

**GITAD VALIDATION OF POWERPLEX® 16: POPULATION DATA FROM FIVE
LATIN AMERICAN COUNTRIES AND SPAIN**

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The PowerPlex16® System (Promega Corp., Madison, WI, USA) has been proved an extremely reliable multiplex that can perform the simultaneous amplification of 15 nuclear STR loci (D3S1358, TH01, D21S11, D18S51, Penta E, D5S818, D13S317, D7S820, D16S539, CSF1PO, Penta D, vWA, D8S1179, TPOX, FGA), plus the gender-marker amelogenin. All the 13 CODIS-core loci are included in this single amplification. Considering that the GITAD is also recommending the 13 CODIS loci as the ones to be used in criminal databases in Latin America, this is a very important advantage. Beside that, 2 pentanucleotide-repeats (Penta-D and Penta-E) are also included in this kit.

Under the sponsorship of Promega, the Ibero American Scientific Working Group on DNA Analysis (GITAD) is conducting a number of validation studies on PowerPlex®16. The first phase of the study consists in the generation of population data from a number of countries.

In this poster we show a resume of the main results obtained regarding HWE, PD & PE of the 15 STRs loci in the 6 different populations considered.

	Highest P.D.	Minimum P.D.	Highest P.E.	Minimum P.E.
ARGENTINA	PentaE (97.4)	TPOX (83.1)	PentaE (79.1)	TPOX (41.4)
BRASIL	PentaE (97.6)	TPOX (81.3)	PentaE (79.6)	TPOX (41.5)
CHILE	PentaE (98.3)	TPOX (83.8)	PentaE (82.8)	TPOX (42.3)
COSTA RICA	PentaE (97.9)	TPOX (80.9)	PentaE (80.7)	TPOX (40.4)
ESPAÑA	PentaE (96.9)	TPOX (81.8)	D18S51 (75.2)	TPOX (40.3)
URUGUAY	PentaE (97.5)	TPOX (84.4)	PentaE (78.7)	TPOX (42.6)

In all cases, cumulated P.D. was >99.999999, and cumulated P.E. was >99.9999
Despite the geographical and historical differences, all populations show very similar P.D.'s and P.E.'s, being the most discriminating locus in all populations the Penta-E, and the less informative one TPOX. All loci meet Hardy-Weinberg expectations on equilibrium (HWE); also, no significant correlations were detected using the Karlin test.

In conclusion, PowerPlex®16 multiplex is a very powerful multiplex and an extremely useful tool for human identification purposes.