

## Supplementary Material

### Early ongoing speciation of *Ogataea uvarum* Sp. Nov. within the grape ecosystem revealed by the internal variability among the rDNA operon repeats

Luca Roscini<sup>1♦</sup>, Mariana Tristezza<sup>2♦</sup>, Laura Corte<sup>1</sup>, Claudia Colabella<sup>1</sup>, Carla Perrotta<sup>3</sup>, Patrizia Rampino<sup>3</sup>, Vincent Robert<sup>4</sup>, Duong Vu<sup>4</sup>, Gianluigi Cardinali<sup>1,5\*</sup> and Francesco Grieco<sup>2\*</sup>

<sup>1</sup> Department of Pharmaceutical Sciences - Microbiology, University of Perugia, Perugia, Italy,

<sup>2</sup> Institute of Sciences of Food Production (ISPA), National Research Council (CNR), Lecce (Italy), <sup>3</sup> Department of Biological and Environmental Sciences and Technologies, University of Salento, Lecce, Italy, <sup>4</sup> Bioinformatics Unit – Westerdijk Fungal Biodiversity Institute – Utrecht, Netherlands, <sup>5</sup> CEMIN, Centre of Excellence on Nanostructured Innovative Materials, Department of Chemistry Biology and Biotechnology, University of Perugia, Perugia, Italy.

♦ Both authors contributed equally to this work

#### \*CORRESPONDENCE

Dr. Gianluigi Cardinali

[gianluigi.cardinali@unipg.it](mailto:gianluigi.cardinali@unipg.it)

Dr. Francesco Grieco

e.mail, [francesco.grieco@ispa.cnr.it](mailto:francesco.grieco@ispa.cnr.it)

**Table S1.** GenBank deposit numbers of the sequences of each *O. uvarum* clone obtained by using the M13 forward and M13 reverse primers and the consequent consensus sequences are shown.

| SampleID | GenBank Number | Sequence Type |
|----------|----------------|---------------|
| C_71     | KY971642       | Consensus     |
| C_71_F   | KY930781       | Forward       |
| C_71_R   | KY930782       | Reverse       |
| C_73     | KY971643       | Consensus     |
| C_73_F   | KY930783       | Forward       |
| C_73_R   | KY930784       | Reverse       |
| C_74     | KY971644       | Consensus     |

|        |          |           |
|--------|----------|-----------|
| C_74_F | KY930785 | Forward   |
| C_74_R | KY930786 | Reverse   |
| C_76   | KY971645 | Consensus |
| C_76_F | KY930787 | Forward   |
| C_76_R | KY930788 | Reverse   |
| C_77_F | KY930789 | Forward   |
| C_81_F | KY930790 | Forward   |
| C_82   | KY971646 | Consensus |
| C_82_F | KY930791 | Forward   |
| C_82_R | KY930792 | Reverse   |
| C_83   | KY971647 | Consensus |
| C_83_F | KY930793 | Forward   |
| C_83_R | KY930794 | Reverse   |
| C_84   | KY971648 | Consensus |
| C_84_F | KY930795 | Forward   |
| C_84_R | KY930796 | Reverse   |
| C_86   | KY971649 | Consensus |
| C_86_F | KY930797 | Forward   |
| C_86_R | KY930798 | Reverse   |
| C_87   | KY971650 | Consensus |
| C_87_F | KY930799 | Forward   |
| C_87_R | KY930800 | Reverse   |
| C_91   | KY971651 | Consensus |
| C_91_F | KY930801 | Forward   |
| C_91_R | KY930802 | Reverse   |
| C_93   | KY971652 | Consensus |
| C_93_F | KY930803 | Forward   |
| C_93_R | KY930804 | Reverse   |
| C_94   | KY971653 | Consensus |
| C_94_F | KY930805 | Forward   |
| C_94_R | KY930806 | Reverse   |
| C_95   | KY971654 | Consensus |
| C_95_F | KY930807 | Forward   |
| C_95_R | KY930808 | Reverse   |
| C_96   | KY971655 | Consensus |

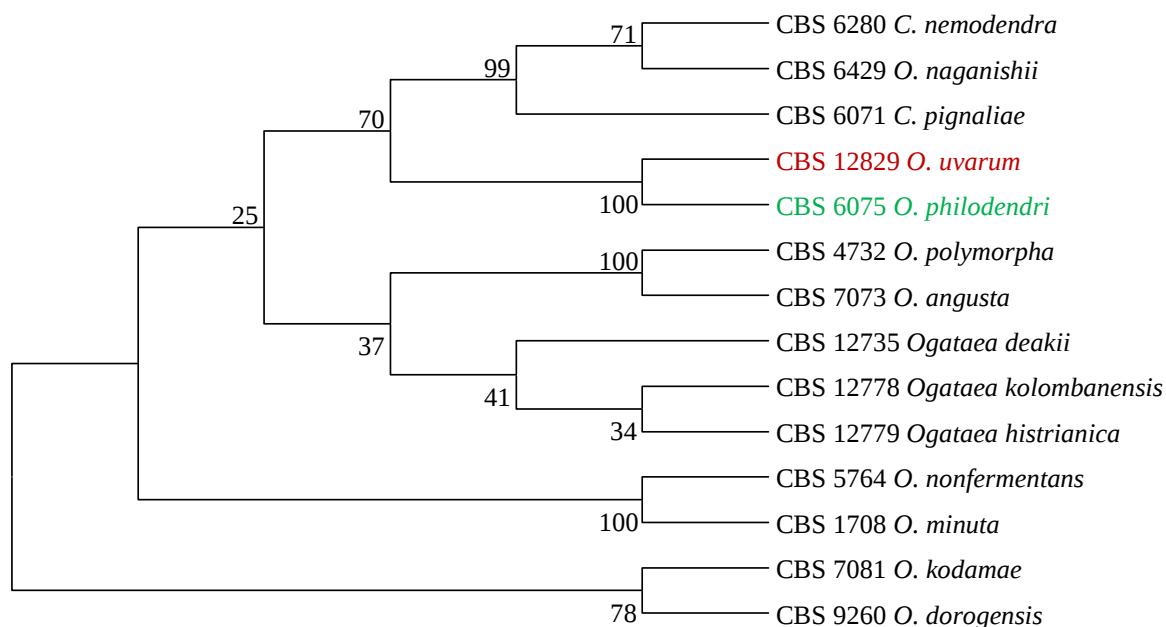
|         |          |           |
|---------|----------|-----------|
| C_96_F  | KY930809 | Forward   |
| C_96_R  | KY930810 | Reverse   |
| C_97    | KY971656 | Consensus |
| C_97_F  | KY930811 | Forward   |
| C_97_R  | KY930812 | Reverse   |
| C_98_R  | KY930813 | Reverse   |
| C_102   | KY971658 | Consensus |
| C_102_F | KY930814 | Forward   |
| C_102_R | KY930815 | Reverse   |
| C_103   | KY971659 | Consensus |
| C_103_F | KY930816 | Forward   |
| C_103_R | KY930817 | Reverse   |
| C_104   | KY971660 | Consensus |
| C_104_F | KY930818 | Forward   |
| C_104_R | KY930819 | Reverse   |
| C_105   | KY971661 | Consensus |
| C_105_F | KY930820 | Forward   |
| C_105_R | KY930821 | Reverse   |
| C_106   | KY971662 | Consensus |
| C_106_F | KY930822 | Forward   |
| C_106_R | KY930823 | Reverse   |
| C_107   | KY971663 | Consensus |
| C_107_F | KY930824 | Forward   |
| C_107_R | KY930825 | Reverse   |
| C_109   | KY971664 | Consensus |
| C_109_F | KY930826 | Forward   |
| C_109_R | KY930827 | Reverse   |
| C_110   | KY971665 | Consensus |
| C_110_F | KY930828 | Forward   |
| C_110_R | KY930829 | Reverse   |
| C_111   | KY971666 | Consensus |
| C_111_F | KY930830 | Forward   |
| C_111_R | KY930831 | Reverse   |
| C_112_F | KY930832 | Forward   |
| C_113   | KY971668 | Consensus |
| C_113_F | KY930833 | Forward   |

|         |          |           |
|---------|----------|-----------|
| C_113_R | KY930834 | Reverse   |
| C_114   | KY971669 | Consensus |
| C_114_F | KY930835 | Forward   |
| C_114_R | KY930836 | Reverse   |
| C_115   | KY971670 | Consensus |
| C_115_F | KY930837 | Forward   |
| C_115_R | KY930838 | Reverse   |
| C_116   | KY971671 | Consensus |
| C_116_F | KY930839 | Forward   |
| C_116_R | KY930840 | Reverse   |
| C_117   | KY971672 | Consensus |
| C_117_F | KY930841 | Forward   |
| C_117_R | KY930842 | Reverse   |
| C_118_F | KY930843 | Forward   |
| C_119   | KY971674 | Consensus |
| C_119_F | KY930844 | Forward   |
| C_119_R | KY930845 | Reverse   |
| C_120   | KY971675 | Consensus |
| C_120_R | KY930846 | Reverse   |
| C_120_F | KY930847 | Forward   |
| C_121   | KY971676 | Consensus |
| C_121_F | KY930848 | Forward   |
| C_121_R | KY930849 | Reverse   |
| C_122   | KY971677 | Consensus |
| C_122_F | KY930850 | Forward   |
| C_122_R | KY930851 | Reverse   |
| C_123   | KY971678 | Consensus |
| C_123_F | KY930852 | Forward   |
| C_123_R | KY930853 | Reverse   |
| C_124   | KY971679 | Consensus |
| C_124_F | KY930854 | Forward   |
| C_124_R | KY930855 | Reverse   |
| C_125   | KY971680 | Consensus |
| C_125_F | KY930856 | Forward   |
| C_125_R | KY930857 | Reverse   |

|         |          |           |
|---------|----------|-----------|
| C_126   | KY971681 | Consensus |
| C_126_F | KY930858 | Forward   |
| C_126_R | KY930859 | Reverse   |
| C_127   | KY971682 | Consensus |
| C_127_F | KY930860 | Forward   |
| C_127_R | KY930861 | Reverse   |
| C_128   | KY971683 | Consensus |
| C_128_F | KY930862 | Forward   |
| C_128_R | KY930863 | Reverse   |
| C_130   | KY971684 | Consensus |
| C_130_F | KY930864 | Forward   |
| C_130_R | KY930865 | Reverse   |

**Table S2.** GenBank deposit numbers of the taxa related to *Ogatea uvarum*.

| <i>Species</i>              | <i>Strain n.</i> | <i>ITS</i>                    | <i>LSU</i>                      |
|-----------------------------|------------------|-------------------------------|---------------------------------|
| <i>Ogatea uvarum</i>        | CBS 12829        | HE965024                      | LN849460                        |
| <i>Candida nemodendra</i>   | CBS 6280         | CBS 6280 ex 10202<br>ITS      | U70246                          |
| <i>Ogatea naganishii</i>    | CBS 6429         | cr - CBS 6429                 | U75724                          |
| <i>Ogatea pignaliae</i>     | CBS 6071         | cr - CBS 6071                 | U70183                          |
| <i>Ogatea philodendri</i>   | CBS 6075         | cr - CBS 6075                 | CBS 6075 ex 46790<br>116657 LSU |
| <i>Ogatea polymorpha</i>    | CBS 4732         | FJ914915                      | FJ914932                        |
| <i>Ogatea angusta</i>       | CBS 7073         | JF756588                      | FJ914931                        |
| <i>Ogatea nonfermentans</i> | CBS 5764         | cr - CBS 5764                 | U75518                          |
| <i>Ogatea kodamae</i>       | CBS 7081         | cr - CBS 7081                 | U75525                          |
| <i>Ogatea dorogensis</i>    | CBS 9260         | CBS 9260 ex 21244<br>6403 ITS | AF403146                        |
| <i>Ogatea minuta</i>        | CBS 1708         | <i>na</i>                     | U75515                          |
| <i>Ogatea histrianica</i>   | CBS 12779        | HE799677                      | HE799677-2                      |
| <i>Ogatea kolombanensis</i> | CBS 12778        | HF559222                      | FR690079                        |
| <i>Ogatea deakii</i>        | CBS 12375        | KC252610                      | GQ265921                        |



**Supplementary Fig. 1** Evolutionary relationships of 13 taxa related to *O. uvarum*. Phylogenetic tree reconstructed using the Maximum Parsimony (MP) method on previously aligned and concatenated ITS and LSU sequences. The optimal tree is shown, with bootstrap support (1000 replicates) shown next to the branches. The MP tree was obtained using the Subtree-Pruning-Regrafting (SPR) algorithm in MEGA6. Type strains sequences were retrieved from GenBank and CBS databases. GenBank deposit numbers are reported in Table S2.