{235}U$ age)/($^{206}Pb/^{238}U$ age) - 1 ] × 100 (%).

**Supplementary Table S-3**. LA-ICP-MS detrital zircon U-Pb data of psammitic schist sample.

| Spot Label | $^{238}U/^{206}Pb \pm 2\sigma$ | $^{207}Pb/^{206}Pb \pm 2\sigma$ | $^{206}Pb/^{238}U$ age (Ma, $\pm 2\sigma$) | $^{207}Pb/^{235}U$ age (Ma, $\pm 2\sigma$) | $^{207}Pb/^{206}Pb$ age (Ma, $\pm 2\sigma$) | Th/U | Disc.[1)] (%) | Remarks |
|---|---|---|---|---|---|---|---|---|
| 006OTB-PsS2002 | 23.485 ± 0.939 | 0.0551 ± 0.0054 | 268.8 ± 10.5 | 284.8 ± 26.7 | 418.0 ± 235.3 | 0.45 | 5.95 | |
| 007OTB-PsS2002 | 23.838 ± 1.097 | 0.0480 ± 0.0060 | 264.9 ± 12.0 | 248.7 ± 29.8 | 97.9 ± 97.8 | 0.62 | -6.12 | |
| 008OTB-PsS2002 | 23.240 ± 0.999 | 0.0544 ± 0.0065 | 271.6 ± 11.4 | 283.8 ± 31.9 | 385.5 ± 292.1 | 0.34 | 4.49 | |
| 009OTB-PsS2002 | 21.997 ± 0.616 | 0.0516 ± 0.0027 | 286.6 ± 7.9 | 284.5 ± 15.0 | 267.9 ± 126.3 | 0.55 | -0.73 | |
| 010OTB-PsS2002 | 22.732 ± 0.637 | 0.0538 ± 0.0024 | 277.5 ± 7.6 | 286.8 ± 13.1 | 363.8 ± 102.4 | 1.07 | 3.35 | |
| 011OTB-PsS2002 | 23.485 ± 1.127 | 0.0523 ± 0.0074 | 268.8 ± 12.6 | 271.7 ± 36.4 | 297.1 ± 297.0 | 0.89 | 1.08 | |
| 012OTB-PsS2002 | 23.111 ± 0.994 | 0.0516 ± 0.0044 | 273.1 ± 11.5 | 272.6 ± 23.2 | 269.1 ± 210.3 | 0.79 | -0.18 | |
| 013OTB-PsS2002 | 23.245 ± 0.930 | 0.0523 ± 0.0060 | 271.5 ± 10.6 | 274.2 ± 29.5 | 297.5 ± 283.3 | 0.29 | 0.99 | |
| 014OTB-PsS2002 | 16.085 ± 0.354 | 0.0579 ± 0.0012 | 388.8 ± 8.3 | 409.4 ± 10.2 | 527.0 ± 46.7 | 0.77 | 5.30 | |
| 015OTB-PsS2002 | 25.050 ± 0.852 | 0.0522 ± 0.0036 | 252.3 ± 8.4 | 256.6 ± 17.6 | 295.8 ± 165.7 | 0.56 | 1.70 | |
| 019OTB-PsS2002 | 23.240 ± 0.604 | 0.0535 ± 0.0019 | 271.6 ± 6.9 | 279.7 ± 10.8 | 348.4 ± 81.2 | 0.75 | 2.98 | |
| 020OTB-PsS2002 | 22.978 ± 0.689 | 0.0532 ± 0.0039 | 274.6 ± 8.1 | 281.4 ± 19.6 | 337.9 ± 174.4 | 0.75 | 2.48 | |
| 021OTB-PsS2002 | 23.518 ± 0.800 | 0.0533 ± 0.0046 | 268.4 ± 8.9 | 276.3 ± 22.7 | 343.3 ± 210.0 | 0.47 | 2.94 | |
| 023OTB-PsS2002 | 23.154 ± 0.903 | 0.0527 ± 0.0059 | 272.6 ± 10.4 | 277.1 ± 29.3 | 314.9 ± 277.0 | 0.40 | 1.65 | |
| 024OTB-PsS2002 | 23.998 ± 0.792 | 0.0537 ± 0.0035 | 263.2 ± 8.5 | 273.2 ± 17.9 | 360.4 ± 156.3 | 0.58 | 3.80 | |
| 025OTB-PsS2002 | 24.331 ± 0.730 | 0.0512 ± 0.0038 | 259.6 ± 7.6 | 258.6 ± 18.4 | 249.2 ± 179.9 | 0.78 | -0.39 | |
| 026OTB-PsS2002 | 25.100 ± 1.029 | 0.0576 ± 0.0073 | 251.8 ± 10.1 | 279.0 ± 33.0 | 513.8 ± 306.4 | 0.60 | 10.80 | discordant |
| 028OTB-PsS2002 | 24.272 ± 0.680 | 0.0738 ± 0.0030 | 260.3 ± 7.1 | 355.6 ± 15.1 | 1036.3 ± 85.1 | 0.52 | 36.61 | discordant |
| 032OTB-PsS2002 | 24.355 ± 0.828 | 0.0561 ± 0.0045 | 259.4 ± 8.7 | 279.9 ± 21.8 | 455.4 ± 190.6 | 0.44 | 7.90 | |
| 034OTB-PsS2002 | 23.929 ± 0.838 | 0.0571 ± 0.0032 | 263.9 ± 9.1 | 288.7 ± 16.7 | 494.1 ± 128.5 | 0.48 | 9.40 | |
| 035OTB-PsS2002 | 24.582 ± 0.983 | 0.0611 ± 0.0075 | 257.1 ± 10.1 | 299.3 ± 34.0 | 643.6 ± 289.1 | 0.48 | 16.41 | discordant |
| 036OTB-PsS2002 | 23.674 ± 0.971 | 0.0559 ± 0.0066 | 266.7 ± 10.7 | 286.3 ± 31.7 | 449.4 ± 286.1 | 0.54 | 7.35 | |
| 037OTB-PsS2002 | 23.267 ± 1.256 | 0.0556 ± 0.0112 | 271.3 ± 14.4 | 289.1 ± 54.0 | 435.6 ± 435.5 | 0.38 | 6.56 | |
| 038OTB-PsS2002 | 24.522 ± 0.736 | 0.0506 ± 0.0029 | 257.7 ± 7.6 | 254.4 ± 14.5 | 224.1 ± 137.4 | 0.71 | -1.28 | |
| 039OTB-PsS2002 | 24.631 ± 0.739 | 0.0510 ± 0.0043 | 256.6 ± 7.6 | 255.0 ± 20.3 | 241.1 ± 206.1 | 0.81 | -0.62 | |
| 040OTB-PsS2002 | 21.496 ± 1.139 | 0.0562 ± 0.0081 | 293.1 ± 15.2 | 312.7 ± 42.0 | 461.6 ± 355.7 | 0.46 | 6.69 | |
| 041OTB-PsS2002 | 22.671 ± 0.612 | 0.0482 ± 0.0038 | 278.3 ± 7.4 | 260.8 ± 19.3 | 107.0 ± 106.9 | 0.73 | -6.29 | |
| 045OTB-PsS2002 | 24.125 ± 0.676 | 0.0571 ± 0.0029 | 261.8 ± 7.2 | 286.8 ± 14.3 | 495.6 ± 114.1 | 0.57 | 9.55 | |
| 046OTB-PsS2002 | 23.929 ± 0.550 | 0.0538 ± 0.0013 | 263.9 ± 6.0 | 274.0 ± 8.0 | 361.5 ± 55.1 | 0.62 | 3.83 | |
| 047OTB-PsS2002 | 22.763 ± 0.911 | 0.0578 ± 0.0086 | 277.2 ± 10.9 | 304.7 ± 41.4 | 521.2 ± 365.4 | 0.34 | 9.92 | |
| 049OTB-PsS2002 | 17.615 ± 0.440 | 0.0564 ± 0.0027 | 356.0 ± 8.7 | 371.5 ± 16.9 | 469.5 ± 109.9 | 0.64 | 4.35 | |
| 050OTB-PsS2002 | 22.732 ± 0.864 | 0.0481 ± 0.0054 | 277.5 ± 10.3 | 260.1 ± 27.7 | 106.4 ± 106.3 | 0.92 | -6.27 | |
| 051OTB-PsS2002 | 21.137 ± 0.613 | 0.0733 ± 0.0040 | 298.0 ± 8.5 | 396.8 ± 20.6 | 1022.5 ± 115.5 | 0.62 | 33.15 | discordant |
| 052OTB-PsS2002 | 22.732 ± 0.818 | 0.0650 ± 0.0055 | 277.5 ± 9.8 | 337.5 ± 26.8 | 774.7 ± 189.8 | 0.53 | 21.62 | discordant |
| 053OTB-PsS2002 | 23.223 ± 0.673 | 0.0513 ± 0.0031 | 271.8 ± 7.7 | 269.7 ± 16.0 | 252.0 ± 144.2 | 0.51 | -0.77 | |
| 054OTB-PsS2002 | 21.997 ± 0.682 | 0.0533 ± 0.0036 | 286.6 ± 8.7 | 292.4 ± 19.0 | 339.5 ± 159.3 | 0.82 | 2.02 | |
| 055OTB-PsS2002 | 22.920 ± 0.733 | 0.0521 ± 0.0035 | 275.3 ± 8.6 | 277.0 ± 18.1 | 291.0 ± 160.8 | 0.79 | 0.62 | |
| 059OTB-PsS2002 | 23.821 ± 0.977 | 0.0610 ± 0.0064 | 265.1 ± 10.7 | 306.9 ± 30.4 | 637.9 ± 243.6 | 0.57 | 15.77 | discrodant |
| 061OTB-PsS2002 | 25.094 ± 0.778 | 0.0512 ± 0.0041 | 251.9 ± 7.7 | 251.4 ± 19.3 | 247.5 ± 195.4 | 0.53 | -0.20 | |
| 062OTB-PsS2002 | 24.038 ± 0.889 | 0.0496 ± 0.0049 | 262.7 ± 9.5 | 254.4 ± 23.9 | 178.0 ± 177.9 | 0.41 | -3.16 | |
| 063OTB-PsS2002 | 22.242 ± 0.645 | 0.0519 ± 0.0022 | 283.5 ± 8.0 | 283.3 ± 12.9 | 282.2 ± 101.5 | 0.72 | -0.07 | |
| 064OTB-PsS2002 | 25.000 ± 0.725 | 0.0540 ± 0.0027 | 252.8 ± 7.2 | 264.8 ± 13.6 | 372.6 ± 116.6 | 1.15 | 4.75 | |
| 065OTB-PsS2002 | 23.507 ± 0.682 | 0.0628 ± 0.0024 | 268.5 ± 7.6 | 318.5 ± 13.2 | 702.3 ± 83.0 | 0.35 | 18.62 | discordant |
| 066OTB-PsS2002 | 24.254 ± 0.631 | 0.0549 ± 0.0020 | 260.5 ± 6.6 | 275.9 ± 10.9 | 408.8 ± 85.0 | 1.11 | 5.91 | |
| 067OTB-PsS2002 | 22.070 ± 0.795 | 0.0550 ± 0.0050 | 285.7 ± 10.1 | 300.1 ± 25.5 | 413.9 ± 214.9 | 0.43 | 5.04 | |
| 068OTB-PsS2002 | 25.202 ± 0.907 | 0.0529 ± 0.0057 | 250.8 ± 8.9 | 258.1 ± 26.3 | 324.5 ± 265.8 | 0.48 | 2.91 | |
| 069OTB-PsS2002 | 21.954 ± 0.878 | 0.0728 ± 0.0076 | 287.1 ± 11.2 | 382.2 ± 36.0 | 1007.7 ± 226.7 | 0.56 | 33.12 | discordant |
| 073OTB-PsS2002 | 23.798 ± 0.619 | 0.0567 ± 0.0019 | 265.3 ± 6.8 | 288.4 ± 10.9 | 480.0 ± 76.9 | 0.64 | 8.71 | |
| 075OTB-PsS2002 | 23.981 ± 0.767 | 0.0530 ± 0.0035 | 263.4 ± 8.3 | 270.2 ± 17.5 | 329.8 ± 157.1 | 0.30 | 2.58 | |
| 076OTB-PsS2002 | 24.432 ± 0.782 | 0.0540 ± 0.0039 | 258.6 ± 8.1 | 270.1 ± 19.1 | 370.9 ± 173.4 | 0.60 | 4.45 | |
| 077OTB-PsS2002 | 24.746 ± 0.891 | 0.0565 ± 0.0043 | 255.3 ± 9.0 | 277.7 ± 20.6 | 471.0 ± 177.7 | 0.60 | 8.77 | |
| 078OTB-PsS2002 | 23.277 ± 0.978 | 0.0536 ± 0.0055 | 271.1 ± 11.2 | 280.1 ± 27.3 | 355.8 ± 248.4 | 0.31 | 3.32 | |
| 079OTB-PsS2002 | 23.513 ± 0.564 | 0.0501 ± 0.0018 | 268.5 ± 6.3 | 261.7 ± 10.0 | 200.7 ± 85.8 | 0.73 | -2.53 | |
| 080OTB-PsS2002 | 24.184 ± 0.871 | 0.0454 ± 0.0050 | 261.2 ± 9.2 | 233.7 ± 24.7 | 0.1 ± 0.0 | 0.41 | -10.53 | discordant |
| 081OTB-PsS2002 | 21.749 ± 0.870 | 0.0512 ± 0.0054 | 289.8 ± 11.3 | 285.5 ± 28.3 | 250.8 ± 250.7 | 0.42 | -1.48 | |
| 082OTB-PsS2002 | 21.580 ± 0.691 | 0.0517 ± 0.0036 | 292.0 ± 9.1 | 289.6 ± 19.3 | 270.5 ± 166.4 | 0.51 | -0.82 | |
| 083OTB-PsS2002 | 24.950 ± 0.649 | 0.0544 ± 0.0028 | 253.3 ± 6.5 | 266.7 ± 13.5 | 385.5 ± 118.8 | 0.88 | 5.29 | |
| 088OTB-PsS2002 | 25.465 ± 0.968 | 0.0514 ± 0.0037 | 248.3 ± 9.3 | 249.4 ± 18.1 | 259.5 ± 174.4 | 0.83 | 0.44 | |
| 090OTB-PsS2002 | 24.588 ± 0.664 | 0.0537 ± 0.0020 | 257.0 ± 6.8 | 267.1 ± 11.1 | 357.0 ± 88.1 | 0.64 | 3.93 | |
| 091OTB-PsS2002 | 22.036 ± 0.926 | 0.0534 ± 0.0057 | 286.1 ± 11.8 | 292.6 ± 29.4 | 344.6 ± 259.5 | 0.59 | 2.27 | |
| 092OTB-PsS2002 | 17.655 ± 0.441 | 0.0585 ± 0.0019 | 355.2 ± 8.6 | 382.2 ± 13.1 | 549.3 ± 73.7 | 0.90 | 7.60 | |
| 093OTB-PsS2002 | 23.485 ± 1.057 | 0.0552 ± 0.0071 | 268.8 ± 11.9 | 285.2 ± 34.6 | 422.0 ± 317.1 | 0.26 | 6.10 | |
| 094OTB-PsS2002 | 24.486 ± 0.735 | 0.0528 ± 0.0037 | 258.0 ± 7.6 | 264.1 ± 18.1 | 318.4 ± 170.0 | 0.51 | 2.36 | |
| 095OTB-PsS2002 | 20.969 ± 1.153 | 0.0515 ± 0.0077 | 300.3 ± 16.2 | 296.1 ± 41.7 | 263.3 ± 263.2 | 0.70 | -1.40 | |
| 096OTB-PsS2002 | 22.427 ± 0.763 | 0.0509 ± 0.0054 | 281.2 ± 9.4 | 276.2 ± 27.2 | 234.0 ± 233.9 | 0.77 | -1.78 | |
| 097OTB-PsS2002 | 25.170 ± 0.730 | 0.0508 ± 0.0034 | 251.1 ± 7.1 | 249.5 ± 16.3 | 233.7 ± 162.4 | 0.41 | -0.64 | |
| 101OTB-PsS2002 | 22.925 ± 0.734 | 0.0552 ± 0.0030 | 275.2 ± 8.6 | 290.8 ± 16.3 | 418.3 ± 127.8 | 0.74 | 5.67 | |
| 102OTB-PsS2002 | 24.343 ± 0.949 | 0.0564 ± 0.0069 | 259.5 ± 9.9 | 281.4 ± 32.2 | 467.2 ± 298.3 | 0.51 | 8.44 | |
| 103OTB-PsS2002 | 23.952 ± 0.982 | 0.0513 ± 0.0056 | 263.7 ± 10.6 | 262.6 ± 27.2 | 253.1 ± 253.0 | 0.47 | -0.42 | |
| 104OTB-PsS2002 | 25.284 ± 0.708 | 0.0512 ± 0.0019 | 250.1 ± 6.9 | 250.1 ± 10.2 | 250.6 ± 87.5 | 0.94 | 0.00 | |
| 105OTB-PsS2002 | 22.609 ± 0.588 | 0.0530 ± 0.0023 | 279.0 ± 7.1 | 284.6 ± 12.5 | 330.6 ± 100.6 | 0.49 | 2.01 | |
| 106OTB-PsS2002 | 25.355 ± 1.040 | 0.0477 ± 0.0059 | 249.4 ± 10.0 | 234.0 ± 27.7 | 81.9 ± 81.8 | 0.57 | -6.17 | |
| 107OTB-PsS2002 | 26.096 ± 0.887 | 0.0523 ± 0.0038 | 242.4 ± 8.1 | 247.6 ± 17.7 | 297.0 ± 173.2 | 0.74 | 2.15 | |
| 108OTB-PsS2002 | 24.450 ± 0.660 | 0.0515 ± 0.0026 | 258.4 ± 6.8 | 258.9 ± 13.1 | 263.5 ± 119.0 | 0.66 | 0.19 | |
| 109OTB-PsS2002 | 22.599 ± 0.904 | 0.1482 ± 0.0081 | 279.1 ± 10.9 | 653.8 ± 33.3 | 2324.7 ± 97.5 | 0.54 | 134.25 | discordant |
| 110OTB-PsS2002 | 23.629 ± 0.969 | 0.0573 ± 0.0067 | 267.2 ± 10.7 | 293.0 ± 32.1 | 504.2 ± 280.6 | 0.30 | 9.66 | |
| 111OTB-PsS2002 | 25.075 ± 1.103 | 0.0530 ± 0.0067 | 252.1 ± 10.9 | 259.4 ± 31.2 | 326.7 ± 317.3 | 0.46 | 2.90 | |

1) Discordance is calculated as :[ ($^{207}Pb/^{235}U$ age)/($^{206}Pb/^{238}U$ age) - 1 ] × 100 (%).

**Supplementary Table S-4.** Result of XRF whole-rock chemical compositions of four tonalite mylonite samples.

| Sample | OTB-Gr1901 | OTB-Gr2004 | OTB-Gr2005 | OTB-Gr2006 |
|---|---|---|---|---|
| Rock type | Tonalite | | | |
| (wt%) | | | | |
| $SiO_2$ | 78.36 | 77.54 | 75.89 | 78.19 |
| $TiO_2$ | 0.23 | 0.18 | 0.30 | 0.21 |
| $Al_2O_3$ | 12.17 | 12.45 | 12.95 | 12.21 |
| $Fe_2O_3$* | 1.64 | 2.03 | 1.94 | 1.31 |
| MnO | 0.02 | 0.02 | 0.02 | 0.01 |
| MgO | 0.65 | 0.76 | 0.76 | 0.55 |
| CaO | 0.97 | 0.52 | 0.76 | 0.98 |
| $Na_2O$ | 5.92 | 6.27 | 6.38 | 5.97 |
| $K_2O$ | 0.19 | 0.11 | 0.12 | 0.27 |
| $P_2O_5$ | 0.04 | 0.04 | 0.04 | 0.03 |
| Total | 100.19 | 99.91 | 99.16 | 99.73 |
| $K_2O/Na_2O$ | 0.03 | 0.02 | 0.02 | 0.05 |
| A/CNK | 1.04 | 1.10 | 1.08 | 1.03 |
| A/NK | 1.22 | 1.19 | 1.22 | 1.21 |
| (ppm) | | | | |
| Sc | 6.8 | 24.9 | 24.4 | 22.0 |
| V | 20.0 | 20.1 | 18.4 | 20.4 |
| Cr | 6.3 | 3.8 | 7.4 | 4.2 |
| Co | 2.8 | 3.6 | 3.4 | 2.7 |
| Ni | 3.8 | 3.1 | 4.5 | 3.8 |
| Cu | 48.7 | 8.2 | 10.7 | 31.6 |
| Zn | 7.7 | 9.4 | 11.3 | 5.1 |
| Ga | 10.3 | 11.1 | 8.1 | 11.0 |
| Rb | 7.3 | 6.3 | 4.7 | 10.5 |
| Sr | 51.9 | 125 | 83.5 | 63.7 |
| Y | 29.5 | 20.0 | 22.5 | 29.4 |
| Zr | 141 | 74.8 | 154 | 133 |
| Nb | 4.1 | 2.3 | 4.3 | 4.5 |
| Ba | 65.7 | 44.4 | 66.6 | 81.0 |
| La | 9.9 | 8.3 | 7.9 | 14.7 |
| Ce | 18.7 | 12.0 | 21.3 | 31.8 |
| Nd | 9.0 | 6.4 | 10.9 | 15.0 |
| Yb | 3.4 | 1.9 | 2.5 | 2.8 |
| Hf | 3.8 | 1.8 | 4.9 | 4.9 |
| Th | 6.8 | 2.1 | 7.3 | 5.5 |
| U | 1.0 | <LLD | <LLD | <LLD |

$Fe_2O_3$*: total Fe as $Fe_2O_3$.

A/CNK value: molar $Al_2O_3/(CaO + Na_2O + K_2O)$.

A/NK value: molar $Al_2O_3/(Na_2O + K_2O)$.

LLD: Lower limit of detection.