



**Figure S1.** Map showing Greek and Bulgarian collection sites of grapevine samples [22]. Sites are numbered according to Table S1.

**Table S1.** Locations and varieties of collected samples in Greece and Bulgaria.

| Bulgarian location |                | Grape variety                                              |
|--------------------|----------------|------------------------------------------------------------|
| 1.                 | Shishmanovo    | Tamyanka, Rubin, Mavrud                                    |
| 2.                 | Kolarovo       | Pamid                                                      |
| 3.                 | Dimitrovche    | Mavrud, Tamyanka, Dimyat                                   |
| 4.                 | Vranya         | Ruen, Shizoka Melnishkaloza, Keratsouda                    |
| 5.                 | Mitino         | Shizoka Melnishkaloza                                      |
| 6.                 | Starchevo      | Mishej Sandanski                                           |
| 7.                 | Slivnitsa      | Keratsouda                                                 |
| 8.                 | Kzesha         | Keratsouda                                                 |
| 9.                 | Gzadeshnitza   | Keratsouda                                                 |
| Greek location     |                | Grape variety                                              |
| 10.                | Alexandroupoli | Keratsouda                                                 |
| 11.                | Avdira         | Pamid (also known as 'Pamidi'), Zoumiatiko                 |
| 12.                | Soufli         | Mavrud (also known as 'Mavroudi'), Bogialamas, Karnachalas |
| 13.                | Thermi         | Limnio, Sefka                                              |

**Table S2.** Information for used microsatellite markers.

| Markers | Primers                                                    | Fluorescent dye | Allelic range (bp) | Polymorphism (number of different alleles) | Chromosome | T <sub>m</sub> (°C) | Repeat motif      | Reference |
|---------|------------------------------------------------------------|-----------------|--------------------|--------------------------------------------|------------|---------------------|-------------------|-----------|
| VvS2    | F:CAGCCCGTAAATGTATCCATC<br>R:AAATTCAAAATTCTAATCACTGG       | FAM             | 129-148            | 8                                          | 11         | 57.9                | (GA) <sub>n</sub> | [6]       |
| VvMD7   | F:AGAGTTGCGGAGAACAGGAT<br>R:CGAACCTTCACACGCTTGAT           | FAM             | 232-257            | 9                                          | 7          | 57.3                | (CT) <sub>n</sub> | [7]       |
| VvMD25  | F:TTCCGTAAAGCAAAAGAAAAAGG<br>R:TTGGATTTGAAATTTATTGAGGGG    | HEX             | 243-259            | 4                                          | 11         | 55.9                | (CT) <sub>n</sub> | [8]       |
| VvMD27  | F:GTACCAGATCTGAATACATCCGTAAGT<br>R:ACGGGTATAGAGCAAACGGTGT  | HEX             | 175-194            | 8                                          | 5          | 61.9                | (CT) <sub>n</sub> | [8]       |
| VrZAG47 | F:GTTCTTGGTCTGAATACATCCGTAAGT<br>R:ACGGTGTGCTCTCATTGTCATTG | TAMRA           | 162-181            | 8                                          | 5          | 61.9                | (GA) <sub>n</sub> | [24]      |
| VrZAG62 | F:GGTGAAATGGGCACCGAACACACGC<br>R:CCATGTCTCTCCTCAGCTTCTCAGC | FAM             | 185-204            | 6                                          | 7          | 67.9                | (GA) <sub>n</sub> | [25]      |
| VrZAG79 | F:AGATTGTGGAGGAGGGAACAAACCG<br>R:TGCCCCCATTTCAAACCTCCCTTCC | TAMRA           | 239-261            | 10                                         | 5          | 64.6                | (GA) <sub>n</sub> | [25]      |

**Table S3.** Pairwise  $F_{ST}$  values among Bulgarian populations. Each color represents populations of the same variety (different for each variety), coming from different producers and sampling areas. All populations of the same variety are statistically undifferentiated (pairwise tests of differentiation in FSTAT software), with their  $F_{ST}$  values being non-different from zero ( $P < 0.05$ ). This scenario is evident, with no exception, for all the Bulgarian varieties studied.

| Population                |           |           |         |         |                           |                           |             |             |             |             |             |             |             |             |             |
|---------------------------|-----------|-----------|---------|---------|---------------------------|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Population                | Tamyanka1 | Tamyanka2 | Mavrud1 | Mavrud2 | Shizoka<br>Melnishkaloza1 | Shizoka<br>Melnishkaloza2 | Keratsouda1 | Keratsouda2 | Keratsouda3 | Keratsouda4 | Keratsouda5 | Keratsouda6 | Keratsouda7 | Keratsouda8 | Keratsouda9 |
| Tamyanka1                 |           | -0.0044   | 0.2820  | 0.2517  | 0.3811                    | 0.3580                    | 0.3875      | 0.3807      | 0.3371      | 0.3916      | 0.3916      | 0.3525      | 0.3805      | 0.3744      | 0.3808      |
| Tamyanka2                 |           |           | 0.3247  | 0.2717  | 0.4394                    | 0.4241                    | 0.4271      | 0.4050      | 0.3533      | 0.4321      | 0.4321      | 0.3860      | 0.4133      | 0.4125      | 0.4215      |
| Mavrud1                   |           |           |         | -0.0016 | 0.2892                    | 0.2815                    | 0.4213      | 0.3886      | 0.3309      | 0.4254      | 0.4254      | 0.3629      | 0.4015      | 0.4098      | 0.4167      |
| Mavrud2                   |           |           |         |         | 0.2765                    | 0.2543                    | 0.3318      | 0.3175      | 0.2735      | 0.3358      | 0.3358      | 0.2888      | 0.3189      | 0.3199      | 0.3259      |
| Shizoka<br>Melnishkaloza1 |           |           |         |         |                           | -0.0037                   | 0.3910      | 0.3678      | 0.3082      | 0.3929      | 0.3929      | 0.3168      | 0.3835      | 0.3914      | 0.3938      |
| Shizoka<br>Melnishkaloza2 |           |           |         |         |                           |                           | 0.3989      | 0.3573      | 0.2893      | 0.4008      | 0.4008      | 0.3145      | 0.3824      | 0.4026      | 0.4050      |
| Keratsouda1               |           |           |         |         |                           |                           |             | 0.0007      | -0.0009     | 0.0000      | 0.0000      | 0.0002      | -0.0007     | 0.0000      | 0.0000      |
| Keratsouda2               |           |           |         |         |                           |                           |             |             | -0.0046     | -0.0016     | -0.0016     | -0.0019     | -0.0093     | -0.0035     | -0.0020     |
| Keratsouda3               |           |           |         |         |                           |                           |             |             |             | 0.0004      | 0.0004      | -0.0134     | -0.0054     | -0.0080     | -0.0054     |
| Keratsouda4               |           |           |         |         |                           |                           |             |             |             |             | 0.0000      | 0.0009      | -0.0001     | 0.0000      | 0.0000      |
| Keratsouda5               |           |           |         |         |                           |                           |             |             |             |             |             | 0.0009      | -0.0001     | 0.0000      | 0.0000      |
| Keratsouda6               |           |           |         |         |                           |                           |             |             |             |             |             |             | 0.0006      | -0.0021     | -0.0007     |
| Keratsouda7               |           |           |         |         |                           |                           |             |             |             |             |             |             |             | -0.0033     | -0.0025     |
| Keratsouda8               |           |           |         |         |                           |                           |             |             |             |             |             |             |             |             | 0.0000      |
| Keratsouda9               |           |           |         |         |                           |                           |             |             |             |             |             |             |             |             |             |

**Table S4.** Greek (1-8) and Bulgarian (9-17) populations-varieties used in the present study. Letters G and B in parentheses stand for Greek and Bulgarian, respectively.

| <b>Population</b> | <b>Variety</b>                       | <b>Number of samples</b> |
|-------------------|--------------------------------------|--------------------------|
| Population 1      | Pamid(G) (also known as ‘Pamidi’)    | 14                       |
| Population 2      | Keratsouda(G)                        | 10                       |
| Population 3      | Zoumiatiko                           | 10                       |
| Population 4      | Limnio                               | 10                       |
| Population 5      | Sefka                                | 10                       |
| Population 6      | Mavrud(G) (also known as ‘Mavroudi’) | 9                        |
| Population 7      | Bogialamas                           | 10                       |
| Population 8      | Karnachalas                          | 10                       |
| Population 9      | Tamyanka                             | 26                       |
| Population 10     | Mavrud(B)                            | 26                       |
| Population 11     | Rubin                                | 20                       |
| Population 12     | Pamid(B)                             | 8                        |
| Population 13     | Dimyat                               | 19                       |
| Population 14     | Ruen                                 | 20                       |
| Population 15     | Shizoka Melnishkaloza                | 36                       |
| Population 16     | Mishej Sandanski                     | 27                       |
| Population 17     | Keratsouda(B)                        | 119                      |
| <b>Total</b>      |                                      | <b>384</b>               |

**Table S5.** Pairwise  $F_{ST}$  values between all possible pairs of the studied populations.

| Population       |          |               |            |        |        |           |            |             |          |           |        |          |        |        |                          |                     |               |
|------------------|----------|---------------|------------|--------|--------|-----------|------------|-------------|----------|-----------|--------|----------|--------|--------|--------------------------|---------------------|---------------|
| Population       | Pamid(G) | Keratsouda(G) | Zoumiatiko | Limnio | Sefka  | Mavrud(G) | Bogialamas | Karnachalas | Tamyanka | Mavrud(B) | Rubin  | Pamid(B) | Dimyat | Ruen   | Shizoka<br>Melnishkaloza | Mishej<br>Sandanski | Keratsouda(B) |
| Pamid(G)         | 0.0000   | 0.4566        | 0.4107     | 0.4940 | 0.5047 | 0.4502    | 0.4785     | 0.4866      | 0.4298   | 0.3593    | 0.5326 | -0.0040  | 0.4105 | 0.4860 | 0.4979                   | 0.4449              | 0.2794        |
| Keratsouda(G)    |          | 0.0000        | 0.4118     | 0.6000 | 0.6154 | 0.4913    | 0.5627     | 0.4730      | 0.3814   | 0.4139    | 0.4988 | 0.4582   | 0.3978 | 0.5957 | 0.5838                   | 0.5095              | 0.4266        |
| Zoumiatiko       |          |               | 0.0000     | 0.5200 | 0.4783 | 0.3374    | 0.5089     | 0.4991      | 0.3835   | 0.2871    | 0.5073 | 0.3986   | 0.0000 | 0.5241 | 0.5091                   | 0.3811              | 0.4429        |
| Limnio           |          |               |            | 0.0000 | 0.4286 | 0.3553    | 0.4086     | 0.3150      | 0.3617   | 0.2754    | 0.4931 | 0.4640   | 0.5205 | 0.5797 | 0.5828                   | 0.4464              | 0.5398        |
| Sefka            |          |               |            |        | 0.0000 | 0.3553    | 0.5136     | 0.3492      | 0.4132   | 0.2727    | 0.5083 | 0.4837   | 0.4783 | 0.5231 | 0.5407                   | 0.4072              | 0.5407        |
| Mavrud(G)        |          |               |            |        |        | 0.0000    | 0.3259     | 0.3208      | 0.2906   | 0.0175    | 0.3948 | 0.4057   | 0.3447 | 0.3987 | 0.3258                   | 0.2693              | 0.4310        |
| Bogialamas       |          |               |            |        |        |           | 0.0000     | 0.3857      | 0.3660   | 0.2600    | 0.5007 | 0.4620   | 0.5045 | 0.5527 | 0.5056                   | 0.4729              | 0.5158        |
| Karnachalas      |          |               |            |        |        |           |            | 0.0000      | 0.2761   | 0.2784    | 0.3501 | 0.4620   | 0.5052 | 0.4844 | 0.5081                   | 0.4235              | 0.4940        |
| Tamyanka         |          |               |            |        |        |           |            |             | 0.0000   | 0.2701    | 0.2612 | 0.3977   | 0.3969 | 0.3859 | 0.3908                   | 0.1835              | 0.4205        |
| Mavrud(B)        |          |               |            |        |        |           |            |             |          | 0.0000    | 0.3536 | 0.3192   | 0.2987 | 0.3392 | 0.2741                   | 0.2267              | 0.3720        |
| Rubin            |          |               |            |        |        |           |            |             |          |           | 0.0000 | 0.5107   | 0.5089 | 0.4338 | 0.4813                   | 0.3924              | 0.4701        |
| Pamid(B)         |          |               |            |        |        |           |            |             |          |           |        | 0.0000   | 0.4031 | 0.4541 | 0.4647                   | 0.4026              | 0.2507        |
| Dimyat           |          |               |            |        |        |           |            |             |          |           |        |          | 0.0000 | 0.5184 | 0.5002                   | 0.3885              | 0.4412        |
| Ruen             |          |               |            |        |        |           |            |             |          |           |        |          |        | 0.0000 | 0.2902                   | 0.3325              | 0.3576        |
| Shizoka          |          |               |            |        |        |           |            |             |          |           |        |          |        |        |                          |                     |               |
| Melnishkaloza    |          |               |            |        |        |           |            |             |          |           |        |          |        |        | 0.0000                   | 0.2881              | 0.3469        |
| Mishej Sandanski |          |               |            |        |        |           |            |             |          |           |        |          |        |        |                          | 0.0000              | 0.3787        |
| Keratsouda(B)    |          |               |            |        |        |           |            |             |          |           |        |          |        |        |                          |                     | 0.0000        |

**Table S6.** Population differentiation analysis implemented in FSTAT 2.9.3.2 software.

| Population               | Population |               |            |        |       |           |            |             |          |           |       |          |        |      |                          |                  |               |
|--------------------------|------------|---------------|------------|--------|-------|-----------|------------|-------------|----------|-----------|-------|----------|--------|------|--------------------------|------------------|---------------|
|                          | Pamid(G)   | Keratsouda(G) | Zoumiatiko | Limnio | Sefka | Mavrud(G) | Bogialamas | Karnachalas | Tamyanka | Mavrud(B) | Rubin | Pamid(B) | Dimyat | Ruen | Shizoka<br>Melnishkaloza | Mishej Sandanski | Keratsouda(B) |
| Pamid(G)                 |            | ***           | ***        | ***    | ***   | ***       | ***        | ***         | ***      | ***       | ***   | NS       | ***    | ***  | ***                      | ***              | ***           |
| Keratsouda(G)            |            |               | **         | **     | ***   | **        | **         | ***         | ***      | ***       | ***   | **       | ***    | ***  | ***                      | ***              | ***           |
| Zoumiatiko               |            |               |            | ***    | **    | **        | **         | ***         | ***      | ***       | ***   | **       | NS     | ***  | ***                      | ***              | ***           |
| Limnio                   |            |               |            |        | **    | **        | **         | ***         | ***      | ***       | ***   | **       | ***    | ***  | ***                      | ***              | ***           |
| Sefka                    |            |               |            |        |       | **        | **         | ***         | ***      | ***       | ***   | **       | ***    | ***  | ***                      | ***              | ***           |
| Mavrud(G)                |            |               |            |        |       |           | **         | ***         | ***      | NS        | ***   | **       | ***    | ***  | ***                      | ***              | ***           |
| Bogialamas               |            |               |            |        |       |           |            | **          | ***      | ***       | ***   | **       | ***    | ***  | ***                      | ***              | ***           |
| Karnachalas              |            |               |            |        |       |           |            |             | ***      | ***       | ***   | **       | ***    | ***  | ***                      | ***              | ***           |
| Tamyanka                 |            |               |            |        |       |           |            |             |          | ***       | ***   | ***      | ***    | ***  | ***                      | ***              | ***           |
| Mavrud(B)                |            |               |            |        |       |           |            |             |          |           | ***   | ***      | ***    | ***  | ***                      | ***              | ***           |
| Rubin                    |            |               |            |        |       |           |            |             |          |           |       | ***      | ***    | ***  | ***                      | ***              | ***           |
| Pamid(B)                 |            |               |            |        |       |           |            |             |          |           |       |          | ***    | ***  | ***                      | ***              | **            |
| Dimyat                   |            |               |            |        |       |           |            |             |          |           |       |          |        | ***  | ***                      | ***              | ***           |
| Ruen                     |            |               |            |        |       |           |            |             |          |           |       |          |        |      | ***                      | ***              | ***           |
| Shizoka<br>Melnishkaloza |            |               |            |        |       |           |            |             |          |           |       |          |        |      |                          | ***              | ***           |
| Mishej Sandanski         |            |               |            |        |       |           |            |             |          |           |       |          |        |      |                          |                  | ***           |
| Keratsouda(B)            |            |               |            |        |       |           |            |             |          |           |       |          |        |      |                          |                  |               |

\*  $P < 0.05$ ; \*\*  $P < 0.01$ ; \*\*\*  $P < 0.001$ . NS: non-significant.