BOOK OF ABSTRACTS

8TH MEETING OF YOUNG RESEARCHERS
OF UNIVERSITY OF PORTO

U.PORTO

PROGRAM

	WEDNESDAY, 13th	THURSDAY, 14th	FRIDAY, 15th
08:30 09:00			REGISTRATION
09:00 10:00	REGISTRATION		PARALLEL ORAL SESSIONS VI A1- Psychology & Education Sciences III A2- Maths A3- Environment I A4- Biological Sciences VI
10:00 10:30	**Welcome Session & Breakfast**		
10:30 11:30	POSTER VIEWING		POSTER VIEWING & Coffee Break
11:30 13:00	PARALLEL ORAL SESSIONS I A1- Engineering I A2- Chemistry I A3- Biological Sciences I A4- Biomedicine I A5- Economics & Management		PARALLEL ORAL SESSIONS VII A1- Economics A2- Astronomy & Physics I A3- Environment II A4- Law & Criminological Sciences
13:00 14:00	Lunch Break		Lunch Break
14:00 14:30		REGISTRATION	
14:30 16:00	PARALLEL ORAL SESSIONS II A1- Engineering II A2- Chemistry II A3- Biological Sciences II A4- Biomedicine II A5- Psychology & Education Sciences I	PARALLEL ORAL SESSIONS IV A1- Agro Food I A2- Sport Sciences A3- Biological Sciences IV A4- Biomedicine IV	PARALLEL ORAL SESSIONS VIII A1- Arts & Architecture A2- Astronomy & Physics II A3- Public Health & Epidemiology
16:00 17:00	POSTER VIEWING & Coffee Break	POSTER VIEWING & Coffee Break	
17:00 18:30	PARALLEL ORAL SESSIONS III A1- Engineering III A2- Chemistry III A3- Biological Sciences III A4- Biomedicine III A5- Psychology & Education Sciences II	PARALLEL ORAL SESSIONS V A1- Agro Food II A2- Humanities & Social Sciences A3- Biological Sciences V A4- Biomedicine V	

ENCONTRO INVESTIGAÇÃO JOVEM
DA UNIVERSIDADE DO PORTO

V PARALLEL ORAL SESSIONS V

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A1 AGRO FOOD II

PARALLEL ORAL SESSIONS V

CYNARA SCOLYMUS CLUSTERING IN PLANT FOOD SUPPLEMENTS BY HIGH RESOLUTION MELTING ANALYSIS

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Plant food supplements (PFS) have been regarded with special interest since they are concentrated sources of nutrients or other substances with a nutritional or physiological effect, contributing to a better homeostatic balance. Weight-loss PFS, one of the most consumed PFS, may include *Cynara scolymus* (artichoke) as an ingredient due to its antioxidant, diuretic, choleretic and hepatoprotective properties [1]. Considered as foods under the EU Directive 2002/46/EC, the PFS are not usually subjected to any safety assessment prior to their commercialisation. This can lead to adulteration issues, such as accidental swap of plants or deliberate substitution of higher cost botanicals by other similar, but cheaper species. Thus, to ensure consumer's safety, the development of analytical methods for the correct identification of different plant species in PFS has become essential. Until now, DNA-based methods have been reported as highly appropriate tools for plant authentication [2]. The aim of this study was to discriminate *C. scolymus* from other *Cynara* spp. using real-time polymerase chain reaction (PCR) coupled to high resolution melting (HRM) analysis.

For this purpose, different *Cynara* species (*C. scolymus*, *C. syriaca*, *C. cardunculus* and *C. humilis*) were obtained from Portuguese and French Germplasm Banks. A total of 8 PFS tablets for weight-loss containing artichoke were acquired at local herbal stores. DNA from plant material and PFS was extracted using the commercial *NucleoSpin Plant II* kit. Former to DNA extraction, PFS were pre-treated with a phosphate buffer 1M (pH8, 15% ethanol) to enhance the purity and quality of the extracts. The specificity and sensitivity of the designed primers targeting *C. scolymus* were assayed by qualitative PCR and real-time PCR with HRM analysis. The application of the specific PCR assay was successful in the detection of *Cynara* spp. in some of the PFS samples. The results of real-time PCR with HRM analysis showed that different *Cynara* spp. were included in three distinct clusters with a level of confidence above 99.4%, thus discriminating artichoke from other *Cynara* species. The proposed HRM analysis allowed confirming the unequivocal presence of *C. scolymus* in the tested PFS with high level of confidence (>98.8%). To our knowledge, this is the first successful attempt for the rapid discrimination of *C. scolymus* in PFS.

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References:

[1] Lattanzio, V.; Kroon, P. A.; Linsalata, V.; Cardinali, A. (2009), Journal of Functional Foods, 1, 131-144.
[2] Kazi, T.; Hussain, N.; Bremner, P.; Slater, A.; Howard, C. (2013), Fitoterapia, 87, 27-30.