BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Vincenzo Nigro ORCID 0000-0002-3378-5006	Full Professor of Medical Genetics and Rector Delegate - Department of Precision Medicine, Università degli Studi della Campania "Luigi Vanvitelli", Naples, Italy - TIGEM Associate Investigator, Pozzuoli, Italy

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Università di Napoli Federico II – Naples, Italy	Medicine	1987	Medicine and Surgery

A. Personal Statement

I am currently full professor of Medical Genetics at the Department of "Precision Medicine" of the Università degli Studi della Campania "Luigi Vanvitelli" (formerly, Seconda Università di Napoli) and Associate Investigator of the Telethon Institute of Genetics and Medicine (TIGEM).

I was born in Naples on July 28th, 1960 and graduated in Medicine with applause and dignity of publication of the thesis. In 1982-1990 I was at the Institute of General Pathology and Oncology, under the guidance of Gianfredo Puca as a student and then with a fellowship of the Italian cancer research association (AIRC). In this period, my research interests aimed to the study of the mechanism of action of the estrogen receptor. In the years 1989 to 1994, I was at the International Institute of Genetics and Biophysics (IIGB), CNR, Naples under the guidance of prof. Edoardo Boncinelli: we worked at the identification of transcription factors that regulate embryogenesis and the formation of brain. I also collaborated with dr. Antonio Simeone. I got a permanent position as University Researcher in 1992 and created a research team for the study of limb-girdle muscular dystrophies. Among the most significant results of those years, the identification of delta-sarcoglycan and mutations that cause limb-girdle muscular dystrophy (LGMD2F) (cited by 90 reviews) and the identification of the gene that causes the cardiomyopathy of the BIO14.6 hamster. In 2000, I became associate professor of general pathology and, in 2006 full professor. I identified the causes of other Mendelian disorders, such as FG syndrome 4, LGMD1F, LGMD1G etc. I now coordinate the laboratory of Medical Genetics at the Vanvitelli University. In the last few years, I have leaded research projects on the gene therapy of delta-sarcoglycanopathy and on the identification and classification of novel causes of genetic myopathies using next generation sequencing. I developed a number of specific strategies for detecting mutations in neuromuscular disorders, lysosomal storage disorders, neufibromatosis, kidney disorders, etc. I am coordinator of the Tigem Next Generation Sequencing Core, based on the platforms Illumina HiSeq1000, NextSeq500 and recently NovaSeq6000. This facility has processed >9,800 whole exome samples since 2011 with full in-house pipeline. Starting from 2016, I became coordinator of the Telethon Program "Undiagnosed diseases" and in 2017 partner of SOLVE-RD.

B. Positions and Honors

Positions and Employment

1987-1988 **Fellow** in General pathology, Second University of Naples, Italy
1988-1994 **Host** at the International Institute of Genetics and Biophysics; CNR, Naples
1992-1999 **Assistant Professor** in General Pathology, Second University of Naples
2000-2006 **Associate Professor** in General Pathology, Second University of Naples
2000-present **Associate Investigator** at TIGEM (Telethon Institute of Genetics and Medicine) Pozzuoli
2007-2012 **Director** of "Mutation Detection" core at the Second University of Naples
2005-2015 **Coordinator** of PhD in Medical Genetics at the Second University of Naples
2006-2010 **Full Professor** of General Pathology at the Second University of Naples
2010-present **Full Professor** of Medical Genetics at the Second University of Naples (Università della Campania)
2011-2020 **Director** of "Next Generation Sequencing" facility at TIGEM, Pozzuoli (NA)
2016-2019 **Director** UOSD of Medical genetics Vanvitelli Hospital
2016-today **Rector Delegate** for Didactics of the University of Campania "Luigi Vanvitelli"
2016-today **Coordinator** of the Telethon Undiagnosed Diseases Program
2019-today **President** of the District Campania Bioscience
2019-today **Director** of the School of Specialization in Medical Genetics
2020-today **Head** of the Medical Genetics and Cardiomyology UOSID of the Vanvitelli Polyclinic Hospital
2021-2022 **Coordinator** of the Network for Italian Genomes

Other Experience and Professional Memberships

1996- present Member, World Muscle Society
2018- Executive Board AIM
2018 – President Mediterranean Society of Myology

Honors

1996 "G. Conte "Academy Award for Basic Research, Nicosia, Cipro.
2014 Winner of StartUp Campania

Executive editorial roles

Executive Editor di Neuromuscular Disorders (Elsevier ISSN: 0960-8966)
Associate Editor "Acta Myologica" (Pacini ISSN:2532-1900)

C. Contribution to Science

I have published 253 articles in peer reviewed journals with 8,420 citations (h=48). Scopus Author ID: 7003332824

ORCID http://orcid.org/0000-0002-3378-5006

My early publications directly addressed cancer and developmental biology. I served as co-investigator in these studies.

- Estradiol receptor has proteolytic activity that is responsible for its own transformation. Puca et al., Proc Natl Acad Sci U S A. 1986 Aug;83(15):5367-71. PMID: 2426695.
- Metal binding sites of the estradiol receptor from calf uterus and their possible role in the regulation of receptor function. Medici et al. Biochemistry. 1989 Jan 10;28(1):212-9. PMID: 2706244.
- Proteolytic activity of the purified hormone-binding subunit in the estrogen receptor. Molinari et al. Proc Natl Acad Sci U S A. 1991 May 15;88(10):4463-7. PMID: 1709742
- The human HOX gene family. Acampora et al. Nucleic Acids Res. 1989 Dec 25;17(24):10385-402. PMID: 2574852.
- .A vertebrate gene related to orthodenticle contains a homeodomain of the bicoid class and demarcates anterior neuroectoderm in the gastrulating mouse embryo. Simmeone et al. EMBO J. 1993 Jul;12(7):2735-47.PMID: 8101484.

My subsequent publications are on the topic muscular dystrophy. Since 1992, I created a research team for the study of molecular genetics of muscular dystrophies. I served as principal investigator in these studies. We identified the first point mutation in the dystrophin gene, the delta-sarcoglycan genes and mutations that cause limb-girdle muscular dystrophy (LGMD2F), the gene that causes the cardiomyopathy of the BIO14.6 hamster, the gamma1 and gamma 2 syntrophin genes.

- Nigro V, Politano L, Nigro G, Romano SC, Molinari AM, Puca GA. Detection of a nonsense mutation in the dystrophin gene by multiple SSCP.Hum Mol Genet. 1992 Oct;1(7):517-20. PMID: 1307253.
- Nigro V, Piluso G, Belsito A, Politano L, Puca AA, Papparella S, Rossi E, Viglietto G, Esposito MG, Abbondanza C, Medici N, Molinari AM, Nigro G, Puca GA. Identification of a novel sarcoglycan gene at 5q33 encoding a sarcolemmal 35 kDa glycoprotein. Hum Mol Genet. 1996 Aug;5(8):1179-86. PMID: 8842738.
- Nigro V, de Sa Moreira E, Piluso G, Vainzof M, Belsito A, Politano L, Puca AA, Passos-Bueno MR, Zatz M. Autosomal recessive limb-girdle muscular dystrophy, LGMD2F, is caused by a mutation in the delta-sarcoglycan gene. Nat Genet. 1996 Oct;14(2):195-8.
- Nigro V, Okazaki Y, Belsito A, Piluso G, Matsuda Y, Politano L, Nigro G, Ventura C, Abbondanza C, Molinari AM, Acampora D, Nishimura M, Hayashizaki Y, Puca GA. Identification of the Syrian hamster cardiomyopathy gene. Hum Mol Genet. 1997 Apr;6(4):601-7. PMID: 9097966.
- Piluso G, Mirabella M, Ricci E, Belsito A, Abbondanza C, Servidei S, Puca AA, Tonali P, Puca GA, Nigro V. Gamma1- and gamma2-syntrophins, two novel dystrophin-binding proteins localized in neuronal cells. J Biol Chem. 2000 May 26;275(21):15851-60. PMID: 10747910.

In the following years, I became coordinator of mutation detection facilities and developed project on many other genes. In addition, I started gene therapy programs on the BIO14.6 hamster model and created a DKO model for cardiomyopathy. . I served as principal investigator in these studies.

- Tammaro A, Bracco A, Cozzolino S, Esposito M, Di Martino A, Savoia G, Zeuli L, Piluso G, Aurino S, Nigro V. Scanning for mutations of the ryanodine receptor (RYR1) gene by denaturing HPLC: detection of three novel malignant hyperthermia alleles. Clin Chem. 2003 May;49(5):761-8. PMID: 12709367.
- Saccone V, Palmieri M, Passamano L, Piluso G, Meroni G, Politano L, Nigro V. Mutations that impair interaction properties of TRIM32 associated with limb-girdle muscular dystrophy 2H. Hum Mutat. 2008 Feb;29(2):240-7. PMID: 1799454.
- Piluso G, D'Amico F, Saccone V, Bismuto E, Rotundo IL, Di Domenico M, Aurino S, Schwartz CE, Neri G, Nigro V. A Missense Mutation in CASK Causes FG Syndrome in an Italian Family. Am J Hum Genet. 2009 Feb;84(2):162-77. PMID: 19200522.

- Vitiello C, Faraso S, Sorrentino NC, Di Salvo G, Nusco E, Nigro G, Cutillo L, Calabrò R, Auricchio A, Nigro V. Disease Rescue and Increased Lifespan in a Model of Cardiomyopathy and Muscular Dystrophy by Combined AAV Treatments.PLoS ONE 2009 4(3): e5051. doi:10.1371/journal.pone.0005051 PMID: 19333401.
- Rotundo IL, Faraso S, De Leonibus E, Nigro G, Vitiello C, Lancioni A, Di Napoli D, Castaldo S, Russo V, Russo F, Piluso G, Auricchio A, Nigro V. Worsening of cardiomyopathy using deflazacort in an animal model rescued by gene therapy. PLoS One. 2011;6(9):e24729. PMID:21931833
- Lancioni A, Rotundo IL, Kobayashi YM, D'Orsi L, Aurino S, Nigro G, Piluso G, Acampora D, Cacciottolo M, Campbell KP, Nigro V.Combined deficiency of alpha and epsilon sarcoglycan disrupts the cardiac dystrophin complex. Hum Mol Genet. 2011 Dec 1;20(23):4644-54.PMID:21890494.

In 2011, I became coordinator of next generation sequencing facility at Tigem and in 2016 coordinator of the Telethon Undiagnosed Program:

Main publications from 2011 to 2022 on NGS and omics-approaches

- Variant-specific changes in RAC3 function disrupt corticogenesis in neurodevelopmental phenotypes. Scala M, et al. Brain 2022 PMID: 35851598
- Therapeutic homology-independent targeted integration in retina and liver. Tornabene P, et al. Nat Commun. 2022 PMID: 35414130
- De novo variants in ATP2B1 lead to neurodevelopmental delay. Rahimi MJ, et al. Am J Hum Genet. 2022 PMID: 35358416
- Bi-allelic variants in SPATA5L1 lead to intellectual disability, spastic-dystonic cerebral palsy, epilepsy, and hearing loss. Richard EM, et al. Am J Hum Genet. 2021 PMID: 34626583
- Solving patients with rare diseases through programmatic reanalysis of genome-phenome data. Matalonga L, Solve-RD Consortia. Eur J Hum Genet. 2021 PMID: 34075210
- Solve-RD: systematic pan-European data sharing and collaborative analysis to solve rare diseases. Solve-RD consortium. Eur J Hum Genet. 2021 PMID: 3407520
- Linked-Read Whole Genome Sequencing Solves a Double DMD Gene Rearrangement. Onore ME, et al. Genes (Basel). 2021 PMID: 33494189
- The position of nonsense mutations can predict the phenotype severity: A survey on the DMD gene. Torella A, et al. PLoS One. 2020 PMID: 32813700
- Genotype–phenotype correlations in recessive titinopathies. Savarese, M et al. Genetics in Medicine, 2020, PMID: 32778822
- New genotype-phenotype correlations in a large European cohort of patients with sarcoglycanopathy. Alonso-Pérez J, et al Brain. 2020 PMID: 32875335
- Congenital myopathy with hanging big toe due to homozygous myopalladin (MYPN) mutation. Merlini, et al Skeletal Muscle, 2019 PMID: 31133047
- Interpreting Genetic Variants in Titin in Patients with Muscle Disorders. Savarese M, et al. JAMA Neurol. 2018 PMID: 29435569
- An extremely severe phenotype attributed to WDR81 nonsense mutations. Cappuccio G, et al. Ann Neurol. 2017 PMID: 28972664
- Functional Antagonism between OTX2 and NANOG Specifies a Spectrum of Heterogeneous Identities in Embryonic Stem Cells. Acampora D et al. Stem Cell Reports. 2017: PMID: 29056334
- TBCE Mutations Cause Early-Onset Progressive Encephalopathy with Distal Spinal Muscular Atrophy. Sferra A, et al. Am J Hum Genet. 2016: PMID: 27666369
- Next-generation sequencing approaches for the diagnosis of skeletal muscle disorders. Nigro V, Savarese M. Curr Opin Neurol. 2016: PMID: 27454578
- The genetic basis of undiagnosed muscular dystrophies and myopathies: Results from 504 patients. Savarese M, et al. Neurology. 2016: PMID: 27281536
- MotorPlex provides accurate variant detection across large muscle genes both in single myopathic patients and in pools of DNA samples. Savarese M, et al. Acta Neuropathol Commun. 2014: PMID: 25214167
- Next-generation sequencing identifies transportin 3 as the causative gene for LGMD1F. Torella A, et al. PLoS One: PMID: 2366763

D. Research Support

Ongoing Research Support

2018-22 EU Research Funding H2020-HEALTH - SC1-2017-RTD: “SOLVE RD”, € 75.000
Telethon 2020-2023 “Telethon Undiagnosed Disease Program” €250.000/year
2023-2026 Ministero della Salute POS-T3-AN-04 Genoma mEdiciNa pERsonalizzatA €4.900.000
2023-2025 PNRR Rare diseases “Reduce the economic and social burden of inconclusive cases of genetic diseases in children (PI) € 1,000,000€

Completed

Telethon 1993-95 PI “Mutation in the dystrophin gene ..”, M£ 150
MURST 1995 ex 60%, M£ 20
Telethon 1996-98 PI “The delta-sarcoglycan gene ..”, M£ 200
MURST 1997, “Genetica molecolare .”, M£ 34
MURST 1999, PRIN, Resp. Unità B “Biopatologia ..”, M£ 192
Telethon 2000-03, PI “Identication of genes ..”, M£ 512
Telethon 2000-03, PI “Mutation detection..”, M£ 220

MURST 2001, PRIN, Resp. Unità B “Biopatologia della fibra muscolare sch.”, M£ 180
MIUR 2002, PRIN, Resp. Unità B “Identificazione di geni., € 77K
Progetto di Ricerca ex art.12 D.Lvo 502/92 2002 “Analisi molecolare ..”, € 52K
MIUR 2003, PRIN, Resp. Unità A “Genetica e genomica delle distrofie muscolari ”, € 120K
Telethon 2003-06, PI “Molecular bases of LGMD”, € 164K
Telethon 2003-06, PI “Mutation detection ..”, € 153K
MIUR 2004 PRIN, Resp. Unità B “Genetica e genomica .. ”, € 70K
Telethon-UILDM 2004-06, PI Identificazione delle mutazioni elusive. € 150KTelethon TIGEM 2006-2008,
“The TRIM family as a novel class of ubiquitin E3 ligases”, € 60.000/year
Telethon Services 2007-2010, Mutation detection facility, € 60.000/year
Progetto ordinario del Ministero della Salute 2008-2010, RF-MUL-2007-666195, “The role of myopalladin in human dilated cardiomyopathy and limb girdle muscular dystrophies €148.,800
FP7 Techgene 2009-2012, “Diagnosis of heterogeneous genetic diseases” € 175.650
Telethon TIGEM 2009-2011, exploratory projects, Gene therapy for cardiomyopathy and muscular dystrophy of the BIO 14.6 hamster, € 50.000/year
Telethon 2011-2013 “Clinical and laboratory network for LGMD diagnosis, in view of a national registry”, € 23.500
Telethon 2012-2015 “Genetic Diagnosis of italian LGMD Patients by NGS Technology”, € 240.800
Telethon 2012-2015“Myopalladin in Dilated Cardiomyopathy and Limb Girdle Muscular Dystrophy”, € 98.100
Telethon TVNNGSTELD 2011-2016 “Next Generation Sequencing Core” € 630.000
Fondazione Stella Maris 2012-2015 GR-2010-2317029 “Integrated “OMIC” Approach to explore molecular pathogenesis and clinical heterogeneity in facioscapulo-humeral muscular dystrophy”, € 48.000
Telethon 2015 “ Medicina Traslazionale in Oncologia: Dalla Ricerca alla Terapia PON01_02418” , € 100.000
Telethon 2016-2019 “Telethon Undiagnosed Disease Program” € 1.930.000,00
2018-22 EU Research Funding H2020-HEALTH - SC1-2017-RTD: “SOLVE RD”, € 75.000
Telethon 2020-2023 “Telethon Undiagnosed Disease Program” € 750.000
Ministero della Salute POS-T3-AN-04 Genoma mEdiciNa pERsonalizzatA €4.900.000

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV
In Italy, the reference is **art. 13 GDPR 679/16 Regolamento europeo sulla protezione dei dati**

Naples, January 31st 2023