ANALYSIS OF *Vitis* CHLOROPLAST GENOME POLYMORPHISMS AROUND THE MEDITERRANEAN SEA PROVIDE CLUES TO UNDERSTAND GRAPEVINE DOMESTICATION

Rosa Arroyo-Garcia[1], Leonor Ruiz-Garcia[1], Sabit Agaoglu[2], Ivan Atanassov[3], Joaquín Borrego[3], Roberto Botta[5], Felix Cabello[4], Jose Cenis[6], Laura Constantini[7], Ali Ergul[2], Svetlana Gorislavets[8], Stella Grando[7], Mounira Harbi[9], Tzvetanka Hvarleva[3], Javier Ibañez[4], Benjamin Klein[10], Evi Margaritis[11], Patrick McGovern[12], Didier Merdinoglu[13], Ivan Pejic[14], Frederique Pelsy[13], Nikolas Primikirios[15], Valentina Risovannaya[8], Kristina Sefc[16], Hager Snoussi[9], Petraq Sotiri[17], Herta Steinkellner[16], Leonid Troshin[18], Luan Zyka[19], Francois Lefort[20] and José Martinez-Zapater[1]

[1]Centro Nacional de Biotecnologia, Campus de la UAM, 28049 Madrid, Spain ; [2]Department of Horticulture , Faculty of Agriculture, Ankara University, 06110 Dipkapy-Ankara, Turkey ; [3]AgroBioInstitute 2232 Kostinbrod-2 Bulgaria, [4]IMIA, Finca El Encin, Alcala de Henares, 28800 Madrid, Spain ; [5] Dipartimento di Colture Arboree, Università di Torino, Centro Miglioramento Genetico e Biologia della Vite, CNR, Via Leonardo da Vinci 44, 10095 Grugliasco, Italy; [6]CIDA, 30150, La Alberca, Murcia, Spain ; [7]Istituto Agrario S. Michele all Adige, Via Mach,1, 38010 Trento, Italy ; [8]Institut of Vine and Wine Magarach, 31 Kirov St. 98600 Yalta, Crimea, Ukraine ; [9]INRAT, Rue Hédi Karray. 2049 Ariana. Tunisia ; [10]Laboratory Experimental Surgery, Hadassah Hospital, Ein-Kerem, Jerusalem POB 12000, Israel, [11]Darwin College Cambridge University, Silver Street, Cambridge CB3 9EU, United Kingdom, [12]Museum of Archeology and Anthropology, University of Pennsylvania, PA 19104, USA ; [13]Unité Mixte de Recherche Vigne et Vins d'Alsace, UMR 1131, INRA , Laboratoire. de Génétique et d'Amélioration des Plantes, BP507, 28 rue de Herrlisheim, 68021 COLMAR Cedex, France, [14]Department of Plant Breeding, Genetics and Biometrics, University of Zagreb, 10000 Zagreb, Croatia ; [15]Department of Biology, University of Crete, 71409 Heraklion, Crete, Greece ; [16]Zentrum fur Angewandte Genetik, Universitat fur Bodenkultur Wien, 1190 Vienna, Austria ; [17]Institute of Biology, Academy of Science, Tirana, Albania ; [18]Viticulture Department, Kuban State Agrarian University, 350044 Krasnodar, Russia ; [19]Department of Horticulture, Agricultural University of Tirana, Tirana, Albania. [20]Ecole d'Ingénieurs HES de Lullier, 1254 Jussy, Switzerland.

We have searched for polymorphisms at thirty chloroplast microsatellite loci in grapevine. Only five of those loci show polymorphisms, which are always due to a variable number of mononucleotide residues within A/T stretches in the amplified regions. These polymorphisms were used to characterise the chloroplast haplotypes of more than 500 wine and table grapevine varieties grown around the Mediterranean Sea as well as more than 100 wild *Vitis* isolates. For wine varieties, these analyses showed the existence of different haplotype frequency distributions in the two ends of the Mediterranean area, related to the haplotype distribution of wild isolates. This situation was different for table grape varieties, which haplotypes seem to be more homogeneously distributed around the analysed area. These results suggest that *Vitis vinifera* could have been independently domesticated in multiple locations along the area of distribution of wild *Vitis*, with different patterns of domestication and dissemination for table and wine grapevine varieties.