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National survey on the prevalence of single-gene aetiologies for genetic developmental and epileptic encephalopathies in Italy

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ABSTRACT

Background We aimed to estimate real-world evidence of the prevalence rate of genetic developmental and epileptic encephalopathies (DEEs) in the Italian population over a 11-year period.

Methods Fifteen paediatric and adult tertiary Italian epilepsy centres participated in a survey related to 98 genes included in the molecular diagnostic workflows of most centres. We included patients with a clinical diagnosis of DEE, caused by a pathogenic or likely pathogenic variant in one of the selected genes, with a molecular diagnosis established between 2012 and 2022. These data were used as a proxy to estimate the prevalence rate of DEEs.

Results We included 1568 unique patients and found a mean incidence proportion of 2.6 patients for 100.000 inhabitants (SD=1.13) with consistent values across most Italian regions. The number of molecular diagnoses showed a continuing positive trend, resulting in more than a 10-fold increase between 2012 and 2022. The mean age at molecular diagnosis was 11.2 years (range 0–75). Pathogenic or likely pathogenic variants in genes with an autosomal dominant inheritance pattern occurred in 77% (n=1207) patients; 17% (n=271) in X-linked genes and 6% (n=90) in genes with autosomal recessive inheritance. The most frequently reported genes in the survey were *SCN1A* (16%), followed by *KCNQ2* (5.6%) and *SCN2A* (5%).

Conclusion Our study provides a large dataset of patients with monogenic DEE, from a European country. This is essential for informing decision-makers in drug development on the appropriateness of initiatives aimed at developing precision medicine therapies and is instrumental in implementing disease-specific registries and natural history studies.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Epidemiological data gathered from the real-world evidence are fundamental to assess the potential for genetically driven precision medicine and to prioritise investments in innovative therapies in developmental and epileptic encephalopathies (DEEs).

WHAT THIS STUDY ADDS

⇒ This study aimed to determine the prevalence of genetic DEEs in Italy over an 11-year period, using molecular diagnoses as a proxy. We found that DEEs affected 2.6 per 100 000 inhabitants, with a consistent prevalence across different regions of Italy. The data revealed a significant increase in diagnoses over the decade, with an average age at diagnosis of 11.2 years. Most cases were linked to autosomal dominant genes (77%), followed by X-linked (17%) and autosomal recessive genes (6%). The genes *SCN1A*, *KCNQ2* and *SCN2A* emerged as the most frequently involved in DEEs.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This comprehensive dataset from Italy, though not exhaustive, is crucial for guiding the development of targeted therapies, advancing precision medicine, and establishing disease-specific registries and natural history studies.

INTRODUCTION

The term 'developmental and epileptic encephalopathies' (DEEs) is used to designate disorders with early-onset severe epilepsy and EEG abnormalities on a background of developmental impairment that tends to worsen as a consequence of epilepsy.[1] The associated clinical picture is complex and severely disabling, resulting from a combination of developmental abnormalities and severe epilepsy/EEG discharges.

Epidemiological data gathered from the real-world-evidence are fundamental to assess the potential for genetically driven precision medicine and to prioritise investments in innovative therapies in DEEs, as also advocated by the European Medicine Agency and national regulatory bodies (https://www.ema.europa.eu/en/reflection-paper-use-real-world-data-non-interventional-studies-generate-real-world-evidence-scientific-guideline). Unfortunately, at present, there is a paucity of epidemiological information on DEEs. To address this need, with the support of the national network of the Commission for Genetics of the Italian League Against Epilepsy (LICE), we conducted a survey of DEEs with an established molecular diagnosis over a 11-year period. These data were used as a proxy to estimate the prevalence rate of DEEs and to extrapolate epidemiological estimates. A quantitative estimate thus conducted is inevitably biased toward underestimation but provides at least a measure of the minimum number of affected individuals and the proportional distribution of specific genetic forms. Fifteen paediatric and adult tertiary Italian epilepsy centres participated in the survey. We also assessed how the odds of receiving a molecular diagnosis of DEE in Italy changed over the time interval under study.

METHODS

Centres

We selected the 15 participating LICE centres based on several criteria, including geographic coverage across the nation (online supplemental table S1 and figure S1), high attractiveness for DEE, and available facilities to perform molecular genetic testing. Participating centres were Meyer Children's Hospital IRCCS, Florence, Tuscany; Bambino Gesù Children's Hospital, IRCCS, Rome, Lazio; Azienda Ospedaliera Universitaria Integrata di Verona, Verona, Veneto; IRCCS Eugenio Medea, Lecco, Lombardy; IRCCS Istituto Neurologico Carlo Besta, Milan, Lombardy; IRCCS Mondino Foundation, Pavia, Lombardy; IRCCS Istituto Giannina Gaslini, Genoa, Liguria; IRCCS Istituto delle Scienze Neurologiche di Bologna, Bologna, Emilia Romagna; Fondazione Policlinico Universitario Agostino Gemelli, IRCCS, Rome, Lazio; IRCCS Casa Sollievo della Sofferenza, San Giovanni Rotondo, Apulia; Azienda Ospedaliero-Universitaria Policlinico Umberto I/Sapienza Università di Roma, Rome, Lazio; Presidio Ospedaliero G. Salesi, Azienda Ospedaliero Universitaria delle Marche, Ancona, Marche; Associazione Oasi Maria SS. ONLUS—IRCCS, Troina, Sicily; Azienda Ospedaliera Universitaria Mater Domini, Catanzaro, Calabria; Azienda Ospedaliera Brotzu, Cagliari, Sardinia (online supplemental table S1).

DEE gene selection

We established the list of EE/DEE genes to include in the survey based on a recent comprehensive overview of DEE[2] and using the 'developmental and epileptic encephalopathy' phenotypic series as a query on the Online Mendelian Inheritance in Man (OMIM) database (https://omim.org/; MIM code: PS308350). After discussion among the participating centres, we integrated, modified and narrowed down the gene list to obtain a final list of 98 genes included in the molecular diagnostic workflows of most centres (online supplemental table S2). We did not include in the final list those genes identified after 2021 to avoid their prevalence to be underestimated.

Patients' cohort recruitment

We included in the survey patients who met the following criteria: (1) clinical diagnosis of DEE; (2) pathogenic or likely pathogenic variant(s) in one of the genes included in the survey; (3) molecular diagnosis established between 1 January 2012 and 3 December 2022.

We excluded patients if carrying pathogenic or likely pathogenic variants in more than one gene, that is, digenic or oligogenic phenotypes.

We gathered patients' data in a template collecting: the identifier of the referring centre, the pseudonymisation code, the last 10 of the 16-digit tax ID code—including the birth's year of the patient's, the gene name related to the diagnosis and the year in which the diagnosis was made. We then calculated the age at molecular diagnosis and extrapolated gender information from the patients' tax ID code.

Since some patients were likely to have been followed up in more than one centre across the country, we searched for duplicates by cross-checking the tax ID codes and ensure that everyone would be counted only once. We used the 10 digits of the ID code to retrieve the Italian region of birth by applying the 'correlation' tables supplied from the Italian National Institute of Statistics (ISTAT; http://www.istat.it). We identified patients born outside the Italian territory, either Italian citizens born abroad or foreigners, through the 'Z' letter followed by the state identification number (three digits) in the patients' birthplace part of the tax ID code. We included these patients in the 'Extra-Italy' group. We obtained written informed consent from all participants or their legal guardians according to local requirements for genetic testing.

Statistical analysis

We performed statistical analysis using Microsoft Excel and R V.4.0 (R Institute, Vienna, Austria). Once obtained the Italian geographical map (shapefile in the WGS84 reference system) by the Italian National Institute of Statistics (ISTAT; https://www.istat.it/it/archivio/222527), we used R V.4.0 to plot the survey's data on the Italian map with regional boundaries. We obtained annual live birth data from the Italian National Institute of Statistics (ISTAT; http://dati.istat.it/) and normalised the number of patients with an identified molecular cause to the number of live births for the corresponding year, starting from 2000. We then calculated the incidence of molecular diagnoses of DEEs per live birth.

Data availability

The authors affirm that all data necessary for confirming the conclusions of the article are present within the article, figures, tables and online supplemental material dataset (excluding patients' sensitive information).

RESULTS

We collected 1825 patients' records and discarded records with missing/largely incomplete tax ID code (n=58). We assessed the remaining 1767 records to rule out multiple entries for the same individual and found 1380 unique records and 354 records that had been submitted by two different centres, that is, 177 unique records, and 33 by three centres, that is, 11 unique records. After this redundancy check, we discarded 199 entries and included 1568 unique patients in the analysis. We assigned these patients to their birth's region (n=1479) or to the 'Extra-Italy' group (n=89) (online supplemental table S3). Among the selected genes, we observed at least one record for 85 out of 98 genes. No causative variants were reported for *AARS1, CACNA1B, CUX2, KCNQ5, NACC1, NECAP1, PIGB, PLCB1, SIK1, SYNJ1, SLC25A12, UGP2* and *VARS1* (online supplemental table S2).

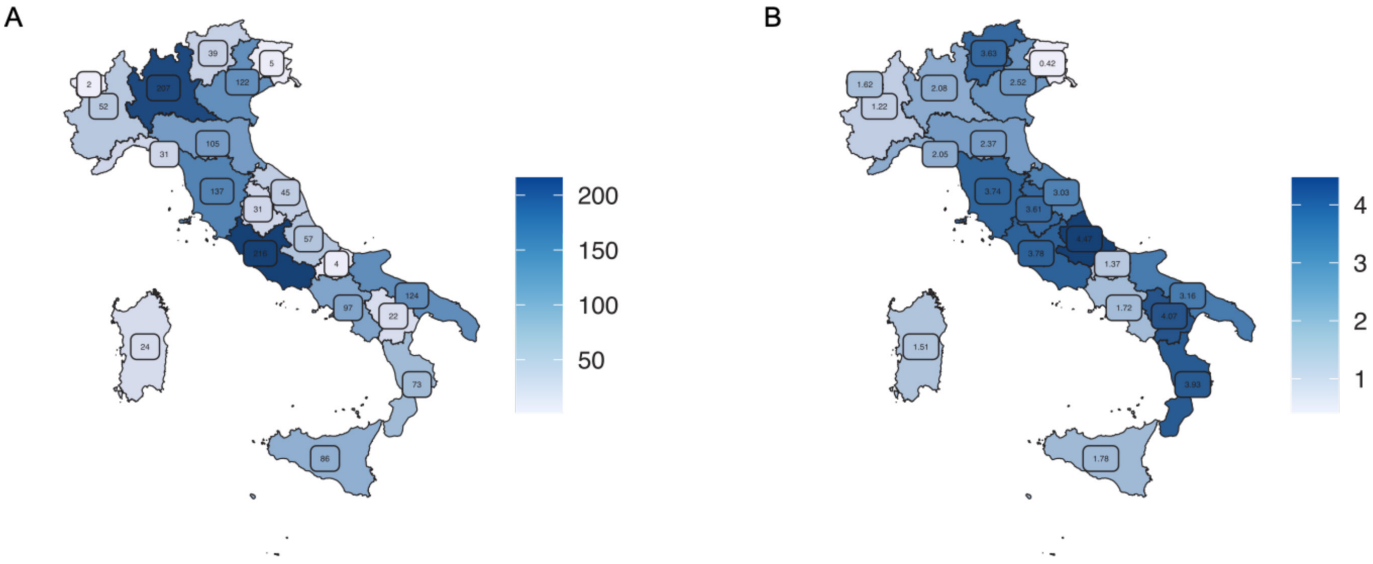

Figure 1 (A) Number of patients born in the 20 Italian regions and enrolled in the survey. (B) Mean incidence proportion of patients (2012–2022) per region normalised with the corresponding number of inhabitants. Similar blue intensities correspond to a similar mean incidence proportion of patients.

The contribution of the 15 Italian centres to the survey is presented in online supplemental table S4.

Survey quality control

To prove our capability to identify patients with DEEs across the country, we assumed that the number of patients identified in each Italian region would be comparable after normalisation with the general population. To perform this calculation, we normalised the number of enrolled patients from the 20 Italian regions by the corresponding number of inhabitants on 1 January 2022 (ISTAT; http://dati.istat.it/) (figure 1A,B). We obtained a mean incidence proportion (2012–2022) of 2.6 patients for 100.000 inhabitants (SD=1.13) and observed consistent values across most Italian regions (online supplemental table S3) except for Friuli-Venezia Giulia where the incidence proportion was significantly lower, highlighting a possible under ascertainment of patients born in this region.

Demographic characteristics

The survey cohort included 877 females and 691 males (1:1.27, M:F ratio). The mean age at the time of inclusion in the survey was 13.7 years (range from birth to 76 years—median 11 years). This is purely theoretical data since the study design did not allow us to know whether any demise had occurred. The density plot for age at inclusion is illustrated in figure 2A,B, including both the whole patient sample and patients grouped by sex.

Number of DEE molecular diagnosis

The number of molecular diagnoses obtained between 2012 and 2022 showed a continuing positive trend (figure 3), with 20 diagnoses in 2012 and 214 in 2022, thus resulting in more than a 10-fold increase. The incidence per 100 000 live births of patients with an identified molecular cause of DEE showed a tendency to plateau between the 2012 and 2020 birth years (online supplemental figure S2). The mean incidence of molecular diagnoses of DEEs during this period was 1 per 6277 live births (15.93/100 000; 95% CI 14.87 to 17.00).

Age at molecular diagnosis

Mean age at molecular diagnosis was 10.2 years (median 7 years, range 0–74 years). The density plot of age at molecular diagnosis is illustrated in figure 4A,B, including both the whole patient sample and patients grouped by sex. Patients' age at molecular diagnosis density plots, specific for each gene, were obtained for

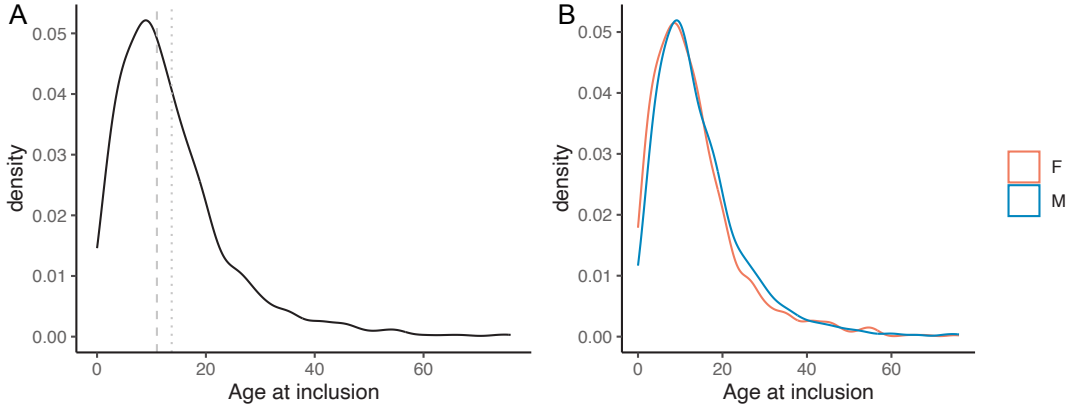

Figure 2 (A) Density plot of the age at the inclusion in the survey. (B) Density plot of the age at the inclusion in the survey grouped by sex. Vertical dashed grey line: median age (11 years); Vertical dotted grey line: mean age (13.7 years). Orange: female patients, light blue: male patients.

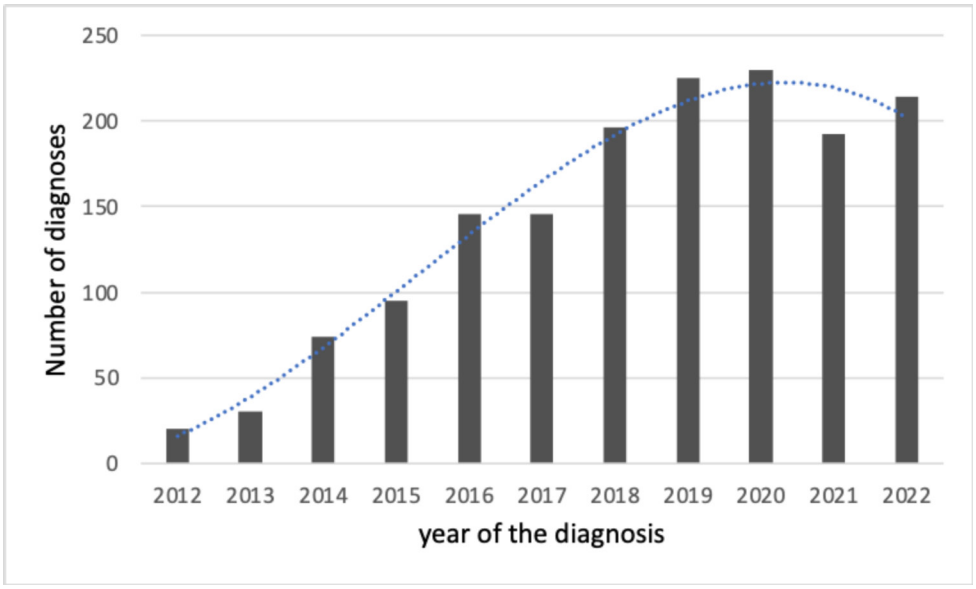

Figure 3 Per year distribution of the number of diagnoses reported in the survey. The dotted blue line depicts the polynomial (third order) trendline.

85 out of 98 genes included in the survey (online supplemental figure S3). For 10/85 genes, patients' age at molecular diagnosis density plots was empty since we observed only one patient per gene.

Inheritance pattern

Pathogenic or likely pathogenic variants in genes with an autosomal dominant inheritance pattern occurred in 77% (n=1207) patients; 17% (n=271) in X-linked genes and 6% (n=90) in genes with autosomal recessive inheritance (online supplemental figure S4).

Top-20 genes in the survey

The most frequently reported genes in the survey were *SCN1A* (16%), followed by the *KCNQ2* (5.5%) and *SCN2A* (5%). The top-20 genes are reported in online supplemental figure S5.

Limitations

Our survey includes the main, but not all, Italian centres that follow patients with DEEs and laboratories that perform molecular analysis for these patients. Considering that the Italian healthcare system allows the free movement of patients throughout the country, it is very unlikely that a significant number of individuals with DEEs have escaped diagnosis in the highly specialised tertiary services for epilepsy participating to the survey and their related genetic laboratories. However, it must be considered that adults or elderly people with DEE residing in institutions or with limited prospects of clinical benefit from a late diagnosis have never been tested. Consequently, the number of patients with genetic DEEs is certainly underestimated, but the number of those who received an EE/DEE molecular diagnosis during the survey period is only minimally underestimated. We also acknowledge a risk of overestimation due to the lack of data on deceased patients with DEE. In a retrospective analysis of 510 individuals with genetic DEE, including pathogenic variants in *SCN1A, SCN2A, SCN8A, SYNGAP1, NEXMIF, CHD2, PCDH19, STXBP1, GRIN2A, KCNT1* and *KCNQ2*, and Angelman syndrome, Donnan *et al* reported 8% of deaths, producing a mortality rate of 6.1 per 1000 person-years (95% CI 4.4 to 8.3).[3] These estimates can help correcting our prevalence figures, considering that all but one (ie, Angelman syndrome) genetic aetiologies were included in our survey.

The list of genes to be included in the survey was chosen after discussions among the participating centres and is certainly not inclusive of all genes associated with DEE. One of the selection criteria was that the genes had to be included in most diagnostic panels from different centres. These panels covered a range of conditions, including some that addressed also progressive

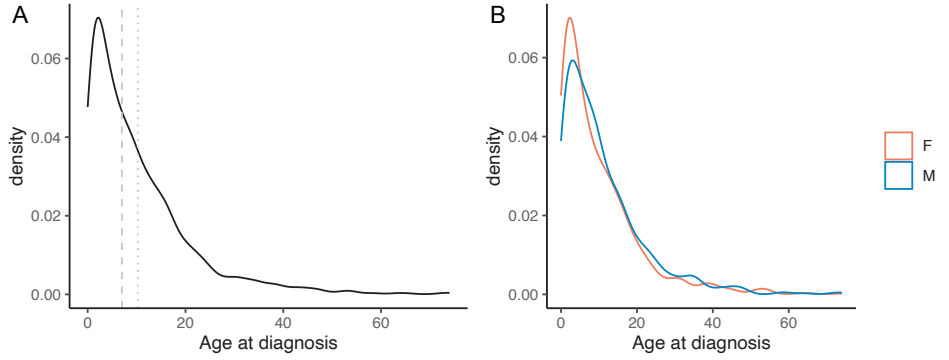

Figure 4 (A) Density plot of the age at molecular diagnosis. (B) Density plot of the age at molecular diagnosis grouped by sex. Vertical dashed grey line: median age (7 years); Vertical dotted grey line: mean age (10.2 years). Orange: female patients; light blue: male patients.

diseases that can cause DEE, such as metabolic conditions, while others focused more on static DEEs. Lack of homogeneity in diagnostic coverage resulted in an unavoidable bias in the genes included in our survey.

Considering the 11-year survey period, it is unavoidable that the diagnostic strategies used in each centre to reach a genetic diagnosis were heterogeneous. Different sequencing techniques, including Sanger sequencing and next-generation sequencing (NGS) approaches such as small to large gene panels and whole exome sequencing, were used. In addition, small copy number variants (CNVs) involving one or a few exons could have been missed, as specific techniques (such as Multiplex Ligation-dependent Probe Amplification, MLPA) or bioinformatic algorithms were not available or included in the diagnostic workflows used in the different centres over the survey period.

Some of the genes included in the survey were not recognised as disease-causing genes at the beginning of the study, with a few only recently identified. Furthermore, the list of genes included in the survey does not encompass many additional genes known to cause DEE, even if only in a smaller subset of patients. These limitations could have influenced the results and the estimated prevalence of DEE.

DISCUSSION

Our country-wide survey on DEE has included a significant number of genes and identified a large population of patients with monogenic DEE. Its unblinded retrospective design and its extension to diagnoses made over 11 years imply that genetic testing strategies varied over time.

To better interpret the survey's results, it is important to know that the Italian state has instituted a universal public healthcare system (the National Health System) since 1978. This system is highly decentralised, with each region being in charge of organising and delivering health services to the population, while each citizen remains free to move to where they feel better care is available.

We included in the analysis 1568 unique patients harbouring pathogenic or likely pathogenic variants in 85 out of the 98 selected genes (86.7%) (online supplemental table S2). The mean age at molecular diagnosis was 10.2 years (range: from 0 to 75 years, median: 7 years), highlighting the predominantly paediatric nature of the studied population. We observed 89 patients from the 'Extra-Italy' group, accounting for 5.6% of the cohort. This contingent of DEE derives from the immigrant population with a regular residence permit for long-term residence who are granted access to the national public healthcare system.

In the whole cohort, the autosomal dominant model was the most frequent (77%), whereas X-linked and autosomal recessive models were observed in 17% and 6% of patients. Both the autosomal dominant and the X-linked patterns were boosted by the large contribution of *de novo* variants that are identified in most DEE.[4–6] Despite recessive variants in causative genes have been reported in 11–38% patients with DEE,[7 8] we observed an autosomal recessive pattern of inheritance only in 6% of patients. This figure, although generated without the contribution of variants in genes following an X-linked recessive pattern, remains lower than expected. A possible explanation might derive from the low rate of consanguinity in the Italian population.[9] In addition, considering that the interpretation of biallelic variants in autosomal recessive genes is more challenging compared with single variants in genes with dominant (mainly de novo) inheritance, it is possible that the number of likely pathogenic or pathogenic variants in autosomal recessive genes has been underestimated.

DEEs have a high genetic heterogeneity and the distribution of causative variants implies that only a few genes are linked to many cases while for most genes, only a few patients, are bound to each individual gene.[2] The top-20 genes most frequently reported in this survey are consistently present at high diagnostic yield in retrospective studies in DEE,[10–13] with *SCN1A, KCNQ2* and *SCN2A* being the top-3 as also reported by Heyne *et al*.[10]

Only a few studies have addressed the need for epidemiological data with prospective studies in genetic epilepsies. Symonds *et al* reported on the incidence of the most common single-gene epilepsies in a prospective population-based national cohort recruited in Scotland over a 3-year period.[14] These authors performed genetic testing through a custom-designed 104-gene epilepsy panel in 333 children presenting with seizures before 36 months of age. Of these, 80/333 (24%) had a diagnostic genetic finding, and 27/80 (33.8%) were DEE. The overall estimated annual incidence of single-gene epilepsies in this population was 1 per 2120 live births (47.2/100 000; 95% CI 36.9 to 57.5), with pathogenic variants in *SCN1A, PCDH19, CDKL5* and *KCNQ2,* having the highest incidence for DEE. In our survey, the mean incidence of molecular diagnoses of single-gene DEEs among live births in the 2012–2020 time frame was 1 per 6277 (15.93/100 000; 95% CI 14.87 to 17.00). This figure provides a mean incidence of single-gene DEEs lower than that estimated by Symonds *et al* (1 per 2120 live births). Differences in experimental design (prospective vs retrospective) and inclusion criteria may account for the different estimates.

The same group (Symonds *et al*) provided a further epidemiological characterisation of early-onset epilepsies in the Scottish population through a 3-year prospective recruitment strategy also using an independent case ascertainment strategy. Of the 390 children included, 146 had a DEE (37.4%). The incidence of all DEEs was 86.1 per 100 000 live births (95% CI 72.7 to 101.3). Among DEEs, the highest incidence was for infantile spasms syndrome, 30.7 per 100 000 live births (95% CI 22.9 to 40.2) [genetic aetiologies identified in 22/52 (42%), including trisomy 21 (n=6), and pathogenic variants in *CDKL5* (n=2), *TSC1* (n=2), *TSC2* (n=3)], followed by early infantile DEE (<3 months), 10 per 100 000 live births (95% CI 5.8 to 16.0) [genetic aetiologies identified in 12/17 (70.5%), including pathogenic variants in *CDKL5 (n=2)*], and Dravet syndrome, 6.5 per 100 000 live births (95% CI 3.2 to 10.0), caused by *SCN1A* pathogenic variants in all individuals (n=11). Other DEEs without a specific syndromic classification had an incidence of 31.9 per 100 000 live births (95% CI 23.9 to 41.6), with a genetic aetiology identified in 19/54 (35%) including 15q11-13 deletion (Angelman, n=2), 16p11.2 deletion (n=2), pathogenic variants in *PCDH19 (n=2)* and *SLC6A1* (n=2).[15] It is difficult to compare our findings with those generated by population-based studies due to differences in methodology. In addition, we included DEE phenotypes without specific syndromic characterisation but with an established genetic aetiology and did not consider chromosomal abnormalities. However, the most prevalent single gene aetiologies emerging from our survey are concordant with those reported by Symonds *et al*, especially for *SCN1A*- and *CDKL5*-related DEEs.[14 15]

Our survey provides an imperfect but reliable quantitative estimate on the set of rare diseases grouped under the definition of DEEs. This information is of paramount importance together with knowledge about the functional alterations underlying a given genetic DEE to formulate plans for approaching precision therapies. A precision medicine approach implies capacity and intention to switch from medications treating seizures at large to molecules tailored towards specific conditions manifesting

seizures as one of the symptoms, a paradigm shift with considerable marketing implications.[16] In this perspective, we tried to measure the magnitude of DEE patients' population and their specific single gene causes in a large European country, thus providing a dataset to be used for decision-making strategies both for pharmaceutical purposes and regulatory agencies. Our study also provides information about the least rare DEEs among rare DEEs, thus highlighting interests in the development of specific molecules for treatment.

The number of molecular diagnoses collected in the survey showed a continuing positive trend in the number of diagnoses over time, with about a 10-fold increase over the 11-year time frame. This was likely determined by the growth in the number of genes associated with epileptic encephalopathies,[2 17] and the increased use of wide NGS-targeted gene panels and exomes in clinical practice.[13 18] The slight slowdown of the molecular diagnoses in the last three reference years of the survey (2020–2022) can be ascribed in part to the COVID-19 pandemic and, for the last year (2022), the incomplete receipt from genetics laboratories of all test results initiated that year. Looking at the whole data trend, we do not expect an increase of molecular diagnoses as substantial as in the past. Yet a constant increase remains likely since omics technologies such as the long reads sequencing, the optical genome mapping and the improved knowledge related to the interpretation of variants in non-coding regions of the human genome will likely result in increasing the DEE with a molecular diagnosis.[16]

Some geographical/regional differences in the distribution of patients with DEE emerged after normalisation with the number of inhabitants. In particular, the observed mean incidence proportion was significantly lower in the Friuli-Venezia-Giulia region (0.42 for 100.000 inhabitants) in comparison to the country-wide mean of 2.6 for 100.000 inhabitants. This five-fold lower value can be ascribed to an under ascertainment of the patients with DEE from this region, possibly due to the absence of a local centre in the survey. Considering the country-wide patients mean incidence proportion, we also observed slightly lower values in some regions for which a local centre was not included in the survey (ie, Piemonte, Molise and Campania).

The estimate of DEEs provided in this study does not include those due to chromosomopathies, large CNVs, mitochondrial DNA variants, nor all undiagnosed cases. The purpose of our study, however, was to provide even a rough estimate of the forms related to potentially actionable monogenic mechanisms, not to make an estimate of all patients with DEEs present in Italy.

Although our survey likely underestimates the total number of patients who received a DEE molecular diagnosis in Italy, it provides an analytical estimate that is essential for informing decision-makers in drug development on the appropriateness of initiatives aimed at developing precision medicine therapies. Knowledge of the magnitude of affected populations with specific genetic conditions underlying DEEs is also instrumental to implement disease-specific registries[19] and facilitate natural history studies.

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Supplemental Material

A National Survey on the Prevalence of Single-Gene Aetiologies for Genetic Developmental and Epileptic Encephalopathies in Italy

Centre Name	City	Region	Type of centre
Meyer Children's Hospital IRCCS	Florence	Tuscany	Clinical and Molecular
Bambino Gesù Children's Hospital, IRCCS	Rome	Lazio	Clinical and Molecular
Azienda Ospedaliero-Universitaria Integrata Verona	Verona	Veneto	Clinical
Scientific Institute IRCCS E. Medea	Bosisio Parini	Lombardy	Clinical and Molecular
Fondazione IRCCS Istituto Neurologico Carlo Besta	Milan	Lombardy	Clinical and Molecular
IRCCS Mondino Foundation	Pavia	Lombardy	Clinical and Molecular
IRCCS Istituto Giannina Gaslini	Genoa	Liguria	Clinical and Molecular
IRCCS Istituto delle Scienze Neurologiche di Bologna	Bologna	Emilia Romagna	Clinical and Molecular
Fondazione Policlinico Universitario Agostino Gemelli, IRCCS	Rome	Lazio	Clinical
Fondazione IRCCS Casa Sollievo della Sofferenza	San Giovanni Rotondo	Apulia	Clinical and Molecular
Azienda Ospedaliero-Universitaria Policlinico Umberto I / Sapienza Università di Roma	Rome	Lazio	Clinical
Presidio Ospedaliero G. Salesi, Azienda Ospedaliero Universitaria delle Marche	Ancona	Marche	Clinical
Associazione Oasi Maria SS. ONLUS – IRCCS	Troina	Sicily	Clinical and Molecular
Azienda Ospedaliera Universitaria Mater Domini	Catanzaro	Calabria	Clinical and Molecular
ARNAS G. Brotzu	Cagliari	Sardinia	Clinical and Molecular

Table S1. List of the 15 centres participating to the survey.

Gene name	Inheritance (according MIM)	Gene/Locus MIM number	Cytoband	Pts n°
AARS1	AR	601065	16q22.1	0
ALG13	XL	300776	Xq23	6
ARHGEF9	XL	300429	Xq11.1	4
ARV1	AR	611647	1q42.2	1
ARX	XL	300382	Xp21.3	7
ATP1A2	AD	182340	1q23.2	10
ATP1A3	AD	182350	19q13.2	13
ATP6V1A	AD	607027	3q13.31	3
BRAT1	AR	614506	7p22.3	10
CACNA1A	AD	601011	19p13.13	35
CACNA1B	*AR*	*601012*	*9q34.3*	*0*
CACNA1E	AD	601013	1q25.3	6
CAD	AR	114010	2p23.3	2
CASK	XL	300172	Xp11.4	15
CDK19	AD	614720	6q21	1
CDKL5	XL	300203	Xp22.13	61
CHD2	AD	602119	15q26.1	42
CLCN4	XL	302910	Xp22.2	3
CLTC	AD	118955	17q23.1	4
CSNK2B	AD	115441	6p21.33	19
CUX2	AD	610648	12q24.11-q24.12	0
CYFIP2	AD	606323	5q33.3	3
DHDDS	AD	608172	1p36.11	3
DNM1	AD, AR	602377	9q34.11	8
DNM1L	AD, AR	603850	12p11.21	3
DOCK7	AR	615730	1p31.3	1
EEF1A2	AD	602959	20q13.33	10
FGF12	AD	601513	3q28-q29	2
FOXG1	AD	164874	4q12	19
FRRS1L	AR	604574	9q31.3	2
GABRA1	AD	137160	5q34	27
GABRA5	AD	137142	15q12	3
GABRB1	AD	137190	4p12	1
GABRB2	AD	600232	5q34	5
GABRB3	AD	137192	15q12	22
GABRG2	AD	137164	5q34	29
GNAO1	AD	139311	16q13	22
GRIN1	AD, AR	138249	9q34.3	14
GRIN2A	AD	138253	16p13.2	49
GRIN2B	AD	138252	12p13.1	18
GRIN2D	AD	602717	19q13.33	2
HCN1	AD	602780	5p12	8
HNRNPU	AD	602869	1q44	5
KCNA2	AD	KCNA2	1p13.3	14
KCNB1	AD	KCNB1	20q13.13	23
KCNQ2	AD	602235	20q13.33	88
KCNQ5	AD	607357	6q13	0
KCNT1	AD	608167	9q34.3	39
KMT2E	AD	608444	7q22.3	8

Gene name	Inheritance (according MIM)	Gene/Locus MIM number	Cytoband	Pts n°
MBD5	AD	611472	2q23.1	7
MECP2	XL	300005	Xq28	71
MEF2C	AD	301002	5q14.3	5
NACC1	AD	610672	19p13.13	0
NECAP1	AR	611623	12p13.31	0
NEXMIF	XL	300524	Xq13.3	17
NTRK2	AD	600456	9q21.33	1
PACS2	AD	610423	14q32.33	5
PARS2	AR	612036	1p32.3	3
PCDH19	XL	300460	Xq22.1	62
PIGA	XL	311770	Xp22.2	8
PIGB	AR	604122	15q21.3	0
PIGQ	AR	605754	16p13.3	1
PLCB1	AR	*607120*	20p12.3	0
PNKP	AR	605610	19q13.33	10
PNPO	AR	610090	17q21.32	5
POLG	AR	174763	15q26.1	5
PURA	AD	600473	5q31.3	15
RHOBTB2	AD	607352	8p21.3	1
RNF13	AD	609247	3q25.1	1
SCN1A	AD	182389	2q24.3	252
SCN1B	AD, AR	600235	19q13.11	13
SCN2A	AD	182390	2q24.3	78
SCN3A	AD	182391	2q24.3	4
SCN8A	AD	600702	12q13.13	60
SIK1	AD	*605705*	21q22.3	0
SYNJ1	AR	*604297*	21q22.11	0
SLC12A5	AR	606726	20q13.12	2
SLC13A5	AR	608305	17p13.1	10
SLC1A2	AD	600300	11p13	2
SLC25A12	*AR*	*603667*	*2q31.1*	*0*
SLC25A22	AR	609302	11p15.5	1
SLC2A1	AD, AR	138140	1p34.2	49
SLC35A2	XL	300896	Xp11.23	3
SLC6A1	AD	137165	3p25.3	39
SLC9A6	XL	300231	Xq26.3	7
SMC1A	XL	300040	Xp11.22	7
SPTAN1	AD	182810	9q34.11	18
ST3GAL3	AR	606494	1p34.1	1
ST3GAL5	AR	604402	2p11.2	3
STXBP1	AD, AR	602926	9q34.11	53
SYNGAP1	AD	603384	6p21.32	41
SZT2	AR	615463	1p34.2	10
TBC1D24	AR	613577	16p13.3	12
UBA5	AR	610552	3q22.1	4
UGP2	*AR*	*191760*	*2p15*	*0*
VARS1	*AR*	*192150*	*6p21.33*	*0*
WWOX	AR	605131	16q23.1-q23.2	7
YWHAG	AD	605356	7q11.23	5

Table S2. List of the 98 genes included in the survey and the number of patients with (likely)-pathogenic variants in each gene. Genes in light grey were included in the survey but no centres reported patients(n°=13). AD: autosomal dominant; AR: autosomal recessive; XL: X-linked. Gene/Locus MIM number: Gene/Locus number as reported in www.omim.org. Pts n°: number of patients with (likely)-pathogenic variants in each gene.

Region Name	Patients	Populations (2022)	Mean incidence proportion / 100K
Abruzzo	57	1275950	4.47
Basilicata	22	541168	4.07
Calabria	73	1855454	3.93
Campania	97	5624420	1.72
Emilia Romagna	105	4425366	2.37
Friuli Venezia Giulia	5	1194647	0.42
Lazio	216	5714882	3.78
Liguria	31	1509227	2.05
Lombardy	207	9943004	2.08
Marche	45	1487150	3.03
Molise	4	292150	1.37
Piemonte	52	4256350	1.22
Apulia	124	3922941	3.16
Sardinia	24	1587413	1.51
Sicily	86	4833329	1.78
Tuscany	137	3663191	3.74
Trentino Alto Adige	39	1073574	3.63
Umbria	31	858812	3.61
Valle D'Aosta	2	123360	1.62
Veneto	122	4847745	2.52
Total Italy	**1479**	**59030133**	**2.51**
Extra-Italy	**89**	**-**	
Total Survey	**1568**		

Table S3. Patients enrolled in the survey assigned to their birth's region and the mean incidence proportion calculated on the basis of the 2022 Italian regional population.

Centre Name	Patients Enrolled
Meyer Children's Hospital IRCCS	575
Bambino Gesù Children's Hospital, IRCCS	237
Azienda Ospedaliero-Universitaria Integrata Verona	129
Scientific Institute IRCCS E. Medea	91
Fondazione IRCCS Istituto Neurologico Carlo Besta	74
IRCCS Mondino Foundation	73
IRCCS Istituto Giannina Gaslini	61
IRCCS Istituto delle Scienze Neurologiche di Bologna	60
Fondazione Policlinico Universitario Agostino Gemelli, IRCCS	60
Fondazione IRCCS Casa Sollievo della Sofferenza	59
Azienda Ospedaliero-Universitaria Policlinico Umberto I / Sapienza Università di Roma	54
Presidio Ospedaliero G. Salesi, Azienda Ospedaliero Universitaria delle Marche	44
Associazione Oasi Maria SS. ONLUS – IRCCS	19
Azienda Ospedaliera Universitaria Mater Domini	16
ARNAS G. Brotzu	16
Total Survey	**1568**

Table S4. Patients contributed from the 15 centres participating to the survey.

Figure S1. Geographical distribution of the 15 centres (black dots) involved in the survey. Rome has three centres (visible as a single black dot).

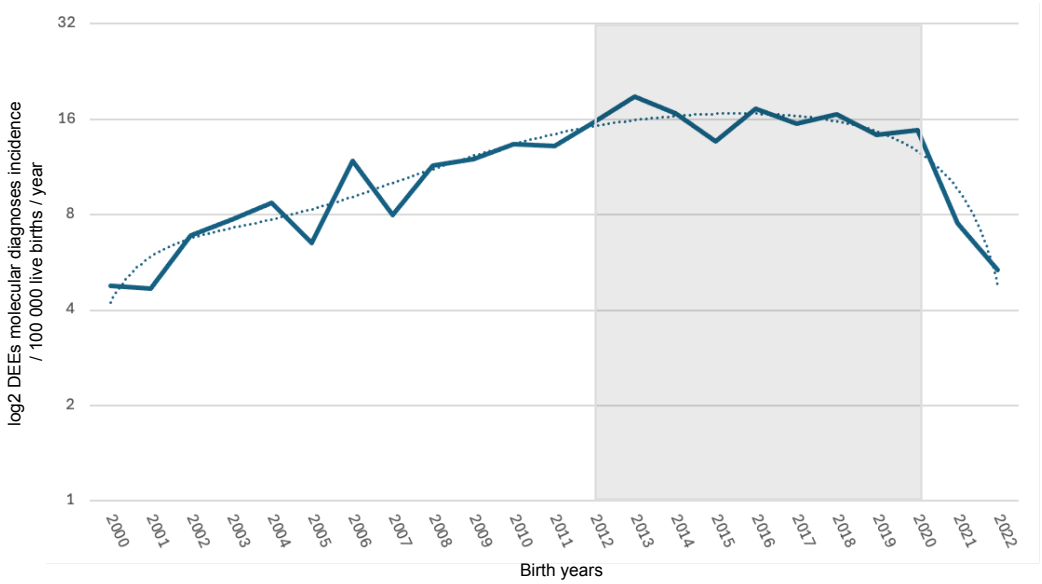
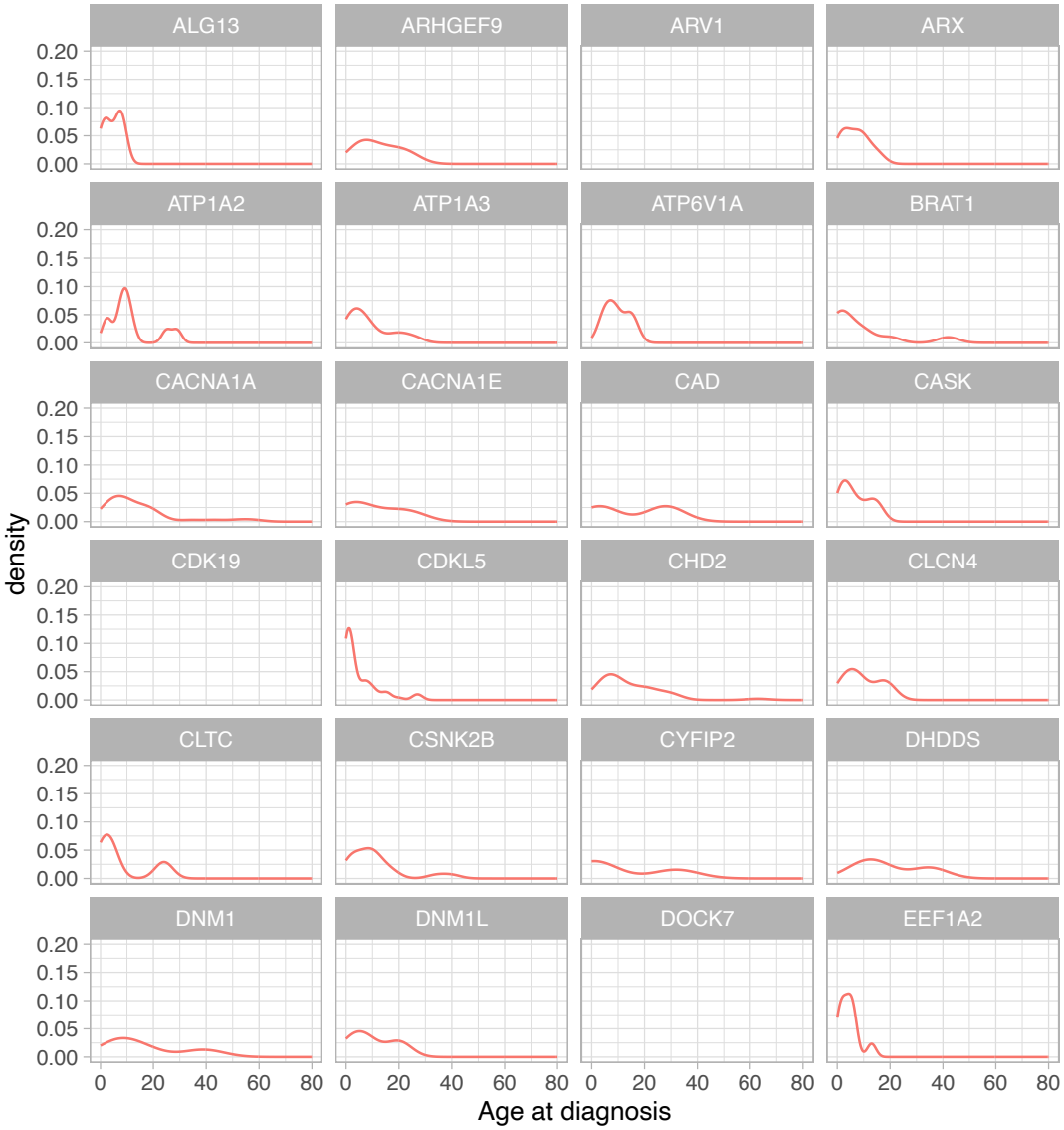
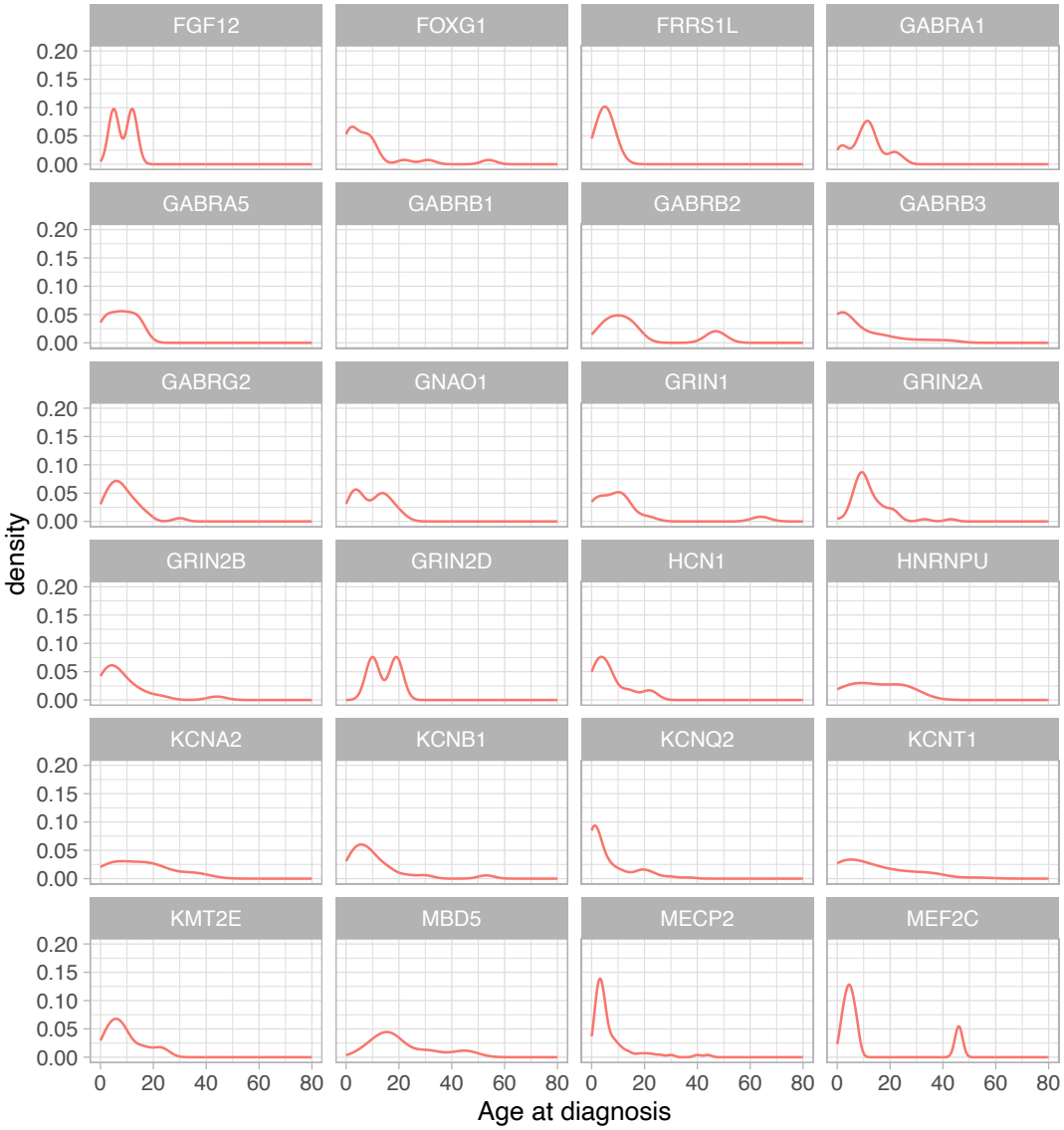
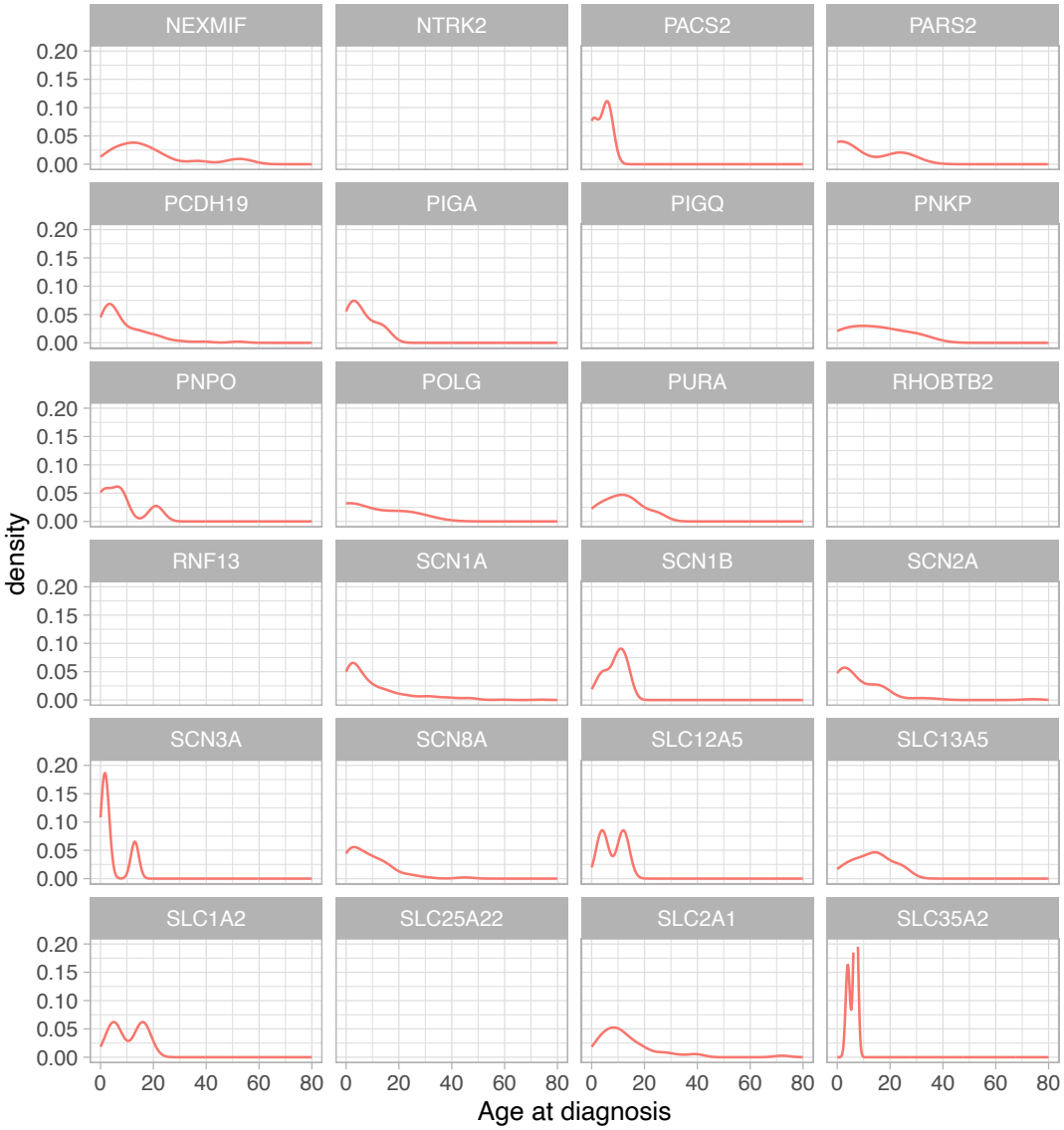


Figure S2. Semi-logarithmic plot of the DEEs molecular diagnoses incidence / 100 000 live births / year. The blue dotted polynomial trend line shows a tendency to plateau for the incidence in the 2012-2020 time frame (shaded in gray), within which we observed the molecular diagnoses of single-gene DEEs mean incidence to be 1 per 6277 live births (15.93/100 000; 95% CI 14.87-17.00).


ALG13
ARHGEF9
ARV1
ARX
ATP1A2
ATP1A3
ATP6V1A
BRAT1
CACNA1A
CACNA1E
CAD
CASK
CDK19
CDKL5
CHD2
CLCN4
CLTC
CSNK2B
CYFIP2
DHDDS
DNM1
DNM1L
DOCK7
EEF1A2
density
0.00
0.05
0.10
0.15
0.20
0
20
40
60
80
Age at diagnosis


FGF12
FOXG1
FRRS1L
GABRA1
GABRA5
GABRB1
GABRB2
GABRB3
GABRG2
GNAO1
GRIN1
GRIN2A
GRIN2B
GRIN2D
HCN1
HNRNPU
KCNA2
KCNB1
KCNQ2
KCNT1
KMT2E
MBD5
MECP2
MEF2C
density
0.00
0.05
0.10
0.15
0.20
0
20
40
60
80
Age at diagnosis


NEXMIF
NTRK2
PACS2
PARS2
PCDH19
PIGA
PIGQ
PNKP
PNPO
POLG
PURA
RHOBTB2
RNF13
SCN1A
SCN1B
SCN2A
SCN3A
SCN8A
SLC12A5
SLC13A5
SLC1A2
SLC25A22
SLC2A1
SLC35A2
density
0.00
0.05
0.10
0.15
0.20
0
20
40
60
80
Age at diagnosis

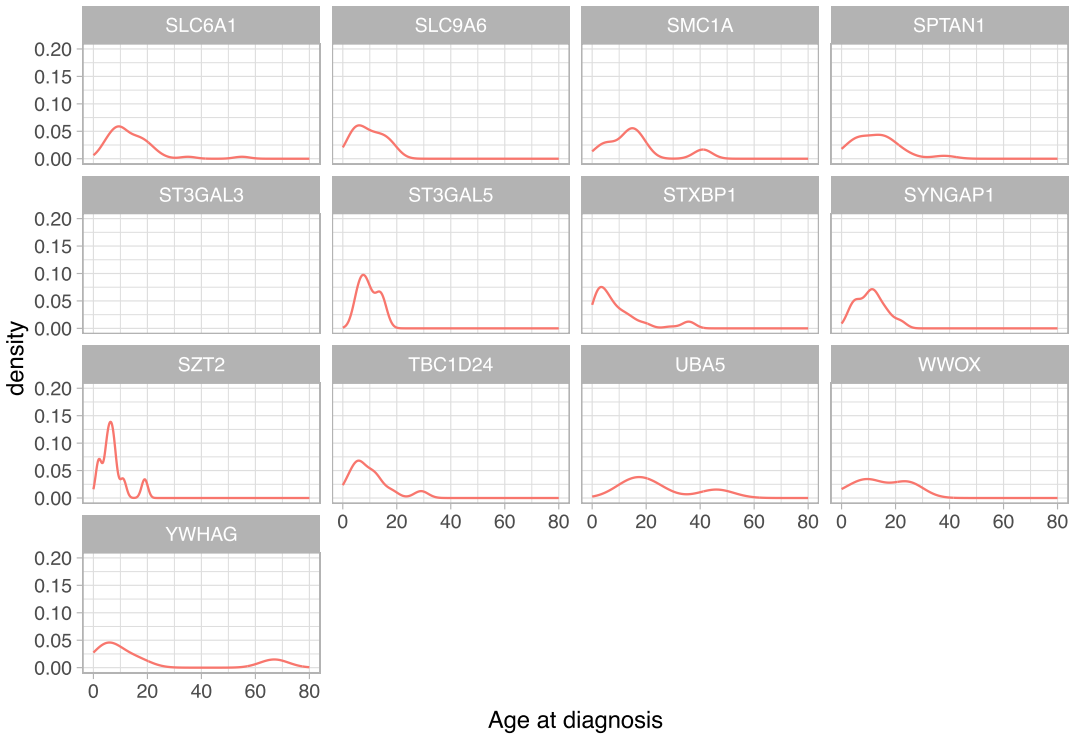


Figure S3. Age at molecular diagnosis density plots of the 85 genes for whom patient's records were available. For ten genes (*ARV1, CDK19, DOCK7, GABRB1, NTRK2, PIGQ, RHOBTB2, RNF13, SLC25A22, ST3GAL3*) the density plot is empty (patient's records < 2).

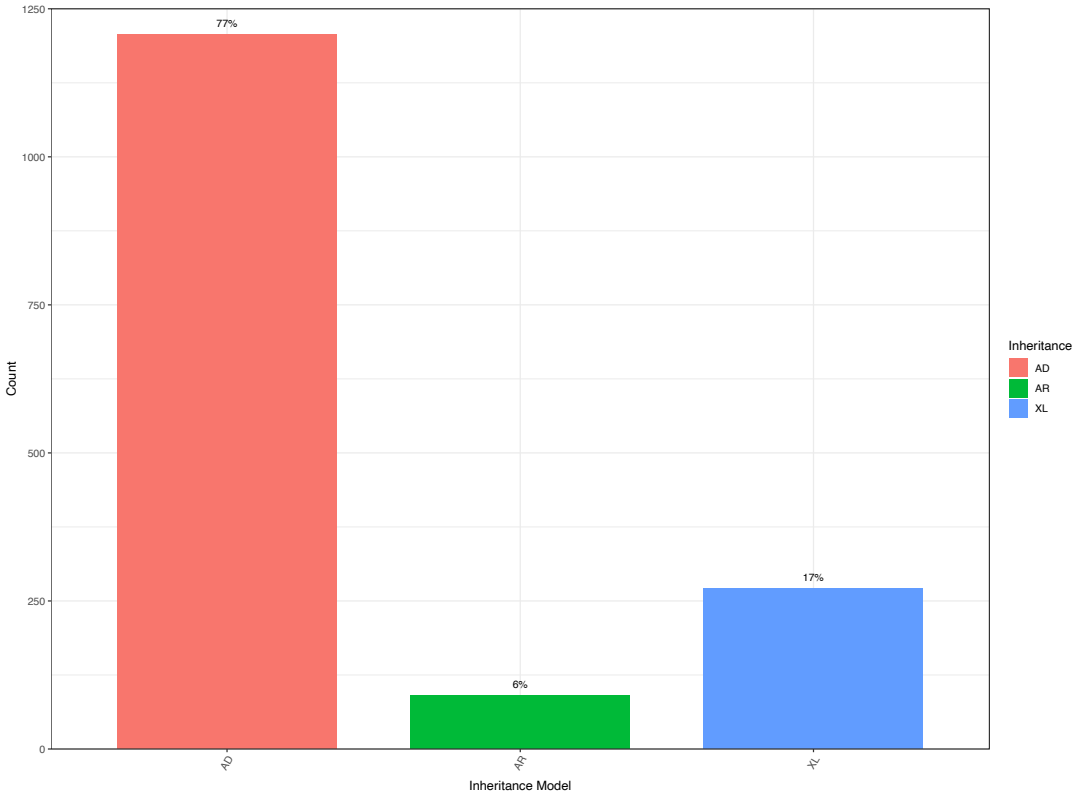


Figure S4. Bar plot of the observed inheritance models. Autosomal Dominant (AD), Autosomal Recessive (AR) and X-Linked (XL) inheritance patterns were observed in 77% (n=1207), in 6% (n=90) and in 17% (n=271) of the patients, respectively.

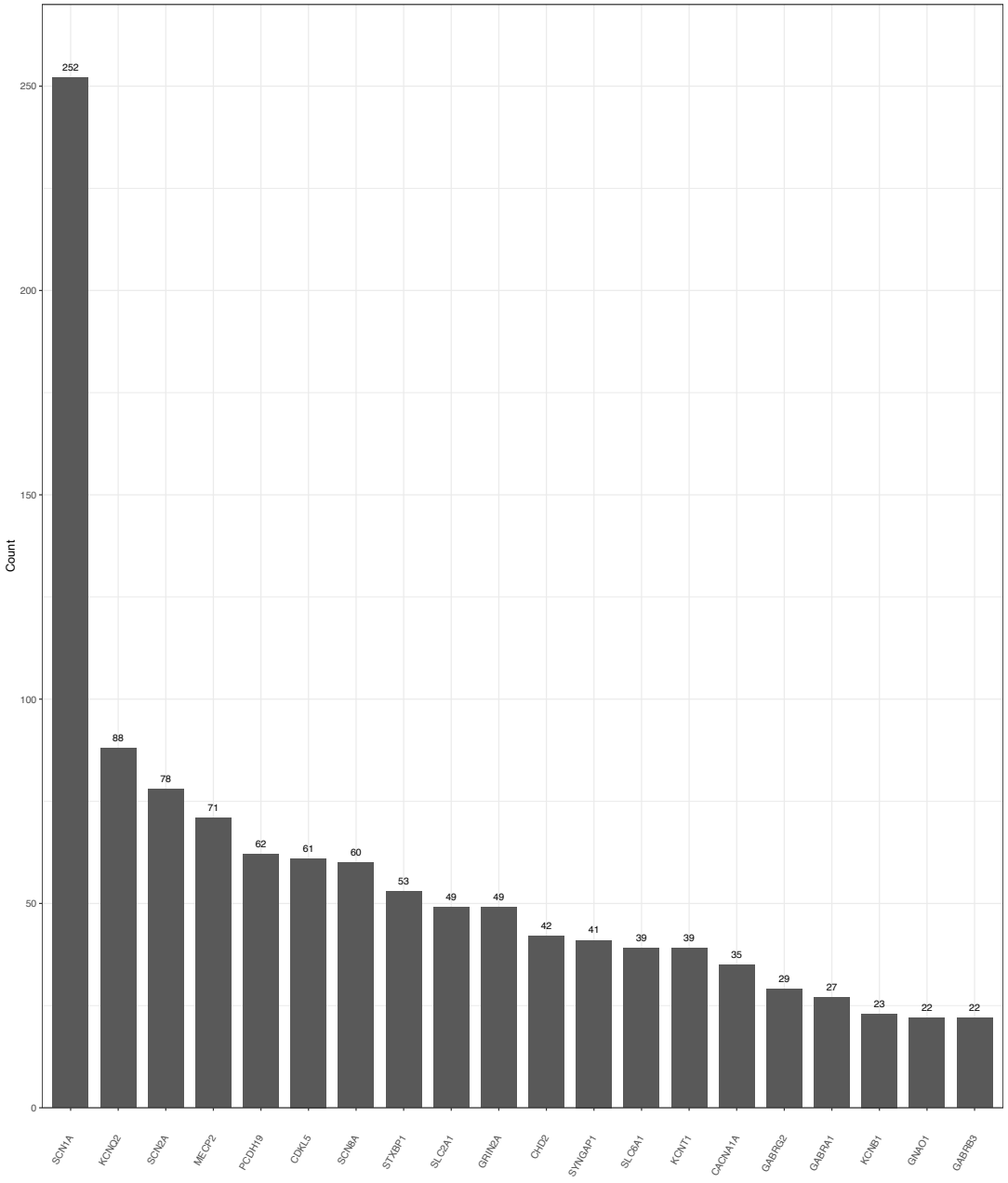


Figure S5. Top-20 most frequently reported genes in the survey.

Description of the data and file structure

We aimed to estimate real-world-evidence of the prevalence rate of genetic developmental and epileptic encephalopathies (DEEs) in the Italian population over a 11-year period.

Fifteen pediatric and adult tertiary Italian epilepsy centres participated to a survey related to 98 genes included in the molecular diagnostic workflows of most centers. We included in the survey patients with a clinical diagnosis of DEE, caused by a pathogenic or likely pathogenic variant in one of the selected genes, with a molecular diagnosis established between 2012 and 2022.

Description:

This is the dataset including data from the 1568 patients enrolled in the survey.

Variables

ID: Pseudoanonimyzation code

Referring_centre: The centre that has referred the patient(s). Each abbreviation correspond to a centre according the following list:

Bellaria-BO: IRCCS Istituto delle Scienze Neurologiche di Bologna, Bologna, Emilia Romagna
Besta-MI: IRCCS Istituto Neurologico Carlo Besta, Milan, Lombardy
Gaslini-GE: IRCCS Istituto Giannina Gaslini, Genoa, Liguria
Gemelli-RM: Fondazione Policlinico Universitario Agostino Gemelli, IRCCS, Rome, Lazio
IRCCSMEDEALC: IRCCS Eugenio Medea, Lecco, Lombardy
MaterDomini-CZ: Azienda Ospedaliera Universitaria Mater Domini, Catanzaro, Calabria
Meyer-FI: Meyer Children's Hospital IRCCS, Florence, Tuscany
Mondino-Pavia: IRCCS Mondino Foundation, Pavia, Lombardy
NeuroPedAOB: Azienda Ospedaliera Brotzu, Cagliari, Sardinia
NPIv.Sabelli-RM: Azienda Ospedaliero-Universitaria Policlinico Umberto I / Sapienza Università di Roma, Rome, Lazio
Oasi-Troina: Associazione Oasi Maria SS. ONLUS – IRCCS, Troina, Sicily
OBG-RM: Bambino Gesù Children's Hospital, IRCCS, Rome, Lazio
Salesi-Ancona: Presidio Ospedaliero G. Salesi, Azienda Ospedaliero Universitaria delle Marche, Ancona, Marche
SollievoeSoff.-FG: IRCCS Casa Sollievo della Sofferenza, San Giovanni Rotondo, Apulia
UOCNeuropsichiatriaInfantileVerona: Azienda Ospedaliera Universitaria Integrata di Verona, Verona, Veneto

Sex: the biological sex of the patient

Gene: the HUGO gene name involved in the molecular diagnosis of the patient

Age_at_molecular_diagnosis: Patient's age at molecular diagnosis

Age_at_the_time_of_inclusion: Patient's age at the time of inclusion (2022)

Italy_Region: Italian Region where the patient is born. "." stand for Extra-Italy

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ID	Referring_centre	Sex	Gene	Age_at_molecular_diagnosis	Age_at_the_time_of_inclusion	Italy_Region
1	Bellaria-BO	F	SLC2A1	39	45	EMILIA ROMAGNA
2	Bellaria-BO	M	SCN1A	48	53	EMILIA ROMAGNA
3	Bellaria-BO	F	SCN1A	38	44	SICILIA
4	Bellaria-BO	F	PCDH19	7	13	CALABRIA
5	Bellaria-BO	F	SCN2A	6	12	EMILIA ROMAGNA
6	Bellaria-BO	F	SCN1A	32	37	.
7	Bellaria-BO	M	PCDH19	27	32	EMILIA ROMAGNA
8	Bellaria-BO	F	KCNQ2	1	5	EMILIA ROMAGNA
9	Bellaria-BO	F	GRIN2A	9	13	EMILIA ROMAGNA
10	Bellaria-BO	M	CACNA1A	21	25	EMILIA ROMAGNA
11	Bellaria-BO	M	SCN1A	3	7	PUGLIE
12	Bellaria-BO	F	SCN1A	43	47	EMILIA ROMAGNA
13	Bellaria-BO	F	SCN1A	38	41	LOMBARDIA
14	Bellaria-BO	F	STXBP1	13	17	VENETO
15	Bellaria-BO	F	SCN8A	8	11	EMILIA ROMAGNA
16	Bellaria-BO	F	GRIN2A	9	11	CAMPANIA
17	Bellaria-BO	F	GABRG2	13	16	EMILIA ROMAGNA
18	Bellaria-BO	M	PCDH19	3	6	EMILIA ROMAGNA
19	Bellaria-BO	M	KCNQ2	5	7	EMILIA ROMAGNA
20	Bellaria-BO	M	SLC2A1	72	73	CAMPANIA
21	Bellaria-BO	M	SCN2A	17	19	CAMPANIA
22	Bellaria-BO	M	SCN2A	18	19	CAMPANIA
23	Bellaria-BO	F	SCN1A	11	11	EMILIA ROMAGNA
24	Bellaria-BO	F	SCN1A	29	31	LOMBARDIA
25	Bellaria-BO	M	CDKL5	1	2	.
26	Bellaria-BO	F	SCN1A	1	2	EMILIA ROMAGNA
27	Bellaria-BO	F	SLC6A1	54	55	EMILIA ROMAGNA
28	Bellaria-BO	M	MEF2C	46	46	MARCHE
29	Bellaria-BO	M	CHD2	28	28	MARCHE
30	Bellaria-BO	M	SLC2A1	21	30	PUGLIE
31	Bellaria-BO	F	MECP2	40	45	PUGLIE
32	Bellaria-BO	F	KCNQ2	21	22	EMILIA ROMAGNA
33	Bellaria-BO	F	KCNQ2	37	39	EMILIA ROMAGNA
34	Bellaria-BO	M	KCNQ2	23	24	EMILIA ROMAGNA
35	Bellaria-BO	M	SLC6A1	34	36	EMILIA ROMAGNA
36	Bellaria-BO	M	STXBP1	35	38	VENETO
37	Bellaria-BO	F	NEXMIF	26	28	LIGURIA
38	Bellaria-BO	F	NEXMIF	50	52	.
39	Bellaria-BO	F	NEXMIF	55	55	EMILIA ROMAGNA
40	Bellaria-BO	F	SMC1A	40	42	CALABRIA
41	Bellaria-BO	M	CACNA1E	26	29	TRENTINO A. A.
42	Bellaria-BO	F	KCNB1	53	55	EMILIA ROMAGNA
43	Bellaria-BO	M	SCN1A	59	61	TOSCANA
44	Bellaria-BO	M	STXBP1	34	36	PUGLIE
45	Bellaria-BO	F	GABRB2	47	49	EMILIA ROMAGNA
46	Bellaria-BO	F	YWHAG	66	68	CALABRIA
47	Bellaria-BO	M	GNAO1	12	14	EMILIA ROMAGNA
48	Bellaria-BO	M	SCN1A	25	25	CAMPANIA
49	Bellaria-BO	M	KCNT1	17	19	CAMPANIA
50	Bellaria-BO	M	SLC2A1	16	26	MARCHE
51	Bellaria-BO	F	SLC2A1	33	34	PUGLIE

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52	Bellaria-BO	M	SCN1A	47	55	EMILIA ROMAGNA
53	Bellaria-BO	M	SCN1A	33	42	EMILIA ROMAGNA
54	Bellaria-BO	F	SCN1A	19	26	SICILIA
55	Bellaria-BO	M	SCN1A	14	21	PIEMONTE
56	Bellaria-BO	M	SCN1A	25	26	EMILIA ROMAGNA
57	Bellaria-BO	F	CYFIP2	32	32	LOMBARDIA
58	Bellaria-BO	F	MBD5	18	20	BASILICATA
59	Bellaria-BO	F	PARS2	24	25	UMBRIA
60	Bellaria-BO	F	PNKP	32	35	EMILIA ROMAGNA
61	Besta-MI	M	ARX	7	9	LOMBARDIA
62	Besta-MI	M	BRAT1	10	11	LOMBARDIA
63	Besta-MI	F	CACNA1A	4	8	LOMBARDIA
64	Besta-MI	M	CASK	6	9	LOMBARDIA
65	Besta-MI	M	CHD2	6	8	LOMBARDIA
66	Besta-MI	F	DNM1	9	13	LOMBARDIA
67	Besta-MI	F	FOXG1	8	12	PIEMONTE
68	Besta-MI	F	FOXG1	31	36	LOMBARDIA
69	Besta-MI	F	GABRA1	12	15	LOMBARDIA
70	Besta-MI	F	GABRA1	2	5	LOMBARDIA
71	Besta-MI	F	GABRA1	11	13	LOMBARDIA
72	Besta-MI	F	GABRB3	9	9	LOMBARDIA
73	Besta-MI	F	GABRG2	5	7	.
74	Besta-MI	F	GABRG2	18	20	LOMBARDIA
75	Besta-MI	M	GABRG2	6	6	LOMBARDIA
76	Besta-MI	F	GNAO1	6	8	LOMBARDIA
77	Besta-MI	F	GRIN2A	6	8	LOMBARDIA
78	Besta-MI	M	GRIN2A	23	28	LOMBARDIA
79	Besta-MI	M	GRIN2A	5	8	LOMBARDIA
80	Besta-MI	F	GRIN2A	16	20	.
81	Besta-MI	F	KCNA2	10	13	LOMBARDIA
82	Besta-MI	M	KCNA2	23	27	PIEMONTE
83	Besta-MI	M	KCNA2	15	17	PIEMONTE
84	Besta-MI	M	KCNA2	35	36	LOMBARDIA
85	Besta-MI	F	KCNQ2	8	12	PIEMONTE
86	Besta-MI	F	KCNQ2	0	1	LOMBARDIA
87	Besta-MI	F	KCNQ2	25	29	PIEMONTE
88	Besta-MI	F	KCNT1	53	56	LOMBARDIA
89	Besta-MI	F	KCNT1	17	19	PUGLIE
90	Besta-MI	M	KCNT1	0	6	EMILIA ROMAGNA
91	Besta-MI	M	KCNT1	5	6	LOMBARDIA
92	Besta-MI	F	MECP2	3	5	LOMBARDIA
93	Besta-MI	M	MECP2	17	22	LOMBARDIA
94	Besta-MI	M	MEF2C	5	10	LOMBARDIA
95	Besta-MI	F	PCDH19	5	8	LOMBARDIA
96	Besta-MI	F	PCDH19	16	18	LOMBARDIA
97	Besta-MI	F	SCN1A	3	9	LOMBARDIA
98	Besta-MI	F	SCN1A	2	7	.
99	Besta-MI	F	SCN1A	38	42	CALABRIA
100	Besta-MI	F	SCN1A	4	6	LOMBARDIA
101	Besta-MI	M	SCN1A	15	21	LOMBARDIA
102	Besta-MI	F	SCN1A	2	3	CALABRIA
103	Besta-MI	F	SCN1A	0	0	LOMBARDIA

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104	Besta-MI	M	SCN1A	15	16	PUGLIE
105	Besta-MI	M	SCN1A	9	11	ABRUZZI
106	Besta-MI	F	SCN1A	6	6	LOMBARDIA
107	Besta-MI	F	SCN2A	9	11	CAMPANIA
108	Besta-MI	M	SCN2A	7	13	LOMBARDIA
109	Besta-MI	M	SCN8A	17	20	VALLE DÕAOSTA
110	Besta-MI	M	SCN8A	1	4	LOMBARDIA
111	Besta-MI	M	SCN8A	5	9	LOMBARDIA
112	Besta-MI	F	SCN8A	23	28	.
113	Besta-MI	M	SCN8A	3	6	LOMBARDIA
114	Besta-MI	M	SLC12A5	4	8	LOMBARDIA
115	Besta-MI	M	SLC2A1	27	30	LOMBARDIA
116	Besta-MI	F	SLC2A1	10	16	SICILIA
117	Besta-MI	M	SLC6A1	17	19	LOMBARDIA
118	Besta-MI	M	SLC6A1	9	9	LOMBARDIA
119	Besta-MI	M	SYNGAP1	9	12	LOMBARDIA
120	Besta-MI	M	SYNGAP1	11	16	LOMBARDIA
121	Besta-MI	F	SYNGAP1	13	16	LOMBARDIA
122	Besta-MI	F	TBC1D24	5	11	LOMBARDIA
123	Besta-MI	F	TBC1D24	28	34	LOMBARDIA
124	Besta-MI	M	CDKL5	4	12	CALABRIA
125	Besta-MI	M	KCNB1	10	14	VENETO
126	Besta-MI	M	ARHGEF9	15	18	LOMBARDIA
127	Besta-MI	F	GABRA5	8	9	LOMBARDIA
128	Besta-MI	M	HNRNPU	8	8	LAZIO
129	Besta-MI	M	SCN1B	8	10	LOMBARDIA
130	Besta-MI	M	SCN3A	2	2	LOMBARDIA
131	Besta-MI	F	SLC13A5	16	19	SICILIA
132	Besta-MI	F	SLC13A5	17	20	.
133	Besta-MI	M	SLC13A5	5	9	PUGLIE
134	Besta-MI	F	ST3GAL5	8	12	PUGLIE
135	Gaslini-GE	M	STXBP1	4	11	LOMBARDIA
136	Gaslini-GE	F	STXBP1	4	11	CAMPANIA
137	Gaslini-GE	M	KCNT1	15	22	LIGURIA
138	Gaslini-GE	F	CDKL5	2	9	LIGURIA
139	Gaslini-GE	F	SCN1A	6	13	LIGURIA
140	Gaslini-GE	M	STXBP1	5	12	EMILIA ROMAGNA
141	Gaslini-GE	F	KCNQ2	2	9	LOMBARDIA
142	Gaslini-GE	M	TBC1D24	11	18	LAZIO
143	Gaslini-GE	F	TBC1D24	2	9	SICILIA
144	Gaslini-GE	F	SCN1A	1	8	LIGURIA
145	Gaslini-GE	F	SCN8A	7	14	LIGURIA
146	Gaslini-GE	F	CDKL5	1	8	PIEMONTE
147	Gaslini-GE	F	SCN1A	1	8	CAMPANIA
148	Gaslini-GE	F	KCNQ2	0	7	LIGURIA
149	Gaslini-GE	M	CDKL5	12	19	LIGURIA
150	Gaslini-GE	M	SCN8A	2	9	CALABRIA
151	Gaslini-GE	F	SCN8A	5	11	.
152	Gaslini-GE	F	SLC2A1	5	11	LIGURIA
153	Gaslini-GE	M	KCNQ2	1	7	SICILIA
154	Gaslini-GE	F	CHD2	14	20	PIEMONTE
155	Gaslini-GE	F	CDKL5	0	6	LIGURIA

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156	Gaslini-GE	F	CDKL5	2	8	PIEMONTE
157	Gaslini-GE	M	KCNT1	3	9	LIGURIA
158	Gaslini-GE	M	KCNQ2	0	6	LIGURIA
159	Gaslini-GE	M	STXBP1	6	12	PIEMONTE
160	Gaslini-GE	M	KCNQ2	1	7	LIGURIA
161	Gaslini-GE	F	SCN1A	8	14	SICILIA
162	Gaslini-GE	M	KCNQ2	6	12	UMBRIA
163	Gaslini-GE	F	SLC25A22	0	6	SICILIA
164	Gaslini-GE	F	KCNQ2	22	27	VENETO
165	Gaslini-GE	M	HCN1	2	7	LIGURIA
166	Gaslini-GE	F	PCDH19	11	16	EMILIA ROMAGNA
167	Gaslini-GE	M	SLC6A1	9	14	EMILIA ROMAGNA
168	Gaslini-GE	M	GRIN2A	13	18	SICILIA
169	Gaslini-GE	F	PCDH19	1	6	LIGURIA
170	Gaslini-GE	M	SLC2A1	9	13	PIEMONTE
171	Gaslini-GE	F	PACS2	0	4	CAMPANIA
172	Gaslini-GE	M	EEF1A2	1	5	LIGURIA
173	Gaslini-GE	M	NTRK2	1	5	.
174	Gaslini-GE	M	KCNB1	0	4	LIGURIA
175	Gaslini-GE	M	SZT2	6	10	SICILIA
176	Gaslini-GE	M	KCNQ2	0	3	CALABRIA
177	Gaslini-GE	F	GABRB3	1	4	SICILIA
178	Gaslini-GE	F	GRIN2A	10	13	LIGURIA
179	Gaslini-GE	M	CDKL5	0	3	SARDEGNA
180	Gaslini-GE	M	GABRA1	9	12	SICILIA
181	Gaslini-GE	M	SYNGAP1	4	6	EMILIA ROMAGNA
182	Gaslini-GE	F	GABRG2	14	16	LIGURIA
183	Gaslini-GE	M	SPTAN1	15	17	PIEMONTE
184	Gaslini-GE	M	GRIN2A	7	9	PUGLIE
185	Gaslini-GE	M	SCN1A	4	5	.
186	Gaslini-GE	M	SCN2A	1	2	CAMPANIA
187	Gaslini-GE	F	SYNGAP1	5	5	PIEMONTE
188	Gaslini-GE	M	GRIN2A	9	9	LIGURIA
189	Gaslini-GE	F	SCN2A	15	15	LIGURIA
190	Gaslini-GE	F	GRIN2A	13	13	LIGURIA
191	Gaslini-GE	F	SCN1A	12	17	EMILIA ROMAGNA
192	Gaslini-GE	M	SCN1A	2	8	TOSCANA
193	Gaslini-GE	M	GRIN1	1	5	PUGLIE
194	Gaslini-GE	F	CHD2	6	6	LIGURIA
195	Gaslini-GE	M	KCNT1	0	3	LIGURIA
196	Gemelli-RM	F	SYNGAP1	17	20	LAZIO
197	Gemelli-RM	M	SYNGAP1	16	18	LAZIO
198	Gemelli-RM	F	ARX	15	17	PUGLIE
199	Gemelli-RM	F	SLC6A1	13	16	ABRUZZI
200	Gemelli-RM	F	SCN1A	12	16	SARDEGNA
201	Gemelli-RM	F	SCN1A	11	16	LAZIO
202	Gemelli-RM	M	SPTAN1	20	26	LAZIO
203	Gemelli-RM	M	SPTAN1	9	12	CAMPANIA
204	Gemelli-RM	F	SLC2A1	6	15	LAZIO
205	Gemelli-RM	F	SLC6A1	8	13	CAMPANIA
206	Gemelli-RM	F	KCNQ2	5	10	ABRUZZI
207	Gemelli-RM	M	DOCK7	11	17	CALABRIA

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208	Gemelli-RM	F	CACNA1E	3	7	ABRUZZI
209	Gemelli-RM	F	SYNGAP1	12	15	LAZIO
210	Gemelli-RM	M	CASK	10	16	LAZIO
211	Gemelli-RM	F	TBC1D24	17	23	LAZIO
212	Gemelli-RM	F	SCN2A	17	20	LAZIO
213	Gemelli-RM	F	MECP2	2	5	LAZIO
214	Gemelli-RM	F	PCDH19	15	25	LAZIO
215	Gemelli-RM	M	SYNGAP1	10	13	LAZIO
216	Gemelli-RM	M	GABRB3	4	8	LAZIO
217	Gemelli-RM	F	SLC2A1	6	11	LAZIO
218	Gemelli-RM	M	DNM1L	8	13	LAZIO
219	Gemelli-RM	F	PCDH19	1	10	LAZIO
220	Gemelli-RM	F	TBC1D24	4	7	LAZIO
221	Gemelli-RM	F	MEF2C	7	17	LAZIO
222	Gemelli-RM	M	SCN1A	12	15	ABRUZZI
223	Gemelli-RM	F	SCN1A	2	11	ABRUZZI
224	Gemelli-RM	M	SCN1A	11	18	.
225	Gemelli-RM	M	SCN1A	6	14	LAZIO
226	Gemelli-RM	M	SCN1A	1	5	LAZIO
227	Gemelli-RM	F	SCN8A	1	2	LAZIO
228	Gemelli-RM	F	SCN1A	6	14	.
229	Gemelli-RM	F	SCN1A	4	14	.
230	Gemelli-RM	M	SCN1A	2	12	LAZIO
231	Gemelli-RM	F	SCN1A	4	6	LAZIO
232	Gemelli-RM	F	PCDH19	11	13	LAZIO
233	Gemelli-RM	F	SCN1A	8	13	ABRUZZI
234	Gemelli-RM	F	GABRA1	11	12	LAZIO
235	Gemelli-RM	F	GABRA1	9	12	LAZIO
236	Gemelli-RM	M	STXBP1	5	12	LAZIO
237	Gemelli-RM	M	GABRA1	8	11	CALABRIA
238	Gemelli-RM	F	SCN1A	8	10	LAZIO
239	Gemelli-RM	M	KCNQ2	5	10	CALABRIA
240	Gemelli-RM	F	CDKL5	1	10	SICILIA
241	Gemelli-RM	F	SCN1A	2	9	CAMPANIA
242	Gemelli-RM	F	CDKL5	1	9	LAZIO
243	Gemelli-RM	F	GNAO1	2	8	LAZIO
244	Gemelli-RM	F	SCN1A	1	8	UMBRIA
245	Gemelli-RM	M	SCN1A	4	8	.
246	Gemelli-RM	M	KCNQ2	1	6	LAZIO
247	Gemelli-RM	M	KCNT1	1	6	LAZIO
248	Gemelli-RM	F	SCN1A	1	4	PUGLIE
249	Gemelli-RM	F	FOXG1	0	3	LAZIO
250	Gemelli-RM	F	SCN2A	1	2	LAZIO
251	Gemelli-RM	F	SCN8A	0	2	LAZIO
252	Gemelli-RM	F	CDKL5	2	2	CAMPANIA
253	Gemelli-RM	F	CDKL5	20	27	CALABRIA
254	Gemelli-RM	M	GRIN1	21	25	LAZIO
255	Gemelli-RM	F	KCNQ2	17	24	LAZIO
256	IRCCSMEDEALC	F	ATP1A2	10	10	LOMBARDIA
257	IRCCSMEDEALC	F	ATP1A3	12	13	.
258	IRCCSMEDEALC	M	ATP1A3	2	9	LOMBARDIA
259	IRCCSMEDEALC	M	BRAT1	42	44	LOMBARDIA

260	IRCCSMEDEALC	F	CACNA1A	5	8	PUGLIE
261	IRCCSMEDEALC	M	CACNA1A	9	10	LOMBARDIA
262	IRCCSMEDEALC	M	CACNA1A	17	21	LOMBARDIA
263	IRCCSMEDEALC	M	CASK	5	8	LOMBARDIA
264	IRCCSMEDEALC	F	CHD2	5	8	VENETO
265	IRCCSMEDEALC	M	CHD2	30	31	LOMBARDIA
266	IRCCSMEDEALC	M	CHD2	12	16	LOMBARDIA
267	IRCCSMEDEALC	M	CHD2	3	7	LOMBARDIA
268	IRCCSMEDEALC	M	CLCN4	18	23	LOMBARDIA
269	IRCCSMEDEALC	F	DNM1L	20	22	LOMBARDIA
270	IRCCSMEDEALC	M	EEF1A2	13	17	PUGLIE
271	IRCCSMEDEALC	F	FOXG1	1	10	LOMBARDIA
272	IRCCSMEDEALC	F	FOXG1	5	10	PUGLIE
273	IRCCSMEDEALC	F	FOXG1	1	9	TOSCANA
274	IRCCSMEDEALC	F	GABRA1	25	30	CAMPANIA
275	IRCCSMEDEALC	F	GABRA1	17	18	PUGLIE
276	IRCCSMEDEALC	F	GABRA1	12	18	PUGLIE
277	IRCCSMEDEALC	F	GABRB3	33	34	LOMBARDIA
278	IRCCSMEDEALC	F	GABRG2	2	6	VENETO
279	IRCCSMEDEALC	M	GRIN1	10	16	LOMBARDIA
280	IRCCSMEDEALC	M	GRIN2A	11	16	LOMBARDIA
281	IRCCSMEDEALC	M	GRIN2A	10	16	PUGLIE
282	IRCCSMEDEALC	M	GRIN2A	10	16	LOMBARDIA
283	IRCCSMEDEALC	M	GRIN2B	44	46	VENETO
284	IRCCSMEDEALC	M	GRIN2B	1	7	LOMBARDIA
285	IRCCSMEDEALC	F	KCNB1	6	6	.
286	IRCCSMEDEALC	M	KCNB1	14	18	.
287	IRCCSMEDEALC	F	KCNQ2	24	25	PIEMONTE
288	IRCCSMEDEALC	F	KCNQ2	0	2	LOMBARDIA
289	IRCCSMEDEALC	M	KCNQ2	1	1	LOMBARDIA
290	IRCCSMEDEALC	F	KCNQ2	19	21	BASILICATA
291	IRCCSMEDEALC	F	KCNQ2	1	5	LOMBARDIA
292	IRCCSMEDEALC	M	KCNT1	8	15	PUGLIE
293	IRCCSMEDEALC	F	MECP2	2	5	LOMBARDIA
294	IRCCSMEDEALC	F	MECP2	1	2	PUGLIE
295	IRCCSMEDEALC	F	MECP2	3	5	PUGLIE
296	IRCCSMEDEALC	F	MECP2	2	2	LOMBARDIA
297	IRCCSMEDEALC	F	MECP2	9	10	CALABRIA
298	IRCCSMEDEALC	M	NEXMIF	11	13	LOMBARDIA
299	IRCCSMEDEALC	F	NEXMIF	15	20	PUGLIE
300	IRCCSMEDEALC	F	NEXMIF	21	27	LOMBARDIA
301	IRCCSMEDEALC	M	NEXMIF	19	19	LOMBARDIA
302	IRCCSMEDEALC	F	PCDH19	17	17	LOMBARDIA
303	IRCCSMEDEALC	M	SCN1A	1	3	LOMBARDIA
304	IRCCSMEDEALC	F	SCN1A	0	2	LOMBARDIA
305	IRCCSMEDEALC	F	SCN1A	1	5	VENETO
306	IRCCSMEDEALC	F	SCN1A	1	7	LOMBARDIA
307	IRCCSMEDEALC	F	SCN1A	2	7	LOMBARDIA
308	IRCCSMEDEALC	F	SCN1A	1	4	LOMBARDIA
309	IRCCSMEDEALC	F	SCN1A	3	3	PUGLIE
310	IRCCSMEDEALC	M	SCN1A	48	52	LOMBARDIA
311	IRCCSMEDEALC	M	SCN1A	2	6	LOMBARDIA

312	IRCCSMEDEALC	F	SCN1A	1	2	LOMBARDIA
313	IRCCSMEDEALC	F	SCN1A	6	6	LOMBARDIA
314	IRCCSMEDEALC	M	SCN2A	17	18	LOMBARDIA
315	IRCCSMEDEALC	M	SCN2A	26	29	SICILIA
316	IRCCSMEDEALC	M	SCN2A	5	9	SICILIA
317	IRCCSMEDEALC	F	SCN8A	12	19	LOMBARDIA
318	IRCCSMEDEALC	M	SCN8A	8	14	LOMBARDIA
319	IRCCSMEDEALC	F	SLC2A1	2	3	LOMBARDIA
320	IRCCSMEDEALC	M	SLC6A1	6	10	LOMBARDIA
321	IRCCSMEDEALC	M	SLC6A1	14	22	LOMBARDIA
322	IRCCSMEDEALC	M	SLC6A1	7	10	VENETO
323	IRCCSMEDEALC	M	SLC9A6	14	20	SICILIA
324	IRCCSMEDEALC	M	SLC9A6	11	16	CALABRIA
325	IRCCSMEDEALC	M	SPTAN1	6	9	LOMBARDIA
326	IRCCSMEDEALC	M	SPTAN1	37	39	VENETO
327	IRCCSMEDEALC	M	STXBP1	35	37	VENETO
328	IRCCSMEDEALC	F	STXBP1	13	17	VENETO
329	IRCCSMEDEALC	M	STXBP1	10	15	PUGLIE
330	IRCCSMEDEALC	F	SYNGAP1	7	12	.
331	IRCCSMEDEALC	F	UBA5	16	18	FRIULI V. G.
332	IRCCSMEDEALC	F	UBA5	22	27	PUGLIE
333	IRCCSMEDEALC	M	UBA5	45	47	LOMBARDIA
334	IRCCSMEDEALC	F	YWHAG	3	3	PUGLIE
335	IRCCSMEDEALC	M	GRIN1	10	16	LOMBARDIA
336	IRCCSMEDEALC	M	STXBP1	35	37	VENETO
337	IRCCSMEDEALC	M	CLTC	24	28	LOMBARDIA
338	IRCCSMEDEALC	M	POLG	26	26	FRIULI V. G.
339	IRCCSMEDEALC	F	SCN3A	13	18	LOMBARDIA
340	IRCCSMEDEALC	M	HNRNPU	13	17	LOMBARDIA
341	IRCCSMEDEALC	F	PURA	24	24	VENETO
342	IRCCSMEDEALC	M	MBD5	14	19	LOMBARDIA
343	IRCCSMEDEALC	M	PURA	15	21	LOMBARDIA
344	IRCCSMEDEALC	F	PNPO	21	21	MARCHE
345	IRCCSMEDEALC	F	CSNK2B	8	11	LOMBARDIA
346	IRCCSMEDEALC	M	STXBP1	12	12	ABRUZZI
347	MaterDomini-CZ	M	SCN1A	9	13	CALABRIA
348	MaterDomini-CZ	F	CHD2	63	64	CALABRIA
349	MaterDomini-CZ	M	KCNT1	34	35	CALABRIA
350	MaterDomini-CZ	F	PCDH19	52	53	CALABRIA
351	MaterDomini-CZ	F	CHD2	20	21	LOMBARDIA
352	MaterDomini-CZ	F	KCNQ2	31	32	CALABRIA
353	MaterDomini-CZ	F	SCN1A	74	75	CALABRIA
354	MaterDomini-CZ	M	KCNA2	36	38	CAMPANIA
355	MaterDomini-CZ	F	KCNT1	36	38	CALABRIA
356	MaterDomini-CZ	F	KCNQ2	18	20	CALABRIA
357	MaterDomini-CZ	F	SCN1A	18	21	CALABRIA
358	MaterDomini-CZ	M	SCN1A	13	16	CALABRIA
359	MaterDomini-CZ	F	SCN1A	13	16	CALABRIA
360	MaterDomini-CZ	M	SCN1A	16	19	CALABRIA
361	MaterDomini-CZ	M	SCN1A	22	26	CALABRIA
362	MaterDomini-CZ	F	SLC2A1	8	13	CALABRIA
363	Meyer-FI	F	SLC6A1	20	22	VENETO

364	Meyer-FI	F	SPTAN1	13	16	LAZIO
365	Meyer-FI	F	ST3GAL5	13	16	PUGLIE
366	Meyer-FI	M	GRIN1	13	16	PIEMONTE
367	Meyer-FI	F	GRIN1	13	15	CALABRIA
368	Meyer-FI	M	CDKL5	8	14	PUGLIE
369	Meyer-FI	M	GABRA5	14	14	MOLISE
370	Meyer-FI	M	SZT2	7	13	ABRUZZI
371	Meyer-FI	F	SYNGAP1	8	12	MARCHE
372	Meyer-FI	F	ALG13	8	9	UMBRIA
373	Meyer-FI	F	ALG13	3	6	EMILIA ROMAGNA
374	Meyer-FI	M	ARX	10	18	.
375	Meyer-FI	M	ARX	2	10	CALABRIA
376	Meyer-FI	M	ARX	3	8	EMILIA ROMAGNA
377	Meyer-FI	M	ATP1A2	3	10	LOMBARDIA
378	Meyer-FI	F	ATP1A3	3	9	ABRUZZI
379	Meyer-FI	F	ATP1A3	7	9	SICILIA
380	Meyer-FI	F	ATP1A3	18	20	CAMPANIA
381	Meyer-FI	M	ATP1A3	26	30	EMILIA ROMAGNA
382	Meyer-FI	M	ATP1A3	7	9	.
383	Meyer-FI	F	ATP1A3	1	3	LOMBARDIA
384	Meyer-FI	F	ATP1A3	3	10	EMILIA ROMAGNA
385	Meyer-FI	F	ATP6V1A	5	8	PUGLIE
386	Meyer-FI	F	ATP6V1A	15	19	TOSCANA
387	Meyer-FI	M	BRAT1	0	1	TOSCANA
388	Meyer-FI	F	CACNA1A	10	15	MARCHE
389	Meyer-FI	F	CACNA1A	2	7	CAMPANIA
390	Meyer-FI	F	CACNA1A	6	11	TOSCANA
391	Meyer-FI	F	CACNA1A	2	6	TOSCANA
392	Meyer-FI	F	CACNA1A	15	18	LAZIO
393	Meyer-FI	M	CACNA1A	19	22	.
394	Meyer-FI	F	CACNA1A	17	19	LAZIO
395	Meyer-FI	F	CACNA1A	23	25	TOSCANA
396	Meyer-FI	M	CACNA1A	11	13	TOSCANA
397	Meyer-FI	M	CACNA1A	2	2	PIEMONTE
398	Meyer-FI	M	CACNA1A	9	9	TRENTINO A. A.
399	Meyer-FI	M	CACNA1A	9	9	EMILIA ROMAGNA
400	Meyer-FI	F	CACNA1E	12	15	BASILICATA
401	Meyer-FI	F	CACNA1E	20	23	TOSCANA
402	Meyer-FI	F	CACNA1E	3	5	.
403	Meyer-FI	F	CASK	14	20	TOSCANA
404	Meyer-FI	F	CASK	2	8	CAMPANIA
405	Meyer-FI	F	CASK	2	7	TOSCANA
406	Meyer-FI	F	CASK	9	14	.
407	Meyer-FI	F	CASK	16	21	LOMBARDIA
408	Meyer-FI	F	CASK	2	6	TOSCANA
409	Meyer-FI	F	CDKL5	1	9	SICILIA
410	Meyer-FI	M	CDKL5	7	14	VENETO
411	Meyer-FI	F	CDKL5	7	14	MARCHE
412	Meyer-FI	F	CDKL5	1	7	TRENTINO A. A.
413	Meyer-FI	F	NEXMIF	5	6	PUGLIE
414	Meyer-FI	M	CDKL5	4	13	TOSCANA
415	Meyer-FI	F	CDKL5	2	9	VALLE DÕAOSTA

416	Meyer-FI	F	CDKL5	11	17	LAZIO
417	Meyer-FI	F	CDKL5	0	5	TOSCANA
418	Meyer-FI	F	CDKL5	1	7	TOSCANA
419	Meyer-FI	F	CDKL5	10	13	CALABRIA
420	Meyer-FI	F	CDKL5	3	6	PIEMONTE
421	Meyer-FI	F	CDKL5	4	7	CAMPANIA
422	Meyer-FI	F	CDKL5	1	3	CAMPANIA
423	Meyer-FI	F	CDKL5	0	0	TOSCANA
424	Meyer-FI	F	CDKL5	0	0	PIEMONTE
425	Meyer-FI	F	CDKL5	1	1	CAMPANIA
426	Meyer-FI	F	CDKL5	2	2	VENETO
427	Meyer-FI	F	CDKL5	2	2	TOSCANA
428	Meyer-FI	F	CDKL5	2	3	UMBRIA
429	Meyer-FI	F	CDKL5	14	15	EMILIA ROMAGNA
430	Meyer-FI	M	CHD2	18	24	TOSCANA
431	Meyer-FI	M	CHD2	15	19	.
432	Meyer-FI	F	CHD2	4	8	CALABRIA
433	Meyer-FI	M	CHD2	11	14	EMILIA ROMAGNA
434	Meyer-FI	F	CHD2	10	13	CAMPANIA
435	Meyer-FI	M	CHD2	29	31	CAMPANIA
436	Meyer-FI	M	CHD2	14	16	.
437	Meyer-FI	M	CHD2	20	25	TOSCANA
438	Meyer-FI	M	CHD2	7	9	.
439	Meyer-FI	M	CHD2	7	10	.
440	Meyer-FI	F	CHD2	5	5	UMBRIA
441	Meyer-FI	F	CHD2	7	7	SICILIA
442	Meyer-FI	F	CLCN4	3	6	TOSCANA
443	Meyer-FI	F	DNM1	42	43	TOSCANA
444	Meyer-FI	M	DNM1	36	36	UMBRIA
445	Meyer-FI	F	EEF1A2	4	6	SICILIA
446	Meyer-FI	M	EEF1A2	6	8	TOSCANA
447	Meyer-FI	F	EEF1A2	0	2	TRENTINO A. A.
448	Meyer-FI	M	EEF1A2	2	3	EMILIA ROMAGNA
449	Meyer-FI	F	EEF1A2	2	6	VENETO
450	Meyer-FI	M	EEF1A2	6	6	TOSCANA
451	Meyer-FI	F	FGF12	12	14	TOSCANA
452	Meyer-FI	M	FOXG1	8	13	CAMPANIA
453	Meyer-FI	F	FOXG1	11	14	SICILIA
454	Meyer-FI	M	FOXG1	22	25	LOMBARDIA
455	Meyer-FI	F	FOXG1	9	11	CAMPANIA
456	Meyer-FI	M	FOXG1	2	4	LAZIO
457	Meyer-FI	F	FOXG1	2	3	SICILIA
458	Meyer-FI	F	FOXG1	2	2	SICILIA
459	Meyer-FI	M	FOXG1	9	19	LOMBARDIA
460	Meyer-FI	F	FOXG1	6	13	PUGLIE
461	Meyer-FI	M	FOXG1	3	11	TOSCANA
462	Meyer-FI	F	GABRA1	12	17	CAMPANIA
463	Meyer-FI	F	GABRA1	22	25	.
464	Meyer-FI	F	GABRA1	11	14	CALABRIA
465	Meyer-FI	F	GABRA1	14	16	.
466	Meyer-FI	F	GABRA1	9	10	SICILIA
467	Meyer-FI	M	GABRA1	15	16	PIEMONTE

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468	Meyer-FI	F	GABRA1	1	1	PIEMONTE
469	Meyer-FI	M	GABRA1	1	1	LAZIO
470	Meyer-FI	M	GABRA1	1	1	LOMBARDIA
471	Meyer-FI	F	GABRB1	5	9	ABRUZZI
472	Meyer-FI	F	GABRB2	4	8	PIEMONTE
473	Meyer-FI	F	GABRB2	12	14	PUGLIE
474	Meyer-FI	F	GABRB2	16	16	LOMBARDIA
475	Meyer-FI	F	GABRB3	0	7	VENETO
476	Meyer-FI	M	GABRB3	1	4	TOSCANA
477	Meyer-FI	M	GABRB3	15	18	MARCHE
478	Meyer-FI	M	GABRB3	2	5	PUGLIE
479	Meyer-FI	F	GABRB3	3	3	LAZIO
480	Meyer-FI	F	GABRB3	0	0	VENETO
481	Meyer-FI	M	GABRB3	16	16	VENETO
482	Meyer-FI	F	GABRB3	1	1	UMBRIA
483	Meyer-FI	F	GABRG2	7	11	TOSCANA
484	Meyer-FI	M	GABRG2	30	33	VENETO
485	Meyer-FI	F	GABRG2	1	3	EMILIA ROMAGNA
486	Meyer-FI	F	GABRG2	2	4	TOSCANA
487	Meyer-FI	M	GABRG2	8	10	PUGLIE
488	Meyer-FI	F	GABRG2	7	8	EMILIA ROMAGNA
489	Meyer-FI	F	GABRG2	12	15	SARDEGNA
490	Meyer-FI	M	GABRG2	5	12	TOSCANA
491	Meyer-FI	F	GABRG2	9	13	VENETO
492	Meyer-FI	F	GABRG2	9	11	SICILIA
493	Meyer-FI	M	GABRG2	14	16	LAZIO
494	Meyer-FI	F	GABRG2	4	5	LAZIO
495	Meyer-FI	F	GABRG2	12	12	MARCHE
496	Meyer-FI	F	GABRG2	6	6	PIEMONTE
497	Meyer-FI	M	GABRG2	5	5	LOMBARDIA
498	Meyer-FI	F	GABRG2	9	9	LOMBARDIA
499	Meyer-FI	F	GABRG2	9	9	TOSCANA
500	Meyer-FI	F	GABRG2	2	2	UMBRIA
501	Meyer-FI	F	GNAO1	16	22	PIEMONTE
502	Meyer-FI	F	GNAO1	12	17	PUGLIE
503	Meyer-FI	M	GNAO1	14	17	TOSCANA
504	Meyer-FI	M	GNAO1	3	4	ABRUZZI
505	Meyer-FI	F	GNAO1	13	14	TOSCANA
506	Meyer-FI	F	GNAO1	3	3	SICILIA
507	Meyer-FI	F	GNAO1	14	14	LOMBARDIA
508	Meyer-FI	M	GNAO1	13	13	EMILIA ROMAGNA
509	Meyer-FI	F	GNAO1	2	2	TOSCANA
510	Meyer-FI	M	STXBP1	1	9	ABRUZZI
511	Meyer-FI	F	GRIN1	6	10	SICILIA
512	Meyer-FI	M	GRIN2A	22	29	TOSCANA
513	Meyer-FI	F	GRIN2A	16	22	TOSCANA
514	Meyer-FI	M	GRIN2A	9	15	PUGLIE
515	Meyer-FI	M	GRIN2A	7	12	UMBRIA
516	Meyer-FI	M	GRIN2A	8	11	LAZIO
517	Meyer-FI	F	GRIN2A	16	18	CALABRIA
518	Meyer-FI	M	GRIN2A	10	12	CAMPANIA
519	Meyer-FI	M	GRIN2A	21	24	LOMBARDIA

520	Meyer-FI	M	GRIN2A	14	18	TRENTINO A. A.
521	Meyer-FI	F	GRIN2A	9	13	TOSCANA
522	Meyer-FI	F	GRIN2A	12	18	SICILIA
523	Meyer-FI	M	GRIN2A	9	10	TOSCANA
524	Meyer-FI	M	GRIN2A	8	8	TOSCANA
525	Meyer-FI	F	GRIN2A	12	13	.
526	Meyer-FI	M	GRIN2A	6	7	TOSCANA
527	Meyer-FI	F	GRIN2A	8	8	TOSCANA
528	Meyer-FI	M	GRIN2A	43	43	LAZIO
529	Meyer-FI	M	GRIN2B	4	8	LAZIO
530	Meyer-FI	M	GRIN2B	1	4	CAMPANIA
531	Meyer-FI	M	GRIN2B	1	5	PIEMONTE
532	Meyer-FI	F	GRIN2B	7	10	EMILIA ROMAGNA
533	Meyer-FI	F	GRIN2B	2	4	CAMPANIA
534	Meyer-FI	M	GRIN2B	6	12	TOSCANA
535	Meyer-FI	M	GRIN2B	8	12	TOSCANA
536	Meyer-FI	M	GRIN2B	13	13	VENETO
537	Meyer-FI	F	HCN1	22	26	UMBRIA
538	Meyer-FI	M	HCN1	14	20	SICILIA
539	Meyer-FI	F	HCN1	5	11	TOSCANA
540	Meyer-FI	F	GRIN1	4	8	SICILIA
541	Meyer-FI	M	HCN1	7	10	VENETO
542	Meyer-FI	F	KCNA2	3	10	TOSCANA
543	Meyer-FI	F	KCNA2	6	11	.
544	Meyer-FI	M	KCNA2	14	19	MARCHE
545	Meyer-FI	F	KCNA2	18	22	LAZIO
546	Meyer-FI	M	KCNA2	2	2	VENETO
547	Meyer-FI	F	KCNB1	11	17	TRENTINO A. A.
548	Meyer-FI	F	KCNB1	23	28	SICILIA
549	Meyer-FI	F	KCNB1	7	13	UMBRIA
550	Meyer-FI	M	KCNB1	6	12	LIGURIA
551	Meyer-FI	F	KCNB1	8	13	EMILIA ROMAGNA
552	Meyer-FI	M	KCNB1	17	22	PUGLIE
553	Meyer-FI	M	KCNB1	2	6	LOMBARDIA
554	Meyer-FI	M	KCNB1	2	6	CALABRIA
555	Meyer-FI	M	KCNB1	9	12	LOMBARDIA
556	Meyer-FI	F	KCNB1	4	4	MARCHE
557	Meyer-FI	F	KCNQ2	6	14	EMILIA ROMAGNA
558	Meyer-FI	F	KCNQ2	1	9	LOMBARDIA
559	Meyer-FI	M	KCNQ2	1	9	PIEMONTE
560	Meyer-FI	F	KCNQ2	8	16	CAMPANIA
561	Meyer-FI	F	KCNQ2	1	9	TOSCANA
562	Meyer-FI	F	KCNQ2	19	26	EMILIA ROMAGNA
563	Meyer-FI	F	KCNQ2	1	8	CAMPANIA
564	Meyer-FI	F	KCNQ2	3	8	LOMBARDIA
565	Meyer-FI	F	KCNQ2	9	15	EMILIA ROMAGNA
566	Meyer-FI	M	KCNQ2	0	4	EMILIA ROMAGNA
567	Meyer-FI	F	KCNQ2	3	7	LIGURIA
568	Meyer-FI	F	KCNQ2	2	11	PIEMONTE
569	Meyer-FI	M	KCNQ2	1	2	TOSCANA
570	Meyer-FI	F	KCNQ2	2	3	MARCHE
571	Meyer-FI	M	KCNQ2	1	2	ABRUZZI

572	Meyer-FI	M	KCNQ2	1	3	MARCHE
573	Meyer-FI	M	KCNQ2	14	16	CAMPANIA
574	Meyer-FI	M	KCNQ2	16	18	PUGLIE
575	Meyer-FI	F	KCNQ2	1	4	TOSCANA
576	Meyer-FI	M	KCNQ2	2	5	VENETO
577	Meyer-FI	F	KCNQ2	0	4	TOSCANA
578	Meyer-FI	M	KCNQ2	5	10	TOSCANA
579	Meyer-FI	M	KCNQ2	6	6	EMILIA ROMAGNA
580	Meyer-FI	M	KCNQ2	10	10	MARCHE
581	Meyer-FI	F	KCNQ2	12	13	.
582	Meyer-FI	F	KCNQ2	1	1	SICILIA
583	Meyer-FI	F	KCNQ2	1	1	TOSCANA
584	Meyer-FI	F	KCNQ2	1	2	PIEMONTE
585	Meyer-FI	F	KCNQ2	0	3	LOMBARDIA
586	Meyer-FI	F	KCNT1	1	8	CAMPANIA
587	Meyer-FI	M	KCNT1	5	11	LOMBARDIA
588	Meyer-FI	F	KCNT1	6	12	SARDEGNA
589	Meyer-FI	F	KCNT1	7	13	LAZIO
590	Meyer-FI	F	KCNT1	3	9	.
591	Meyer-FI	F	KCNT1	14	20	TOSCANA
592	Meyer-FI	M	KCNT1	27	28	TOSCANA
593	Meyer-FI	M	KCNT1	8	12	PUGLIE
594	Meyer-FI	M	KCNT1	0	4	.
595	Meyer-FI	M	KCNT1	1	4	CAMPANIA
596	Meyer-FI	F	KCNT1	38	41	LOMBARDIA
597	Meyer-FI	M	KCNT1	6	8	LOMBARDIA
598	Meyer-FI	M	KCNT1	23	30	LOMBARDIA
599	Meyer-FI	M	KCNT1	24	25	ABRUZZI
600	Meyer-FI	F	KCNT1	11	12	ABRUZZI
601	Meyer-FI	M	KCNT1	26	27	TOSCANA
602	Meyer-FI	F	MECP2	4	14	LOMBARDIA
603	Meyer-FI	F	MECP2	2	12	PUGLIE
604	Meyer-FI	F	MECP2	3	13	SICILIA
605	Meyer-FI	F	MECP2	0	10	TOSCANA
606	Meyer-FI	F	MECP2	8	16	.
607	Meyer-FI	F	MECP2	2	10	LAZIO
608	Meyer-FI	F	MECP2	4	11	EMILIA ROMAGNA
609	Meyer-FI	F	MECP2	4	10	PUGLIE
610	Meyer-FI	F	MECP2	2	8	TOSCANA
611	Meyer-FI	F	MECP2	3	10	ABRUZZI
612	Meyer-FI	F	MECP2	5	12	EMILIA ROMAGNA
613	Meyer-FI	F	MECP2	2	10	TOSCANA
614	Meyer-FI	F	MECP2	6	13	PIEMONTE
615	Meyer-FI	F	MECP2	21	27	CAMPANIA
616	Meyer-FI	F	MECP2	19	26	TOSCANA
617	Meyer-FI	F	MECP2	6	12	CALABRIA
618	Meyer-FI	F	MECP2	14	15	UMBRIA
619	Meyer-FI	M	MECP2	8	12	MARCHE
620	Meyer-FI	M	MECP2	10	15	LIGURIA
621	Meyer-FI	F	MECP2	3	8	TRENTINO A. A.
622	Meyer-FI	F	MECP2	2	6	.
623	Meyer-FI	F	MECP2	3	7	LAZIO

624	Meyer-FI	M	MECP2	5	9	CAMPANIA
625	Meyer-FI	F	MECP2	2	6	PUGLIE
626	Meyer-FI	F	MECP2	4	8	LOMBARDIA
627	Meyer-FI	F	MECP2	4	7	VENETO
628	Meyer-FI	F	MECP2	8	11	TOSCANA
629	Meyer-FI	M	MECP2	4	7	SICILIA
630	Meyer-FI	F	MECP2	2	5	LAZIO
631	Meyer-FI	M	MECP2	23	26	.
632	Meyer-FI	M	MECP2	30	32	TOSCANA
633	Meyer-FI	F	MECP2	11	13	VENETO
634	Meyer-FI	F	MECP2	12	13	CAMPANIA
635	Meyer-FI	F	MECP2	3	4	VENETO
636	Meyer-FI	F	MECP2	5	5	TOSCANA
637	Meyer-FI	F	MECP2	3	3	CAMPANIA
638	Meyer-FI	F	MECP2	5	5	FRIULI V. G.
639	Meyer-FI	F	MECP2	2	2	TOSCANA
640	Meyer-FI	F	MECP2	1	1	UMBRIA
641	Meyer-FI	M	MEF2C	2	5	LAZIO
642	Meyer-FI	F	NEXMIF	12	16	VENETO
643	Meyer-FI	F	NEXMIF	10	14	VENETO
644	Meyer-FI	F	NEXMIF	13	17	TOSCANA
645	Meyer-FI	F	NEXMIF	15	15	CAMPANIA
646	Meyer-FI	F	NEXMIF	20	20	TOSCANA
647	Meyer-FI	F	PCDH19	5	14	PUGLIE
648	Meyer-FI	F	PCDH19	13	22	TOSCANA
649	Meyer-FI	M	PCDH19	2	7	TOSCANA
650	Meyer-FI	F	PCDH19	4	8	TOSCANA
651	Meyer-FI	F	PCDH19	1	4	TOSCANA
652	Meyer-FI	F	PCDH19	13	19	EMILIA ROMAGNA
653	Meyer-FI	F	PCDH19	22	25	LOMBARDIA
654	Meyer-FI	F	PCDH19	8	11	SICILIA
655	Meyer-FI	F	PCDH19	1	2	LOMBARDIA
656	Meyer-FI	F	PCDH19	2	3	TOSCANA
657	Meyer-FI	F	PCDH19	8	9	CALABRIA
658	Meyer-FI	F	PCDH19	4	5	SICILIA
659	Meyer-FI	F	PCDH19	13	15	.
660	Meyer-FI	F	PCDH19	3	5	CAMPANIA
661	Meyer-FI	M	PIGA	12	18	TOSCANA
662	Meyer-FI	M	PIGA	8	8	TOSCANA
663	Meyer-FI	M	PIGA	2	4	BASILICATA
664	Meyer-FI	M	PIGA	4	5	.
665	Meyer-FI	M	PIGA	1	6	TOSCANA
666	Meyer-FI	M	RNF13	7	8	PIEMONTE
667	Meyer-FI	F	SCN1A	11	17	PUGLIE
668	Meyer-FI	M	SCN1A	6	12	.
669	Meyer-FI	F	SCN1A	1	7	TOSCANA
670	Meyer-FI	F	SCN1A	15	21	.
671	Meyer-FI	F	SCN1A	34	40	MARCHE
672	Meyer-FI	F	SCN1A	5	10	.
673	Meyer-FI	M	SCN1A	1	6	TRENTINO A. A.
674	Meyer-FI	F	SCN1A	1	6	CALABRIA
675	Meyer-FI	F	SCN1A	1	6	TOSCANA

676	Meyer-FI	F	SCN1A	23	27	.
677	Meyer-FI	F	SCN1A	21	25	EMILIA ROMAGNA
678	Meyer-FI	M	SCN1A	4	8	EMILIA ROMAGNA
679	Meyer-FI	F	SCN1A	1	5	TOSCANA
680	Meyer-FI	M	SCN1A	1	5	TOSCANA
681	Meyer-FI	M	SCN1A	3	7	TOSCANA
682	Meyer-FI	M	SCN1A	1	7	TOSCANA
683	Meyer-FI	M	SCN1A	1	5	UMBRIA
684	Meyer-FI	M	SCN1A	7	11	TRENTINO A. A.
685	Meyer-FI	F	SCN1A	2	5	TRENTINO A. A.
686	Meyer-FI	M	SCN1A	7	9	LOMBARDIA
687	Meyer-FI	F	SCN1A	31	34	EMILIA ROMAGNA
688	Meyer-FI	M	SCN1A	4	7	CAMPANIA
689	Meyer-FI	M	SCN1A	17	20	PUGLIE
690	Meyer-FI	M	SCN1A	47	50	ABRUZZI
691	Meyer-FI	M	SCN1A	1	4	MARCHE
692	Meyer-FI	M	SCN1A	2	4	CAMPANIA
693	Meyer-FI	M	BRAT1	3	6	SARDEGNA
694	Meyer-FI	F	SCN1A	0	2	PIEMONTE
695	Meyer-FI	F	CDKL5	1	5	LAZIO
696	Meyer-FI	F	SCN1A	0	2	PIEMONTE
697	Meyer-FI	F	SCN1A	21	22	PUGLIE
698	Meyer-FI	M	SCN1A	1	2	UMBRIA
699	Meyer-FI	M	SCN1A	1	2	TOSCANA
700	Meyer-FI	F	SCN1A	1	2	SICILIA
701	Meyer-FI	M	SCN1A	2	3	SICILIA
702	Meyer-FI	F	SCN1A	34	35	PIEMONTE
703	Meyer-FI	F	SCN1A	1	2	EMILIA ROMAGNA
704	Meyer-FI	F	SCN1A	10	10	.
705	Meyer-FI	M	SCN1A	2	2	PIEMONTE
706	Meyer-FI	M	SCN1A	1	1	UMBRIA
707	Meyer-FI	M	SCN1A	3	3	EMILIA ROMAGNA
708	Meyer-FI	F	SCN1A	0	0	EMILIA ROMAGNA
709	Meyer-FI	M	SCN1A	17	22	LOMBARDIA
710	Meyer-FI	F	SCN1A	8	16	LIGURIA
711	Meyer-FI	F	SCN1A	32	37	TOSCANA
712	Meyer-FI	M	SCN1A	3	10	EMILIA ROMAGNA
713	Meyer-FI	M	SCN1A	2	9	PUGLIE
714	Meyer-FI	F	SCN1A	13	18	PIEMONTE
715	Meyer-FI	F	SCN1A	24	29	PUGLIE
716	Meyer-FI	M	SCN1A	1	6	TOSCANA
717	Meyer-FI	F	SCN1A	4	7	PUGLIE
718	Meyer-FI	M	SCN1A	5	8	TOSCANA
719	Meyer-FI	M	SCN1A	21	23	EMILIA ROMAGNA
720	Meyer-FI	M	SCN1A	10	12	CALABRIA
721	Meyer-FI	F	SCN1A	14	16	VENETO
722	Meyer-FI	M	SCN2A	5	12	.
723	Meyer-FI	M	SCN2A	12	20	LOMBARDIA
724	Meyer-FI	M	SCN2A	2	9	.
725	Meyer-FI	M	SCN2A	3	10	EMILIA ROMAGNA
726	Meyer-FI	M	SCN2A	1	8	UMBRIA
727	Meyer-FI	M	SCN2A	3	10	LOMBARDIA

728	Meyer-FI	M	SCN2A	4	12	EMILIA ROMAGNA
729	Meyer-FI	F	SCN2A	1	7	LAZIO
730	Meyer-FI	F	SCN2A	8	14	LAZIO
731	Meyer-FI	F	SCN2A	1	11	UMBRIA
732	Meyer-FI	F	SCN2A	4	11	TRENTINO A. A.
733	Meyer-FI	M	SCN2A	4	10	CALABRIA
734	Meyer-FI	F	SCN2A	5	10	FRIULI V. G.
735	Meyer-FI	M	SCN2A	7	12	TOSCANA
736	Meyer-FI	F	SCN2A	12	17	LOMBARDIA
737	Meyer-FI	F	SCN2A	5	10	TOSCANA
738	Meyer-FI	M	SCN2A	14	19	LOMBARDIA
739	Meyer-FI	M	SCN2A	2	6	TOSCANA
740	Meyer-FI	F	SCN2A	1	5	SICILIA
741	Meyer-FI	F	SCN2A	15	18	LOMBARDIA
742	Meyer-FI	F	SCN2A	2	5	EMILIA ROMAGNA
743	Meyer-FI	F	SCN2A	17	20	LAZIO
744	Meyer-FI	F	SCN2A	12	15	LOMBARDIA
745	Meyer-FI	M	SCN2A	14	16	VENETO
746	Meyer-FI	M	SCN2A	2	4	EMILIA ROMAGNA
747	Meyer-FI	M	SCN2A	0	2	TOSCANA
748	Meyer-FI	M	SCN2A	4	6	LAZIO
749	Meyer-FI	F	SCN2A	6	7	LAZIO
750	Meyer-FI	M	SCN2A	19	20	ABRUZZI
751	Meyer-FI	F	SCN2A	16	17	CAMPANIA
752	Meyer-FI	F	SCN2A	0	1	LOMBARDIA
753	Meyer-FI	F	SCN2A	2	2	MARCHE
754	Meyer-FI	M	SCN2A	1	1	MOLISE
755	Meyer-FI	M	SCN2A	0	0	EMILIA ROMAGNA
756	Meyer-FI	F	SCN8A	2	9	EMILIA ROMAGNA
757	Meyer-FI	F	SCN8A	5	14	LAZIO
758	Meyer-FI	M	SCN8A	1	8	TOSCANA
759	Meyer-FI	F	SCN8A	12	18	LOMBARDIA
760	Meyer-FI	M	SCN8A	8	14	.
761	Meyer-FI	F	SCN8A	9	15	LOMBARDIA
762	Meyer-FI	M	SCN8A	2	7	LOMBARDIA
763	Meyer-FI	M	SCN8A	24	29	LOMBARDIA
764	Meyer-FI	M	SCN8A	13	18	MARCHE
765	Meyer-FI	F	SCN8A	4	10	LOMBARDIA
766	Meyer-FI	M	SCN8A	11	16	LAZIO
767	Meyer-FI	F	SCN8A	30	34	LOMBARDIA
768	Meyer-FI	F	SCN8A	5	9	UMBRIA
769	Meyer-FI	M	SCN8A	2	3	EMILIA ROMAGNA
770	Meyer-FI	F	SCN8A	0	2	TOSCANA
771	Meyer-FI	F	SCN8A	2	3	SICILIA
772	Meyer-FI	F	SCN8A	12	14	LAZIO
773	Meyer-FI	F	SCN8A	1	3	TOSCANA
774	Meyer-FI	F	SCN8A	2	5	LOMBARDIA
775	Meyer-FI	F	SCN8A	9	13	TOSCANA
776	Meyer-FI	M	SCN8A	8	11	.
777	Meyer-FI	F	SCN8A	11	14	CAMPANIA
778	Meyer-FI	F	SCN8A	18	18	ABRUZZI
779	Meyer-FI	M	SLC2A1	8	14	CALABRIA

780	Meyer-FI	M	SLC2A1	11	14	PUGLIE
781	Meyer-FI	F	SLC2A1	11	14	CAMPANIA
782	Meyer-FI	M	SLC2A1	12	16	SICILIA
783	Meyer-FI	F	SLC2A1	13	16	TRENTINO A. A.
784	Meyer-FI	M	SLC2A1	20	25	BASILICATA
785	Meyer-FI	F	SLC2A1	21	23	.
786	Meyer-FI	M	SLC2A1	16	26	EMILIA ROMAGNA
787	Meyer-FI	F	SLC2A1	18	27	EMILIA ROMAGNA
788	Meyer-FI	M	SLC2A1	4	12	PUGLIE
789	Meyer-FI	F	SLC2A1	5	11	CAMPANIA
790	Meyer-FI	F	SLC2A1	8	11	VENETO
791	Meyer-FI	F	SLC2A1	7	14	TOSCANA
792	Meyer-FI	F	SLC2A1	16	22	TOSCANA
793	Meyer-FI	F	SLC2A1	1	2	TOSCANA
794	Meyer-FI	F	SLC35A2	7	10	LOMBARDIA
795	Meyer-FI	M	SLC35A2	4	5	TRENTINO A. A.
796	Meyer-FI	M	SLC35A2	7	8	LAZIO
797	Meyer-FI	F	SLC6A1	13	18	TOSCANA
798	Meyer-FI	M	SLC6A1	16	21	PUGLIE
799	Meyer-FI	F	SLC6A1	8	13	PUGLIE
800	Meyer-FI	M	SLC6A1	5	9	LOMBARDIA
801	Meyer-FI	F	SLC6A1	10	13	LOMBARDIA
802	Meyer-FI	M	SLC6A1	14	18	TOSCANA
803	Meyer-FI	M	SLC6A1	13	16	TRENTINO A. A.
804	Meyer-FI	F	SLC6A1	7	9	CAMPANIA
805	Meyer-FI	M	SLC6A1	8	10	EMILIA ROMAGNA
806	Meyer-FI	M	SLC6A1	3	4	TOSCANA
807	Meyer-FI	F	SLC6A1	9	13	LOMBARDIA
808	Meyer-FI	M	SLC6A1	15	21	TOSCANA
809	Meyer-FI	M	SLC6A1	3	4	TOSCANA
810	Meyer-FI	F	GRIN1	0	3	EMILIA ROMAGNA
811	Meyer-FI	M	SLC6A1	9	9	LAZIO
812	Meyer-FI	F	SLC6A1	5	5	TOSCANA
813	Meyer-FI	M	SLC6A1	24	24	VENETO
814	Meyer-FI	M	SLC9A6	17	22	VENETO
815	Meyer-FI	M	SLC9A6	3	4	MARCHE
816	Meyer-FI	F	SLC9A6	5	10	PUGLIE
817	Meyer-FI	F	SMC1A	18	21	TOSCANA
818	Meyer-FI	F	SMC1A	15	18	TRENTINO A. A.
819	Meyer-FI	F	SMC1A	2	4	TOSCANA
820	Meyer-FI	F	SMC1A	6	6	.
821	Meyer-FI	M	SPTAN1	4	10	PUGLIE
822	Meyer-FI	M	SPTAN1	4	8	PUGLIE
823	Meyer-FI	M	SPTAN1	4	5	PUGLIE
824	Meyer-FI	F	SPTAN1	8	9	LOMBARDIA
825	Meyer-FI	M	STXBP1	1	6	EMILIA ROMAGNA
826	Meyer-FI	M	STXBP1	14	17	TOSCANA
827	Meyer-FI	M	STXBP1	7	11	PUGLIE
828	Meyer-FI	F	STXBP1	6	10	LAZIO
829	Meyer-FI	M	STXBP1	2	5	SICILIA
830	Meyer-FI	F	STXBP1	10	12	EMILIA ROMAGNA
831	Meyer-FI	F	STXBP1	9	10	LOMBARDIA

832	Meyer-FI	M	STXBP1	5	6	FRIULI V. G.
833	Meyer-FI	F	STXBP1	1	2	TOSCANA
834	Meyer-FI	F	STXBP1	2	9	PIEMONTE
835	Meyer-FI	F	STXBP1	2	9	TOSCANA
836	Meyer-FI	F	STXBP1	6	14	EMILIA ROMAGNA
837	Meyer-FI	F	STXBP1	2	11	.
838	Meyer-FI	M	STXBP1	1	10	TOSCANA
839	Meyer-FI	F	STXBP1	1	9	EMILIA ROMAGNA
840	Meyer-FI	F	STXBP1	10	19	TOSCANA
841	Meyer-FI	F	STXBP1	4	12	TRENTINO A. A.
842	Meyer-FI	M	STXBP1	10	15	LAZIO
843	Meyer-FI	M	STXBP1	9	12	.
844	Meyer-FI	M	STXBP1	3	9	PIEMONTE
845	Meyer-FI	F	SYNGAP1	20	25	VENETO
846	Meyer-FI	F	SYNGAP1	14	20	TOSCANA
847	Meyer-FI	M	SYNGAP1	10	16	TOSCANA
848	Meyer-FI	M	SYNGAP1	8	9	CALABRIA
849	Meyer-FI	M	SYNGAP1	4	9	UMBRIA
850	Meyer-FI	F	SYNGAP1	10	16	.
851	Meyer-FI	M	SYNGAP1	6	11	SICILIA
852	Meyer-FI	M	SYNGAP1	14	19	TOSCANA
853	Meyer-FI	M	SYNGAP1	5	10	EMILIA ROMAGNA
854	Meyer-FI	M	SYNGAP1	15	19	UMBRIA
855	Meyer-FI	M	SYNGAP1	12	15	TOSCANA
856	Meyer-FI	M	SYNGAP1	3	6	CAMPANIA
857	Meyer-FI	M	SYNGAP1	11	13	LOMBARDIA
858	Meyer-FI	F	SYNGAP1	3	4	TOSCANA
859	Meyer-FI	M	SYNGAP1	11	11	LAZIO
860	Meyer-FI	F	SYNGAP1	11	11	EMILIA ROMAGNA
861	Meyer-FI	F	TBC1D24	10	13	PIEMONTE
862	Meyer-FI	F	TBC1D24	5	9	LAZIO
863	Meyer-FI	F	TBC1D24	5	10	EMILIA ROMAGNA
864	Meyer-FI	M	TBC1D24	12	17	TOSCANA
865	Meyer-FI	M	YWHAG	15	17	MARCHE
866	Meyer-FI	M	YWHAG	6	8	TOSCANA
867	Meyer-FI	F	KCNQ2	1	2	LOMBARDIA
868	Meyer-FI	M	KCNT1	0	2	CALABRIA
869	Meyer-FI	F	ARHGEF9	5	7	CALABRIA
870	Meyer-FI	M	ARHGEF9	7	11	EMILIA ROMAGNA
871	Meyer-FI	M	ARV1	3	4	LOMBARDIA
872	Meyer-FI	F	CAD	3	4	TOSCANA
873	Meyer-FI	F	CLTC	4	9	VENETO
874	Meyer-FI	F	CLTC	0	0	TRENTINO A. A.
875	Meyer-FI	M	CSNK2B	17	19	TOSCANA
876	Meyer-FI	M	CSNK2B	3	4	TOSCANA
877	Meyer-FI	F	CSNK2B	13	15	TOSCANA
878	Meyer-FI	M	CSNK2B	2	4	LAZIO
879	Meyer-FI	M	CSNK2B	2	3	TOSCANA
880	Meyer-FI	F	CSNK2B	7	8	CALABRIA
881	Meyer-FI	F	CSNK2B	2	3	TOSCANA
882	Meyer-FI	M	CSNK2B	11	11	TOSCANA
883	Meyer-FI	F	CSNK2B	2	2	SICILIA

884	Meyer-FI	M	CYFIP2	2	4	TOSCANA
885	Meyer-FI	F	DHDDS	16	20	TOSCANA
886	Meyer-FI	F	GRIN2B	23	28	EMILIA ROMAGNA
887	Meyer-FI	F	GRIN1	1	1	SARDEGNA
888	Meyer-FI	F	HNRNPU	26	29	CAMPANIA
889	Meyer-FI	F	HNRNPU	24	28	LOMBARDIA
890	Meyer-FI	F	KMT2E	8	11	EMILIA ROMAGNA
891	Meyer-FI	M	KMT2E	23	23	BASILICATA
892	Meyer-FI	M	KMT2E	5	5	PIEMONTE
893	Meyer-FI	M	KMT2E	16	18	EMILIA ROMAGNA
894	Meyer-FI	F	KMT2E	10	10	TOSCANA
895	Meyer-FI	F	KMT2E	3	3	LAZIO
896	Meyer-FI	M	MBD5	31	33	TOSCANA
897	Meyer-FI	F	PACS2	6	10	TOSCANA
898	Meyer-FI	F	PACS2	5	6	PIEMONTE
899	Meyer-FI	F	PARS2	0	0	TOSCANA
900	Meyer-FI	F	PNKP	12	15	TOSCANA
901	Meyer-FI	F	PNKP	18	18	LAZIO
902	Meyer-FI	M	PNKP	6	6	MARCHE
903	Meyer-FI	M	PNKP	22	26	LOMBARDIA
904	Meyer-FI	F	PNKP	16	18	LIGURIA
905	Meyer-FI	M	PNKP	8	10	ABRUZZI
906	Meyer-FI	F	PNKP	29	31	EMILIA ROMAGNA
907	Meyer-FI	M	PNKP	1	3	TRENTINO A. A.
908	Meyer-FI	M	PNPO	7	15	PIEMONTE
909	Meyer-FI	F	PCDH19	18	26	LOMBARDIA
910	Meyer-FI	M	PNPO	0	5	EMILIA ROMAGNA
911	Meyer-FI	F	POLG	0	1	TOSCANA
912	Meyer-FI	F	POLG	17	20	CAMPANIA
913	Meyer-FI	M	POLG	1	2	TRENTINO A. A.
914	Meyer-FI	F	PURA	9	15	CAMPANIA
915	Meyer-FI	M	PURA	10	15	.
916	Meyer-FI	F	PURA	2	6	.
917	Meyer-FI	F	PURA	17	21	LOMBARDIA
918	Meyer-FI	F	PURA	18	22	LOMBARDIA
919	Meyer-FI	M	PURA	14	16	TOSCANA
920	Meyer-FI	M	PURA	6	6	PIEMONTE
921	Meyer-FI	M	SCN1B	9	9	UMBRIA
922	Meyer-FI	F	SCN1B	10	11	SICILIA
923	Meyer-FI	M	SCN1B	5	9	LAZIO
924	Meyer-FI	M	SCN1B	11	13	TOSCANA
925	Meyer-FI	M	SCN1B	14	17	LAZIO
926	Meyer-FI	F	SCN1B	1	1	EMILIA ROMAGNA
927	Meyer-FI	F	SCN1B	13	19	TOSCANA
928	Meyer-FI	M	SCN3A	2	4	EMILIA ROMAGNA
929	Meyer-FI	F	SCN3A	1	5	TOSCANA
930	Meyer-FI	M	SLC1A2	5	5	TOSCANA
931	Meyer-FI	M	SLC13A5	1	5	CAMPANIA
932	Meyer-FI	F	SLC13A5	10	14	LAZIO
933	Meyer-FI	F	ST3GAL5	5	9	PUGLIE
934	Meyer-FI	M	SZT2	18	23	TRENTINO A. A.
935	Meyer-FI	F	SZT2	4	10	.

936	Meyer-FI	F	WWOX	1	5	TOSCANA
937	Meyer-FI	F	WWOX	25	26	BASILICATA
938	Mondino-Pavia	M	BRAT1	10	10	CAMPANIA
939	Mondino-Pavia	F	MECP2	3	4	ABRUZZI
940	Mondino-Pavia	F	SPTAN1	0	1	EMILIA ROMAGNA
941	Mondino-Pavia	F	SCN1A	1	1	TRENTINO A. A.
942	Mondino-Pavia	F	SZT2	1	1	LOMBARDIA
943	Mondino-Pavia	F	ALG13	8	8	.
944	Mondino-Pavia	M	ATP6V1A	9	10	LOMBARDIA
945	Mondino-Pavia	M	CACNA1A	11	11	LOMBARDIA
946	Mondino-Pavia	F	CACNA1A	15	15	PIEMONTE
947	Mondino-Pavia	F	CASK	13	15	PUGLIE
948	Mondino-Pavia	M	CASK	2	5	LOMBARDIA
949	Mondino-Pavia	F	CDKL5	0	0	LOMBARDIA
950	Mondino-Pavia	M	CDKL5	1	6	LOMBARDIA
951	Mondino-Pavia	M	CDKL5	1	5	PIEMONTE
952	Mondino-Pavia	M	CHD2	30	33	PIEMONTE
953	Mondino-Pavia	M	CHD2	19	20	LOMBARDIA
954	Mondino-Pavia	F	CHD2	20	20	LOMBARDIA
955	Mondino-Pavia	M	GABRB3	3	7	LOMBARDIA
956	Mondino-Pavia	F	GABRG2	0	3	LOMBARDIA
957	Mondino-Pavia	F	GABRG2	3	3	LOMBARDIA
958	Mondino-Pavia	F	GNAO1	19	22	PIEMONTE
959	Mondino-Pavia	M	GRIN2A	9	10	PIEMONTE
960	Mondino-Pavia	M	GRIN2B	17	19	LOMBARDIA
961	Mondino-Pavia	M	GRIN2B	13	13	CALABRIA
962	Mondino-Pavia	F	KCNA2	3	4	ABRUZZI
963	Mondino-Pavia	M	KCNA2	20	20	TRENTINO A. A.
964	Mondino-Pavia	M	KCNQ2	6	8	.
965	Mondino-Pavia	M	KCNQ2	10	14	LOMBARDIA
966	Mondino-Pavia	F	KCNT1	15	19	LOMBARDIA
967	Mondino-Pavia	M	KCNT1	37	39	PIEMONTE
968	Mondino-Pavia	F	KCNT1	7	11	EMILIA ROMAGNA
969	Mondino-Pavia	F	MECP2	5	9	LOMBARDIA
970	Mondino-Pavia	F	MECP2	4	6	LOMBARDIA
971	Mondino-Pavia	F	MECP2	2	2	ABRUZZI
972	Mondino-Pavia	F	MECP2	14	18	LOMBARDIA
973	Mondino-Pavia	F	PCDH19	4	4	TRENTINO A. A.
974	Mondino-Pavia	F	PCDH19	31	31	TRENTINO A. A.
975	Mondino-Pavia	F	PURA	13	15	.
976	Mondino-Pavia	F	PURA	3	3	LOMBARDIA
977	Mondino-Pavia	F	SCN1A	1	1	TRENTINO A. A.
978	Mondino-Pavia	M	SCN1A	29	29	CALABRIA
979	Mondino-Pavia	M	SCN1A	5	9	CAMPANIA
980	Mondino-Pavia	F	SCN8A	45	46	LOMBARDIA
981	Mondino-Pavia	F	SCN8A	16	17	LOMBARDIA
982	Mondino-Pavia	F	SCN8A	5	9	UMBRIA
983	Mondino-Pavia	F	SLC2A1	29	31	.
984	Mondino-Pavia	F	SLC2A1	11	14	LOMBARDIA
985	Mondino-Pavia	M	SLC6A1	20	21	TRENTINO A. A.
986	Mondino-Pavia	M	SLC6A1	21	21	LOMBARDIA
987	Mondino-Pavia	F	SLC6A1	6	8	LOMBARDIA

988	Mondino-Pavia	F	SLC6A1	3	3	PIEMONTE
989	Mondino-Pavia	M	SLC9A6	8	9	VENETO
990	Mondino-Pavia	M	SPTAN1	16	19	LOMBARDIA
991	Mondino-Pavia	F	SPTAN1	13	16	LOMBARDIA
992	Mondino-Pavia	M	STXBP1	28	29	EMILIA ROMAGNA
993	Mondino-Pavia	F	STXBP1	17	17	LOMBARDIA
994	Mondino-Pavia	F	SYNGAP1	3	3	LOMBARDIA
995	Mondino-Pavia	M	SYNGAP1	21	21	.
996	Mondino-Pavia	M	ATP1A2	12	14	PUGLIE
997	Mondino-Pavia	M	CACNA1A	43	45	.
998	Mondino-Pavia	F	CACNA1A	19	20	.
999	Mondino-Pavia	F	CACNA1A	52	53	.
1000	Mondino-Pavia	M	CACNA1A	34	35	.
1001	Mondino-Pavia	M	CACNA1A	58	59	LOMBARDIA
1002	Mondino-Pavia	F	CASK	15	16	LOMBARDIA
1003	Mondino-Pavia	F	CASK	2	2	LOMBARDIA
1004	Mondino-Pavia	F	CASK	5	5	LOMBARDIA
1005	Mondino-Pavia	F	CLTC	3	3	LOMBARDIA
1006	Mondino-Pavia	M	GNAO1	9	10	LIGURIA
1007	Mondino-Pavia	M	HCN1	6	7	LOMBARDIA
1008	Mondino-Pavia	F	MECP2	4	7	LOMBARDIA
1009	Mondino-Pavia	F	MECP2	9	11	.
1010	Mondino-Pavia	F	SYNGAP1	1	1	TRENTINO A. A.
1011	NeuroPedAOB	F	SPTAN1	4	9	SARDEGNA
1012	NeuroPedAOB	M	GRIN2B	7	8	SARDEGNA
1013	NeuroPedAOB	F	HCN1	2	4	SARDEGNA
1014	NeuroPedAOB	F	SCN1A	2	3	SARDEGNA
1015	NeuroPedAOB	M	SCN1A	1	8	SARDEGNA
1016	NeuroPedAOB	F	SCN2A	6	9	SARDEGNA
1017	NeuroPedAOB	F	GRIN2A	10	10	SARDEGNA
1018	NeuroPedAOB	M	PIGA	5	5	SARDEGNA
1019	NeuroPedAOB	F	GRIN2B	2	6	SARDEGNA
1020	NeuroPedAOB	M	GABRB3	10	14	SARDEGNA
1021	NeuroPedAOB	F	DNM1	7	12	SARDEGNA
1022	NeuroPedAOB	F	SCN1A	5	15	SARDEGNA
1023	NeuroPedAOB	F	SCN1A	4	4	SARDEGNA
1024	NeuroPedAOB	F	SCN1A	1	11	SARDEGNA
1025	NeuroPedAOB	M	SCN1A	1	10	SARDEGNA
1026	NeuroPedAOB	M	PURA	25	28	SARDEGNA
1027	NPIv.Sabelli-RM	M	CHD2	20	22	LAZIO
1028	NPIv.Sabelli-RM	M	SCN1A	15	22	LAZIO
1029	NPIv.Sabelli-RM	M	PIGQ	17	21	LAZIO
1030	NPIv.Sabelli-RM	F	SLC6A1	18	21	LAZIO
1031	NPIv.Sabelli-RM	F	CDKL5	15	20	LAZIO
1032	NPIv.Sabelli-RM	F	CHD2	12	19	LAZIO
1033	NPIv.Sabelli-RM	F	SYNGAP1	16	18	LAZIO
1034	NPIv.Sabelli-RM	M	GABRG2	17	17	LAZIO
1035	NPIv.Sabelli-RM	F	SLC2A1	12	16	LAZIO
1036	NPIv.Sabelli-RM	M	SCN8A	15	16	LAZIO
1037	NPIv.Sabelli-RM	F	PURA	11	16	LAZIO
1038	NPIv.Sabelli-RM	M	ATP1A3	8	14	LAZIO
1039	NPIv.Sabelli-RM	F	SCN1A	10	14	LAZIO

1040	NPIv.Sabelli-RM	M	SYNGAP1	10	13	.
1041	NPIv.Sabelli-RM	F	SLC2A1	4	14	EMILIA ROMAGNA
1042	NPIv.Sabelli-RM	F	CACNA1E	1	3	LAZIO
1043	NPIv.Sabelli-RM	F	STXBP1	1	3	CAMPANIA
1044	NPIv.Sabelli-RM	F	GRIN2A	21	23	LAZIO
1045	NPIv.Sabelli-RM	F	GRIN2A	18	20	LAZIO
1046	NPIv.Sabelli-RM	F	MECP2	4	9	ABRUZZI
1047	NPIv.Sabelli-RM	M	SLC2A1	9	15	.
1048	NPIv.Sabelli-RM	F	SCN2A	6	11	LAZIO
1049	NPIv.Sabelli-RM	F	CDKL5	2	4	LAZIO
1050	NPIv.Sabelli-RM	M	GRIN1	12	17	.
1051	NPIv.Sabelli-RM	F	CHD2	8	12	LAZIO
1052	NPIv.Sabelli-RM	M	KCNQ2	3	7	LAZIO
1053	NPIv.Sabelli-RM	F	SCN1A	6	9	LAZIO
1054	NPIv.Sabelli-RM	M	GNAO1	3	11	LAZIO
1055	NPIv.Sabelli-RM	M	DNM1	4	6	LAZIO
1056	NPIv.Sabelli-RM	M	SLC2A1	13	13	LAZIO
1057	NPIv.Sabelli-RM	M	SCN8A	16	16	LAZIO
1058	NPIv.Sabelli-RM	M	STXBP1	0	0	LAZIO
1059	NPIv.Sabelli-RM	M	SCN1A	9	9	LAZIO
1060	NPIv.Sabelli-RM	F	GABRB3	6	12	LAZIO
1061	NPIv.Sabelli-RM	M	SCN8A	13	14	LAZIO
1062	NPIv.Sabelli-RM	F	GNAO1	21	24	ABRUZZI
1063	NPIv.Sabelli-RM	M	GNAO1	4	6	LAZIO
1064	NPIv.Sabelli-RM	M	ATP1A3	21	24	LAZIO
1065	NPIv.Sabelli-RM	M	KCNA2	22	27	LAZIO
1066	NPIv.Sabelli-RM	F	BRAT1	20	23	LAZIO
1067	NPIv.Sabelli-RM	M	GNAO1	6	12	UMBRIA
1068	NPIv.Sabelli-RM	M	SLC2A1	9	11	LAZIO
1069	NPIv.Sabelli-RM	M	GRIN2A	7	11	LAZIO
1070	NPIv.Sabelli-RM	M	CACNA1A	6	10	PUGLIE
1071	NPIv.Sabelli-RM	F	SYNGAP1	3	8	LAZIO
1072	NPIv.Sabelli-RM	M	GNAO1	3	7	LAZIO
1073	NPIv.Sabelli-RM	F	FOXG1	1	6	LAZIO
1074	NPIv.Sabelli-RM	M	KCNT1	5	5	LAZIO
1075	NPIv.Sabelli-RM	M	PNPO	2	10	LAZIO
1076	NPIv.Sabelli-RM	F	SLC13A5	15	17	EMILIA ROMAGNA
1077	NPIv.Sabelli-RM	F	KCNQ2	29	32	LAZIO
1078	NPIv.Sabelli-RM	M	DHDDS	35	40	LAZIO
1079	NPIv.Sabelli-RM	M	DHDDS	9	14	SICILIA
1080	NPIv.Sabelli-RM	M	ARHGEF9	23	29	LAZIO
1081	Oasi-Troina	M	CACNA1A	19	20	SICILIA
1082	Oasi-Troina	F	CACNA1A	16	18	SICILIA
1083	Oasi-Troina	F	SCN1A	20	23	SICILIA
1084	Oasi-Troina	M	WWOX	10	12	SICILIA
1085	Oasi-Troina	M	SLC13A5	7	10	SICILIA
1086	Oasi-Troina	M	SLC13A5	13	16	SICILIA
1087	Oasi-Troina	M	KCNT1	33	34	SICILIA
1088	Oasi-Troina	F	KCNT1	25	26	SICILIA
1089	Oasi-Troina	F	CHD2	31	31	SICILIA
1090	Oasi-Troina	F	SMC1A	12	12	SICILIA
1091	Oasi-Troina	F	MECP2	5	12	SICILIA

1092	Oasi-Troina	F	SCN1A	40	41	SICILIA
1093	Oasi-Troina	M	TBC1D24	0	4	SICILIA
1094	Oasi-Troina	M	TBC1D24	8	12	SICILIA
1095	Oasi-Troina	F	MECP2	5	8	SICILIA
1096	Oasi-Troina	F	PCDH19	2	2	SICILIA
1097	Oasi-Troina	F	SCN2A	16	16	SICILIA
1098	Oasi-Troina	M	GABRB3	42	43	SICILIA
1099	Oasi-Troina	F	STXBP1	19	26	SICILIA
1100	OBG-RM	F	SCN1A	13	21	PUGLIE
1101	OBG-RM	F	SCN1A	3	12	LAZIO
1102	OBG-RM	F	SCN1A	8	17	LAZIO
1103	OBG-RM	F	SCN1A	9	18	LIGURIA
1104	OBG-RM	M	SCN1A	1	10	CAMPANIA
1105	OBG-RM	M	SCN1A	7	16	PUGLIE
1106	OBG-RM	M	SCN1A	2	11	LAZIO
1107	OBG-RM	F	PCDH19	2	11	BASILICATA
1108	OBG-RM	F	PCDH19	4	13	LAZIO
1109	OBG-RM	F	PCDH19	22	31	LAZIO
1110	OBG-RM	F	SCN1A	7	15	LAZIO
1111	OBG-RM	M	SCN1A	9	17	LAZIO
1112	OBG-RM	F	SCN1A	7	15	LAZIO
1113	OBG-RM	F	SCN1A	8	16	LAZIO
1114	OBG-RM	M	SCN1A	12	20	CALABRIA
1115	OBG-RM	F	SCN1A	5	13	CAMPANIA
1116	OBG-RM	M	SCN1A	9	17	PUGLIE
1117	OBG-RM	M	SCN1A	4	12	VENETO
1118	OBG-RM	F	SCN1A	4	12	CALABRIA
1119	OBG-RM	M	SCN1A	9	17	LAZIO
1120	OBG-RM	F	SCN1A	3	11	PUGLIE
1121	OBG-RM	M	SCN1A	6	14	CAMPANIA
1122	OBG-RM	M	SCN1A	23	31	CAMPANIA
1123	OBG-RM	M	SCN1A	27	35	PUGLIE
1124	OBG-RM	M	SCN1A	11	19	PUGLIE
1125	OBG-RM	M	SCN1A	18	26	CALABRIA
1126	OBG-RM	F	PCDH19	5	13	LAZIO
1127	OBG-RM	F	PCDH19	19	27	.
1128	OBG-RM	F	PCDH19	22	30	LAZIO
1129	OBG-RM	F	PCDH19	39	47	LAZIO
1130	OBG-RM	F	PCDH19	5	13	PUGLIE
1131	OBG-RM	F	PCDH19	7	15	LAZIO
1132	OBG-RM	F	PCDH19	12	20	UMBRIA
1133	OBG-RM	M	PCDH19	4	12	LAZIO
1134	OBG-RM	F	SCN1A	1	9	CAMPANIA
1135	OBG-RM	F	SCN1A	17	25	LAZIO
1136	OBG-RM	M	ATP1A3	1	9	LAZIO
1137	OBG-RM	M	CHD2	5	12	LAZIO
1138	OBG-RM	F	PCDH19	3	10	LAZIO
1139	OBG-RM	F	PCDH19	4	11	CALABRIA
1140	OBG-RM	M	PCDH19	4	11	CALABRIA
1141	OBG-RM	M	ATP1A2	7	14	CAMPANIA
1142	OBG-RM	M	CACNA1A	9	16	LAZIO
1143	OBG-RM	M	KCNB1	5	11	CAMPANIA

1144	OBG-RM	M	SCN8A	1	7	LAZIO
1145	OBG-RM	F	STXBP1	7	13	SICILIA
1146	OBG-RM	M	MEF2C	4	10	EMILIA ROMAGNA
1147	OBG-RM	M	CHD2	23	29	CAMPANIA
1148	OBG-RM	F	ALG13	2	8	LAZIO
1149	OBG-RM	M	SCN1A	2	8	LAZIO
1150	OBG-RM	M	SCN1A	5	11	PUGLIE
1151	OBG-RM	F	SCN8A	0	6	PUGLIE
1152	OBG-RM	M	SCN8A	9	15	CAMPANIA
1153	OBG-RM	F	CDKL5	2	8	LAZIO
1154	OBG-RM	M	GRIN2A	19	25	ABRUZZI
1155	OBG-RM	F	GRIN2A	33	39	ABRUZZI
1156	OBG-RM	F	SCN1A	9	15	SICILIA
1157	OBG-RM	F	PCDH19	14	20	PUGLIE
1158	OBG-RM	F	PCDH19	9	15	PUGLIE
1159	OBG-RM	F	CDKL5	16	22	CALABRIA
1160	OBG-RM	M	SCN1A	3	9	CAMPANIA
1161	OBG-RM	M	SCN1A	35	41	.
1162	OBG-RM	F	SCN1A	3	9	LAZIO
1163	OBG-RM	M	PIGA	1	6	CALABRIA
1164	OBG-RM	F	KCNQ2	2	7	CAMPANIA
1165	OBG-RM	F	GABRA1	4	9	ABRUZZI
1166	OBG-RM	F	KCNB1	30	35	LAZIO
1167	OBG-RM	M	STXBP1	1	6	LAZIO
1168	OBG-RM	F	BRAT1	2	7	LAZIO
1169	OBG-RM	M	MECP2	8	13	LAZIO
1170	OBG-RM	F	SCN1A	2	7	.
1171	OBG-RM	F	SCN1A	1	6	LAZIO
1172	OBG-RM	F	KCNQ2	0	5	LAZIO
1173	OBG-RM	F	KCNQ2	1	6	ABRUZZI
1174	OBG-RM	F	MECP2	3	8	LAZIO
1175	OBG-RM	F	CDKL5	0	5	CALABRIA
1176	OBG-RM	F	SCN1A	1	6	BASILICATA
1177	OBG-RM	M	KCNB1	3	8	LAZIO
1178	OBG-RM	F	SCN1A	1	6	LAZIO
1179	OBG-RM	F	MECP2	4	9	.
1180	OBG-RM	F	GRIN2B	9	14	ABRUZZI
1181	OBG-RM	F	SCN1A	4	9	BASILICATA
1182	OBG-RM	F	ATP1A2	29	34	LAZIO
1183	OBG-RM	M	FGF12	5	9	CAMPANIA
1184	OBG-RM	F	SYNGAP1	3	7	CAMPANIA
1185	OBG-RM	F	SLC2A1	26	30	LAZIO
1186	OBG-RM	F	ATP1A2	10	14	PUGLIE
1187	OBG-RM	F	SCN1A	14	18	MOLISE
1188	OBG-RM	F	SCN1A	14	18	MOLISE
1189	OBG-RM	F	SYNGAP1	4	8	LAZIO
1190	OBG-RM	F	SLC2A1	1	5	CAMPANIA
1191	OBG-RM	F	KCNT1	0	4	SICILIA
1192	OBG-RM	M	STXBP1	0	4	CALABRIA
1193	OBG-RM	F	CDKL5	9	13	.
1194	OBG-RM	M	GRIN2A	0	4	SICILIA
1195	OBG-RM	F	SCN8A	0	4	LAZIO

1196	OBG-RM	F	SCN2A	0	4	ABRUZZI
1197	OBG-RM	M	BRAT1	4	8	BASILICATA
1198	OBG-RM	F	CDKL5	2	6	CAMPANIA
1199	OBG-RM	F	DNM1	15	19	ABRUZZI
1200	OBG-RM	M	CHD2	7	11	LAZIO
1201	OBG-RM	F	STXBP1	5	9	PUGLIE
1202	OBG-RM	M	SCN2A	19	23	MARCHE
1203	OBG-RM	M	GABRB3	19	23	LAZIO
1204	OBG-RM	F	CDKL5	7	11	.
1205	OBG-RM	M	PIGA	15	19	.
1206	OBG-RM	M	ATP1A2	25	29	LAZIO
1207	OBG-RM	F	CACNA1A	2	6	LAZIO
1208	OBG-RM	M	GNAO1	18	22	EMILIA ROMAGNA
1209	OBG-RM	M	KCNQ2	1	4	CAMPANIA
1210	OBG-RM	F	SCN1A	1	4	PUGLIE
1211	OBG-RM	F	PCDH19	4	7	CAMPANIA
1212	OBG-RM	M	GRIN2A	5	8	CAMPANIA
1213	OBG-RM	F	STXBP1	14	17	CAMPANIA
1214	OBG-RM	F	CDKL5	26	29	LAZIO
1215	OBG-RM	F	PCDH19	2	5	LAZIO
1216	OBG-RM	F	GABRB3	1	4	BASILICATA
1217	OBG-RM	F	KCNQ2	19	22	LAZIO
1218	OBG-RM	M	SYNGAP1	7	10	CAMPANIA
1219	OBG-RM	F	GABRB3	1	4	LAZIO
1220	OBG-RM	F	SCN2A	38	41	LAZIO
1221	OBG-RM	F	GRIN2B	3	6	LAZIO
1222	OBG-RM	M	SPTAN1	15	18	LAZIO
1223	OBG-RM	M	GRIN2D	19	22	CAMPANIA
1224	OBG-RM	F	SCN1A	16	19	LAZIO
1225	OBG-RM	F	SLC2A1	16	19	CAMPANIA
1226	OBG-RM	F	SCN1A	20	23	.
1227	OBG-RM	F	SCN2A	5	8	.
1228	OBG-RM	F	GNAO1	15	18	CAMPANIA
1229	OBG-RM	F	CHD2	5	7	BASILICATA
1230	OBG-RM	F	CDKL5	1	3	ABRUZZI
1231	OBG-RM	F	SCN8A	16	18	CAMPANIA
1232	OBG-RM	F	SLC6A1	4	6	LAZIO
1233	OBG-RM	F	PCDH19	2	4	.
1234	OBG-RM	F	KCNB1	16	18	LAZIO
1235	OBG-RM	F	STXBP1	0	2	BASILICATA
1236	OBG-RM	M	KCNB1	2	4	LAZIO
1237	OBG-RM	M	GRIN2A	6	8	LAZIO
1238	OBG-RM	M	GABRB3	0	2	CALABRIA
1239	OBG-RM	F	CHD2	7	9	.
1240	OBG-RM	M	STXBP1	3	5	LAZIO
1241	OBG-RM	M	SCN2A	0	2	SICILIA
1242	OBG-RM	M	CHD2	24	26	LAZIO
1243	OBG-RM	M	KCNB1	12	14	LAZIO
1244	OBG-RM	M	GRIN1	4	6	LAZIO
1245	OBG-RM	F	GABRA1	22	24	LAZIO
1246	OBG-RM	M	SCN8A	17	19	PUGLIE
1247	OBG-RM	F	KCNQ2	12	14	SICILIA

1248	OBG-RM	F	GABRA1	14	16	LAZIO
1249	OBG-RM	M	SLC2A1	2	4	TOSCANA
1250	OBG-RM	M	GABRB2	8	10	LAZIO
1251	OBG-RM	M	SCN1A	1	3	LAZIO
1252	OBG-RM	M	ATP1A3	5	7	LAZIO
1253	OBG-RM	M	EEF1A2	4	5	PUGLIE
1254	OBG-RM	M	STXBP1	1	2	CAMPANIA
1255	OBG-RM	M	KCNQ2	3	4	.
1256	OBG-RM	M	SLC6A1	17	18	LAZIO
1257	OBG-RM	M	SCN8A	7	8	CAMPANIA
1258	OBG-RM	M	GABRA1	13	14	LAZIO
1259	OBG-RM	F	MECP2	7	8	LAZIO
1260	OBG-RM	M	SCN1A	1	2	SARDEGNA
1261	OBG-RM	F	PCDH19	2	3	LAZIO
1262	OBG-RM	M	KCNA2	6	7	LAZIO
1263	OBG-RM	M	SCN2A	31	32	CAMPANIA
1264	OBG-RM	F	PCDH19	1	2	BASILICATA
1265	OBG-RM	F	SCN1A	0	1	LAZIO
1266	OBG-RM	F	CHD2	0	1	LAZIO
1267	OBG-RM	F	ALG13	0	1	LAZIO
1268	OBG-RM	F	KCNQ2	12	13	CALABRIA
1269	OBG-RM	F	MECP2	4	5	LAZIO
1270	OBG-RM	F	CHD2	9	10	LAZIO
1271	OBG-RM	F	GABRG2	5	6	UMBRIA
1272	OBG-RM	F	MECP2	11	12	LAZIO
1273	OBG-RM	F	CASK	1	2	LAZIO
1274	OBG-RM	M	GABRB3	25	25	CAMPANIA
1275	OBG-RM	F	KCNQ2	1	1	LAZIO
1276	OBG-RM	M	EEF1A2	6	6	CAMPANIA
1277	OBG-RM	F	SCN1A	12	12	LAZIO
1278	OBG-RM	F	SCN8A	9	9	LAZIO
1279	OBG-RM	F	SYNGAP1	9	9	ABRUZZI
1280	OBG-RM	M	SCN8A	24	24	LAZIO
1281	OBG-RM	F	SCN8A	7	7	VENETO
1282	OBG-RM	F	NEXMIF	6	6	LAZIO
1283	OBG-RM	M	SCN1A	2	2	CAMPANIA
1284	OBG-RM	M	CACNA1A	4	4	CALABRIA
1285	OBG-RM	F	SYNGAP1	21	21	LAZIO
1286	OBG-RM	M	CDKL5	1	1	.
1287	OBG-RM	M	CLCN4	8	8	LAZIO
1288	OBG-RM	M	KCNB1	9	9	ABRUZZI
1289	OBG-RM	M	SCN1A	9	9	MARCHE
1290	OBG-RM	M	DNM1L	2	2	BASILICATA
1291	OBG-RM	M	SCN1A	1	1	LAZIO
1292	OBG-RM	M	GRIN1	10	12	LAZIO
1293	OBG-RM	F	GRIN2D	10	12	LAZIO
1294	OBG-RM	M	GNAO1	4	10	UMBRIA
1295	OBG-RM	M	KCNQ2	2	4	CALABRIA
1296	OBG-RM	F	MECP2	3	3	EMILIA ROMAGNA
1297	OBG-RM	F	WWOX	7	9	LAZIO
1298	OBG-RM	M	WWOX	21	24	CAMPANIA
1299	OBG-RM	M	WWOX	10	12	SICILIA

1300	OBG-RM	F	CDK19	1	3	.
1301	OBG-RM	M	CSNK2B	9	9	CALABRIA
1302	OBG-RM	M	CSNK2B	34	34	CALABRIA
1303	OBG-RM	F	CSNK2B	9	9	SICILIA
1304	OBG-RM	F	CSNK2B	2	2	CAMPANIA
1305	OBG-RM	F	CSNK2B	8	10	ABRUZZI
1306	OBG-RM	F	CSNK2B	17	18	CALABRIA
1307	OBG-RM	F	CSNK2B	11	12	CALABRIA
1308	OBG-RM	F	CSNK2B	40	41	CALABRIA
1309	OBG-RM	M	GRIN1	64	66	ABRUZZI
1310	OBG-RM	F	SZT2	4	7	LAZIO
1311	OBG-RM	F	SZT2	10	13	PUGLIE
1312	OBG-RM	F	SZT2	6	9	LAZIO
1313	OBG-RM	M	SZT2	1	4	CAMPANIA
1314	OBG-RM	F	SZT2	5	7	CAMPANIA
1315	OBG-RM	F	CYFIP2	0	0	CAMPANIA
1316	OBG-RM	F	FRRS1L	5	6	BASILICATA
1317	OBG-RM	M	FRRS1L	5	5	VENETO
1318	OBG-RM	F	GABRA5	2	3	PUGLIE
1319	OBG-RM	M	KMT2E	2	2	CALABRIA
1320	OBG-RM	F	MBD5	14	14	.
1321	OBG-RM	F	MBD5	45	45	LAZIO
1322	OBG-RM	M	PACS2	7	11	PUGLIE
1323	OBG-RM	M	PARS2	3	3	ABRUZZI
1324	OBG-RM	M	PNKP	1	3	.
1325	OBG-RM	F	SCN1B	4	6	LAZIO
1326	OBG-RM	M	POLG	1	4	CALABRIA
1327	OBG-RM	M	SCN1B	10	13	CAMPANIA
1328	OBG-RM	F	SCN1B	12	14	LAZIO
1329	OBG-RM	F	SLC13A5	24	27	CALABRIA
1330	OBG-RM	F	SLC13A5	24	27	CALABRIA
1331	OBG-RM	M	SLC1A2	16	18	SICILIA
1332	OBG-RM	F	ST3GAL3	14	15	LAZIO
1333	OBG-RM	F	KMT2E	7	7	.
1334	OBG-RM	F	SCN1B	4	7	CALABRIA
1335	OBG-RM	M	SCN1B	13	15	LOMBARDIA
1336	OBG-RM	M	SCN1A	23	31	LAZIO
1337	Salesi-Ancona	M	SCN2A	16	19	ABRUZZI
1338	Salesi-Ancona	F	SCN1A	15	19	ABRUZZI
1339	Salesi-Ancona	M	GABRG2	10	13	ABRUZZI
1340	Salesi-Ancona	F	SLC2A1	12	13	MARCHE
1341	Salesi-Ancona	M	SCN2A	11	12	ABRUZZI
1342	Salesi-Ancona	F	SCN1A	6	10	MARCHE
1343	Salesi-Ancona	F	KCNQ2	10	10	MARCHE
1344	Salesi-Ancona	F	SCN1A	2	10	MARCHE
1345	Salesi-Ancona	F	FOXG1	10	10	UMBRIA
1346	Salesi-Ancona	F	PCDH19	4	9	ABRUZZI
1347	Salesi-Ancona	F	SCN2A	1	6	ABRUZZI
1348	Salesi-Ancona	F	SLC2A1	6	8	EMILIA ROMAGNA
1349	Salesi-Ancona	F	CHD2	3	8	MARCHE
1350	Salesi-Ancona	M	SCN8A	1	7	MARCHE
1351	Salesi-Ancona	F	SCN1A	3	6	ABRUZZI

1352	Salesi-Ancona	F	STXBP1	0	5	MARCHE
1353	Salesi-Ancona	F	SCN8A	1	5	MARCHE
1354	Salesi-Ancona	F	SCN2A	0	4	MARCHE
1355	Salesi-Ancona	F	CDKL5	0	3	MARCHE
1356	Salesi-Ancona	F	SCN8A	1	3	MARCHE
1357	Salesi-Ancona	M	SCN1A	2	3	ABRUZZI
1358	Salesi-Ancona	F	SCN1A	0	0	MARCHE
1359	Salesi-Ancona	F	BRAT1	0	0	MARCHE
1360	Salesi-Ancona	F	PURA	0	0	ABRUZZI
1361	Salesi-Ancona	F	KCNQ2	0	0	MARCHE
1362	Salesi-Ancona	M	KCNQ2	0	0	ABRUZZI
1363	Salesi-Ancona	M	SCN1A	0	0	MARCHE
1364	Salesi-Ancona	F	MECP2	2	2	ABRUZZI
1365	Salesi-Ancona	F	SCN1A	2	3	ABRUZZI
1366	Salesi-Ancona	M	PACS2	1	2	ABRUZZI
1367	Salesi-Ancona	M	SCN1A	1	2	MARCHE
1368	Salesi-Ancona	F	PCDH19	5	13	ABRUZZI
1369	Salesi-Ancona	F	SLC12A5	12	14	MARCHE
1370	Salesi-Ancona	M	CACNA1A	3	3	.
1371	Salesi-Ancona	M	SCN1A	3	4	MARCHE
1372	Salesi-Ancona	F	SCN1A	2	10	MARCHE
1373	Salesi-Ancona	F	PCDH19	4	8	MARCHE
1374	Salesi-Ancona	M	SCN1A	29	35	ABRUZZI
1375	Salesi-Ancona	M	KCNQ2	2	9	MARCHE
1376	Salesi-Ancona	F	SCN1A	2	9	ABRUZZI
1377	Salesi-Ancona	M	SCN1A	6	7	ABRUZZI
1378	Salesi-Ancona	F	SCN1A	24	29	ABRUZZI
1379	Salesi-Ancona	M	CAD	28	28	UMBRIA
1380	Salesi-Ancona	M	WWOX	24	25	CALABRIA
1381	SollievoeSoff.-FG	M	GRIN2A	14	18	PUGLIE
1382	SollievoeSoff.-FG	M	GRIN2A	20	24	PUGLIE
1383	SollievoeSoff.-FG	M	SCN1A	3	7	PUGLIE
1384	SollievoeSoff.-FG	M	SCN1A	24	28	PUGLIE
1385	SollievoeSoff.-FG	M	SCN1A	17	21	PUGLIE
1386	SollievoeSoff.-FG	F	SCN1A	1	5	PUGLIE
1387	SollievoeSoff.-FG	M	KCNQ2	0	4	PUGLIE
1388	SollievoeSoff.-FG	F	SPTAN1	23	26	PUGLIE
1389	SollievoeSoff.-FG	M	STXBP1	6	9	PUGLIE
1390	SollievoeSoff.-FG	M	ARX	1	4	PUGLIE
1391	SollievoeSoff.-FG	F	MECP2	2	5	PUGLIE
1392	SollievoeSoff.-FG	F	KCNQ2	1	4	PUGLIE
1393	SollievoeSoff.-FG	F	KCNQ2	1	4	BASILICATA
1394	SollievoeSoff.-FG	F	CDKL5	27	30	PUGLIE
1395	SollievoeSoff.-FG	F	SCN1A	10	13	PUGLIE
1396	SollievoeSoff.-FG	F	SCN1A	3	6	PUGLIE
1397	SollievoeSoff.-FG	F	PCDH19	7	10	CAMPANIA
1398	SollievoeSoff.-FG	M	KCNQ2	21	24	BASILICATA
1399	SollievoeSoff.-FG	F	MECP2	4	7	CAMPANIA
1400	SollievoeSoff.-FG	F	ATP1A2	2	4	PUGLIE
1401	SollievoeSoff.-FG	F	GRIN2A	10	12	SICILIA
1402	SollievoeSoff.-FG	F	SCN1A	12	14	BASILICATA
1403	SollievoeSoff.-FG	M	SCN2A	18	20	PUGLIE

1404	SollievoeSoff.-FG	F	SCN2A	1	3	BASILICATA
1405	SollievoeSoff.-FG	M	GABRA1	12	14	PUGLIE
1406	SollievoeSoff.-FG	M	CDKL5	9	11	EMILIA ROMAGNA
1407	SollievoeSoff.-FG	F	FOXG1	54	56	SICILIA
1408	SollievoeSoff.-FG	M	SCN1A	2	4	PUGLIE
1409	SollievoeSoff.-FG	F	ATP1A2	8	10	SICILIA
1410	SollievoeSoff.-FG	M	SCN1A	5	7	PUGLIE
1411	SollievoeSoff.-FG	F	GABRA1	5	7	EMILIA ROMAGNA
1412	SollievoeSoff.-FG	F	GABRA1	20	22	PUGLIE
1413	SollievoeSoff.-FG	F	CHD2	22	24	PUGLIE
1414	SollievoeSoff.-FG	M	SLC2A1	10	12	PUGLIE
1415	SollievoeSoff.-FG	F	MECP2	26	27	PUGLIE
1416	SollievoeSoff.-FG	M	SLC2A1	13	14	SICILIA
1417	SollievoeSoff.-FG	M	SCN1A	31	32	PUGLIE
1418	SollievoeSoff.-FG	F	PCDH19	1	2	BASILICATA
1419	SollievoeSoff.-FG	M	DNM1	18	19	PUGLIE
1420	SollievoeSoff.-FG	M	SCN2A	7	8	SICILIA
1421	SollievoeSoff.-FG	M	SCN8A	5	6	PUGLIE
1422	SollievoeSoff.-FG	F	BRAT1	0	1	PUGLIE
1423	SollievoeSoff.-FG	M	CACNA1A	5	5	SICILIA
1424	SollievoeSoff.-FG	F	MECP2	6	6	SARDEGNA
1425	SollievoeSoff.-FG	M	SCN1A	4	4	PUGLIE
1426	SollievoeSoff.-FG	M	SCN1A	8	8	SICILIA
1427	SollievoeSoff.-FG	F	SCN2A	5	5	SICILIA
1428	SollievoeSoff.-FG	F	NEXMIF	37	37	PUGLIE
1429	SollievoeSoff.-FG	F	GRIN2A	11	11	PUGLIE
1430	SollievoeSoff.-FG	M	GRIN2A	11	11	SICILIA
1431	SollievoeSoff.-FG	F	SCN2A	1	1	PUGLIE
1432	SollievoeSoff.-FG	F	SCN1A	3	3	LOMBARDIA
1433	SollievoeSoff.-FG	M	SCN1A	5	5	PUGLIE
1434	SollievoeSoff.-FG	F	KCNQ2	1	4	PUGLIE
1435	SollievoeSoff.-FG	F	SCN1A	2	4	PUGLIE
1436	SollievoeSoff.-FG	F	SCN1A	44	45	PUGLIE
1437	SollievoeSoff.-FG	F	MECP2	44	45	PUGLIE
1438	SollievoeSoff.-FG	M	SCN1A	38	40	PUGLIE
1439	SollievoeSoff.-FG	M	SCN1A	31	32	PUGLIE
1440	UOCNeuropsichiatriaInfantileVerona	M	ATP1A2	9	16	VENETO
1441	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	10	14	TRENTINO A. A.
1442	UOCNeuropsichiatriaInfantileVerona	M	DNM1	5	8	LOMBARDIA
1443	UOCNeuropsichiatriaInfantileVerona	F	GABRB3	1	3	TRENTINO A. A.
1444	UOCNeuropsichiatriaInfantileVerona	F	HCN1	1	5	VENETO
1445	UOCNeuropsichiatriaInfantileVerona	M	KCNQ2	0	7	VENETO
1446	UOCNeuropsichiatriaInfantileVerona	F	KCNQ2	0	8	VENETO
1447	UOCNeuropsichiatriaInfantileVerona	F	KCNQ2	2	10	TRENTINO A. A.
1448	UOCNeuropsichiatriaInfantileVerona	F	NEXMIF	2	4	VENETO
1449	UOCNeuropsichiatriaInfantileVerona	F	PCDH19	22	32	LOMBARDIA
1450	UOCNeuropsichiatriaInfantileVerona	F	PCDH19	16	26	VENETO
1451	UOCNeuropsichiatriaInfantileVerona	F	PCDH19	2	12	VENETO
1452	UOCNeuropsichiatriaInfantileVerona	F	PCDH19	8	16	CAMPANIA
1453	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	3	13	LOMBARDIA
1454	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	2	11	VENETO
1455	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	21	23	LOMBARDIA

1456	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	7	15	VENETO
1457	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	12	20	EMILIA ROMAGNA
1458	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	1	8	VENETO
1459	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	1	8	TRENTINO A. A.
1460	UOCNeuropsichiatriaInfantileVerona	F	SCN8A	1	8	EMILIA ROMAGNA
1461	UOCNeuropsichiatriaInfantileVerona	F	SCN8A	15	21	PIEMONTE
1462	UOCNeuropsichiatriaInfantileVerona	F	SLC2A1	18	18	VENETO
1463	UOCNeuropsichiatriaInfantileVerona	M	STXBP1	3	13	LOMBARDIA
1464	UOCNeuropsichiatriaInfantileVerona	M	SYNGAP1	10	11	PIEMONTE
1465	UOCNeuropsichiatriaInfantileVerona	F	YWHAG	4	6	TRENTINO A. A.
1466	UOCNeuropsichiatriaInfantileVerona	F	ALG13	7	11	VENETO
1467	UOCNeuropsichiatriaInfantileVerona	F	ARX	9	14	CALABRIA
1468	UOCNeuropsichiatriaInfantileVerona	M	CACNA1A	9	18	VENETO
1469	UOCNeuropsichiatriaInfantileVerona	F	CACNA1A	6	12	VENETO
1470	UOCNeuropsichiatriaInfantileVerona	M	CACNA1A	11	17	TRENTINO A. A.
1471	UOCNeuropsichiatriaInfantileVerona	M	KCNT1	16	22	VENETO
1472	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	16	23	PUGLIE
1473	UOCNeuropsichiatriaInfantileVerona	M	CDKL5	1	10	TOSCANA
1474	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	7	14	VENETO
1475	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	15	21	VENETO
1476	UOCNeuropsichiatriaInfantileVerona	F	CSNK2B	11	12	VENETO
1477	UOCNeuropsichiatriaInfantileVerona	M	GRIN2A	16	20	VENETO
1478	UOCNeuropsichiatriaInfantileVerona	M	GRIN2A	9	16	VENETO
1479	UOCNeuropsichiatriaInfantileVerona	M	GRIN2B	5	12	VENETO
1480	UOCNeuropsichiatriaInfantileVerona	M	KCNQ2	2	5	VENETO
1481	UOCNeuropsichiatriaInfantileVerona	F	SLC6A1	19	20	LOMBARDIA
1482	UOCNeuropsichiatriaInfantileVerona	M	KCNT1	10	16	TOSCANA
1483	UOCNeuropsichiatriaInfantileVerona	M	KCNT1	14	19	PIEMONTE
1484	UOCNeuropsichiatriaInfantileVerona	M	MBD5	19	25	LOMBARDIA
1485	UOCNeuropsichiatriaInfantileVerona	F	PCDH19	2	8	PUGLIE
1486	UOCNeuropsichiatriaInfantileVerona	F	SLC6A1	16	19	VENETO
1487	UOCNeuropsichiatriaInfantileVerona	F	KCNQ2	19	19	VENETO
1488	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	3	7	VENETO
1489	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	7	14	VENETO
1490	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	47	50	VENETO
1491	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	11	16	LOMBARDIA
1492	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	8	15	TRENTINO A. A.
1493	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	3	9	VENETO
1494	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	17	24	VENETO
1495	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	1	7	VENETO
1496	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	3	10	LOMBARDIA
1497	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	20	27	VENETO
1498	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	7	11	TRENTINO A. A.
1499	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	4	11	VENETO
1500	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	3	8	TRENTINO A. A.
1501	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	2	9	VENETO
1502	UOCNeuropsichiatriaInfantileVerona	M	SCN8A	13	19	VENETO
1503	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	16	16	VENETO
1504	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	28	35	UMBRIA
1505	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	31	36	VENETO
1506	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	8	16	LAZIO
1507	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	16	19	VENETO

1508	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	4	12	VENETO
1509	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	42	48	PIEMONTE
1510	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	7	14	LOMBARDIA
1511	UOCNeuropsichiatriaInfantileVerona	M	SPTAN1	17	18	VENETO
1512	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	21	28	VENETO
1513	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	5	11	VENETO
1514	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	14	16	VENETO
1515	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	14	21	SICILIA
1516	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	12	19	SICILIA
1517	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	33	33	VENETO
1518	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	15	17	VENETO
1519	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	74	76	VENETO
1520	UOCNeuropsichiatriaInfantileVerona	M	SCN8A	3	6	VENETO
1521	UOCNeuropsichiatriaInfantileVerona	M	SLC2A1	3	11	VENETO
1522	UOCNeuropsichiatriaInfantileVerona	M	SLC2A1	40	48	VENETO
1523	UOCNeuropsichiatriaInfantileVerona	M	SLC2A1	5	13	VENETO
1524	UOCNeuropsichiatriaInfantileVerona	M	SLC2A1	4	12	VENETO
1525	UOCNeuropsichiatriaInfantileVerona	F	SLC6A1	10	12	VENETO
1526	UOCNeuropsichiatriaInfantileVerona	F	SPTAN1	12	18	EMILIA ROMAGNA
1527	UOCNeuropsichiatriaInfantileVerona	F	SYNGAP1	15	15	VENETO
1528	UOCNeuropsichiatriaInfantileVerona	M	CDKL5	7	16	EMILIA ROMAGNA
1529	UOCNeuropsichiatriaInfantileVerona	M	GRIN2A	13	16	PUGLIE
1530	UOCNeuropsichiatriaInfantileVerona	F	SMC1A	13	16	VENETO
1531	UOCNeuropsichiatriaInfantileVerona	M	UBA5	12	15	VENETO
1532	UOCNeuropsichiatriaInfantileVerona	F	SLC2A1	8	15	VENETO
1533	UOCNeuropsichiatriaInfantileVerona	F	MBD5	8	14	VENETO
1534	UOCNeuropsichiatriaInfantileVerona	M	PNPO	8	14	VENETO
1535	UOCNeuropsichiatriaInfantileVerona	M	SYNGAP1	11	14	VENETO
1536	UOCNeuropsichiatriaInfantileVerona	F	SLC6A1	10	13	EMILIA ROMAGNA
1537	UOCNeuropsichiatriaInfantileVerona	M	SLC6A1	10	13	VENETO
1538	UOCNeuropsichiatriaInfantileVerona	F	GABRA1	8	12	VENETO
1539	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	6	12	CALABRIA
1540	UOCNeuropsichiatriaInfantileVerona	M	KCNQ2	6	12	VENETO
1541	UOCNeuropsichiatriaInfantileVerona	F	CHD2	10	12	VENETO
1542	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	6	11	LAZIO
1543	UOCNeuropsichiatriaInfantileVerona	M	PURA	7	10	VENETO
1544	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	7	10	EMILIA ROMAGNA
1545	UOCNeuropsichiatriaInfantileVerona	F	SCN1A	6	9	LOMBARDIA
1546	UOCNeuropsichiatriaInfantileVerona	F	KCNQ2	6	9	VENETO
1547	UOCNeuropsichiatriaInfantileVerona	F	KCNB1	5	9	VENETO
1548	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	5	9	TRENTINO A. A.
1549	UOCNeuropsichiatriaInfantileVerona	F	CHD2	6	8	VENETO
1550	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	2	8	.
1551	UOCNeuropsichiatriaInfantileVerona	M	CHD2	8	8	TRENTINO A. A.
1552	UOCNeuropsichiatriaInfantileVerona	M	SCN2A	1	7	LOMBARDIA
1553	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	1	7	VENETO
1554	UOCNeuropsichiatriaInfantileVerona	F	NEXMIF	5	6	CAMPANIA
1555	UOCNeuropsichiatriaInfantileVerona	M	STXBP1	2	5	VENETO
1556	UOCNeuropsichiatriaInfantileVerona	F	STXBP1	1	5	VENETO
1557	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	1	4	VENETO
1558	UOCNeuropsichiatriaInfantileVerona	M	HNRNPU	2	4	VENETO
1559	UOCNeuropsichiatriaInfantileVerona	M	KCNQ2	0	3	VENETO

1560	UOCNeuropsichiatriaInfantileVerona	M	SLC9A6	3	3	VENETO
1561	UOCNeuropsichiatriaInfantileVerona	F	PCDH19	2	3	VENETO
1562	UOCNeuropsichiatriaInfantileVerona	M	RHOBTB2	0	0	VENETO
1563	UOCNeuropsichiatriaInfantileVerona	F	SCN2A	0	0	VENETO
1564	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	0	0	VENETO
1565	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	0	0	VENETO
1566	UOCNeuropsichiatriaInfantileVerona	M	SCN1A	39	42	SICILIA
1567	UOCNeuropsichiatriaInfantileVerona	F	CDKL5	28	35	TRENTINO A. A.
1568	UOCNeuropsichiatriaInfantileVerona	M	STXBP1	19	23	VENETO