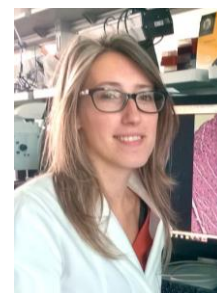


Alessandra GHIGO

Curriculum Vitae

Last update: December 2019

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Academic Positions:

- **30/04/2020:** Associate Professor of Applied Biology (05/F1 – BIO/13); University of Torino, Dept of Molecular Biotechnology and Health Sciences, Torino, Italy; *Research interests: PI3K signaling in Cardio-Oncology and in respiratory diseases.*
- **26/07/2017-26/07/2023:** National Scientific Habilitation (ASN) for Associate Professor (05/F1 – BIO/13)
- **01/12/2016- 29/04/2020:** Tenure-Track Assistant Professor of Applied Biology (RTD B; 05/F1 – BIO/13); University of Torino, Dept of Molecular Biotechnology and Health Sciences, Torino, Italy; *Research interests: PI3K signaling in Cardio-Oncology and in respiratory diseases.*
- **01/10/2014 – 30/11/2016:** Assistant Professor of Applied Biology (RTD A; 05/F1 – BIO/13); University of Torino, Dept of Molecular Biotechnology and Health Sciences, Torino, Italy; *Research interests: PI3K signaling in Cardio-Oncology and in respiratory diseases.*
- **2012-2014:** Postdoctoral Fellow; University of Torino, Dept. of Molecular Biotechnology and Health Sciences, Torino, Italy; *Research interest: Role of PI3K-C2 α in tumorigenesis.*
- **2008-2009:** Visiting Fellow; Université Paris-Sud 11, Laboratoire de Signalisation et Physiopathologie Cardiaque, Chatenay-Malabry, France; *Research interest: Role of PI3K γ scaffold activity in cardiac cAMP compartmentalization.*
- **2008-2012:** PhD student; University of Torino, Dept. of Genetics, Biology and Biochemistry, Torino, Italy; Supervisor: Prof. Emilio Hirsch

Education and training:

- **2012:** Ph.D. degree in Biomedical Science and Human Oncology; University of Torino, Italy; *Thesis title: "PI3K γ protects against catecholamine-induced ventricular arrhythmia through protein kinase A-mediated regulation of distinct Phosphodiesterases.*
- **2007:** Master's degree in Molecular Biotechnology (Final Mark: 110/110 summa cum laude and special mention); Faculty of Biotechnology, University of Torino, Italy; *Thesis title: "PI3K γ -dependent mechanisms regulating PDE3B activity".*
- **2005:** Bachelor's degree in biotechnology (Final Mark: 110/110 summa cum laude and special mention); Faculty of Biotechnology, University of Torino, Italy; *Thesis title: "Role of the phosphoinositide 3-kinase γ (PI3K γ) in the regulation of cardiac contractility".*
- **2002:** High School Degree (Final Mark 100/100); Scientific Lyceum GB Bodoni, Saluzzo, Cuneo, Italy

Teaching and Mentoring Activity:

- **2018-present:** In Vitro Diagnostics: Proteomics, Interactomics And Metabolomics Course, University of Torino, Master Program in Molecular Biotechnology (1 CFU)
- **2015-present:** Cellular Biology Course, University of Torino, Degree Course in Biotechnology (1 CFU)
- **2015-present:** Cellular Biology Course, University of Torino, Degree Course in Nursing (2 CFU)
- **2017-present:** Member of the PhD Committee - PhD program in Biomedical Science and Oncology, University of Torino
- **2012-present:** Supervision of 2 Postdoctoral Fellows (1 ongoing), 3 PhD students (2 ongoing) and 5 Master students (3 ongoing) at the Dept. of Molecular Biotechnology and Health Sciences, University of Torino, Italy

Activity within Scientific Societies and Organization of Meetings:

- **2020-2023:** Elected Council Member of the Italian Society for Cardiovascular Research (SIRC).
- **2020:** Member of the Organizing Committee of the 36th meeting of the European Section of the International Society for Heart Research" (ISHR-ES) – Torino, June 30th-July 3rd, 2020.

- **2017-2019:** Member of the Organizing Committee of the ISHR-ES Early Career Investigator (ECI) event at the ISHR World Meeting, Beijing, China (2019) and at the Meetings of the European Section of the ISHR (Amsterdam 2018 and Hamburg 2017).
- **2015-2019:** Elected Council Member of the European Section of the of the International Society for Heart Research (ISHR) and Representative of the Early Career Investigators of European ISHR
- **2016:** Member of the Organizing Committee of the 2016 Gordon Research Seminar on Cyclic Nucleotide Phosphodiesterases – Girona – Spain.

Research Grants:

- **2019:** Novel Disease Mechanisms for AstraZeneca Preclinical Compounds Award – *Project title: “Unraveling the mechanisms of doxorubicin-related heart failure with mTOR inhibitors”* - Granting Agency: Astrazeneca - \$ 10.000. Role: PI.
- **2016-2018:** Grants from Italian Cystic Fibrosis Research Foundation - *Project title: “Development of a PI3Ky-derived peptide as a novel F508del-CFTR potentiator”*, 01/09/2016 – 31/08/2018, € 110.000. Role: PI.
- **2015-2019:** Biomedical Research conducted by Young Investigators – *Project title: “Discovery of new PI3Kgamma scaffold activity disruptor via molecular dynamics, virtual screening and click chemistry to identify novel treatments for cystic fibrosis”* – Granting Agency: Cariplo Foundation, 2016-2018, € 250.000. Role: Co-PI.
- **2014-2017:** Excellent Young PI Grant – *Project title: “Understanding PI3Kgamma signaling in the pathogenesis of cancer-related cardiomyopathy: new therapeutic horizons for cancer patients”* – Granting Agency: Compagnia di San Paolo, 2015-2017, € 89.000. Role: PI.
- **2015-2019:** Ricerca Sanitaria Finalizzata – *Project title: “Pancreatic cancer therapy based on combination of DNA vaccination and PI3Kgamma inhibition”* – Granting Agency: Italian Ministry of Health, 2016-2019, € 40.000. Role: Co-PI.
- **2013:** International Society for Heart Research-European Section (ISHR-ES)/Servier Research Fellowship – *Project title: “Validating ArhGAP15 as a novel target for antioxidant therapy in heart failure”*- Granting Agency: Servier, € 20.000. Role: PI.
- **2012:** Triennial Fellowship from Fondazione Italiana per la Ricerca sul Cancro (FIRC). *Project title: “Analysis of PI3K-C2 alpha in growth factor signaling and tumorigenesis”* € 20.000.
- **2008:** EUGeneHeart Travel/Traning Grant for visiting INSERM U769, Chatenay Malabry, France. *Project title: “Study of PI3Ky-dependent cAMP dynamics”*. € 3.500.

Awards and Honors:

- **22 invited lectures at international and national meetings:** Frontiers in CardioVascular Biomedicine FCVB (2020); XXII meeting of the Italian Society for Cardiovascular Research (SIRC) (2019); European Society of Cardiology (ESC) Congress (2019); International Society for Heart Research (ISHR) XXIII World Meeting, Beijing, China (2019); Ultrasound imaging in cardiac and vascular medicine: from pre-clinical to clinical studies, ICGEB, Trieste, Italy (2019); Heart Failure Association Winter Research Meeting, Les Diablerets, Switzerland (2019); 50th Brazilian Congress of Pharmacology and Experimental Therapeutics, Ribeirao Preto, Brazil (2018); 9th Ascona International Workshop on Cardiomyocyte Biology, Ascona, Switzerland (2018); European Society of Cardiology (ESC) Congress, Barcelona, Spain (2017); 34th European Meeting of ISHR, Hamburg, Germany (2017); Annual meeting of the Working Groups on “Myocardial Function” and “Cellular Biology of the Heart” of ESC, Varenna, Italy (2017); 51st Annual Scientific Meeting of the European Society for Clinical Investigation, Genova, Italy (2017); Center for Heart Failure Research (CHFR) Workshop “Interactions and cross-talk between cardiac signaling pathways”, Oslo, Norway (2016); ESC Congress, Rome, Italy (2016); Frontiers in Cardiovasc. Biology Meeting, Florence, Italy (2016); Cyclic Nucleotide Phosphodiesterases Gordon Research Conference Girona, Spain (2016); XXII World Congress of the ISHR, Buenos Aires, Argentina (2016); Meeting of the ESC Working Groups on Myocardial Function and Cellular Biology of the Heart, Varenna, Italy (2015); ESC Congress, Barcelona, Spain (2014); Frontiers in Cardiovascular Biology Meeting, Barcelona, Spain (2014); Cyclic Nucleotide Phosphodiesterase Gordon Research Seminar, South Hadley, USA (2013); Translational Research Winter Meeting on Heart Failure, Les Diablerets, Switzerland (2009).
- **5 travel grants:** Travel grants from Italian Cystic Fibrosis Research Foundation to attend the European Cystic Fibrosis Society Basic Science Conference (2017-2016-2015); Travel grants from the European Section of ISHR to attend the World Congress (Buenos Aires, Argentina 2016 and San Diego, USA, 2013).

- 4 poster prizes: Heart Failure Winter Meeting, Les Diablerets, Switzerland (2015 and 2011); Gordon Research Conference on Cyclic Nucleotide Phosphodiesterases (South Hadley, USA 2014 and Lucca, Italy 2012)
- Other awards: Valsalva Award from the Italian Society for Cardiovascular Research -SIRC (2019); European Society of Cardiology - press interview "New molecule protects heart from toxic breast cancer drugs" (2015); Best Graduation Thesis Award (2009).
- Reviewer activity: Reviewer for the following scientific international journals: *Cardiovascular Research*, *Cell Death & Disease*, *European Journal of Heart Failure*, *Journal of Molecular and Cellular Cardiology*, *Frontiers in Pharmacology*, *Molecular Therapy*, *Plos One*, *European Journal of Pharmacology*, *Journal of Cellular and Molecular Medicine*, *BMC Pharmacology and Toxicology*, *International Journal of Cancer*, *American Journal of Physiology*, *Frontiers in Immunology*, *International Journal of Cardiology*, *Cellular Physiology and Biochemistry*, *Naunyn-Schmiedeberg's Archives of Pharmacology*, *Acta Pharmacologica Sinica*, *Chemical Science*, *IUBMB Life*
Reviewer for the following granting agencies: ANR - Agence Nationale de la Recherche; Czech Science Foundation.

Publications:

Total #54, 11 first or last authorship: 22; H index: 22, Citations: 1587 (source: Google Scholar)

Selected 5 publications:

***corresponding author**

- 1) Li M, Sala V, De Santis MC, Cimino J, Cappello P, Pianca N, Di Bona A, Margaria JP, Martini M, Lazzarini E, Pirozzi F, Rossi L, Franco I, Bornbaum J, Heger J, Rohrbach S, Perino A, Tocchetti CG, Lima BHF, Teixeira MM, Porporato PE, Schulz R, Angelini A, Sandri M, Ameri P, Sciarretta S, Lima-Júnior RCP, Mongillo M, Zaglia T, Morello F, Novelli F, Hirsch E, **Ghigo A***. *Phosphoinositide 3-Kinase Gamma Inhibition Protects from Anthracycline Cardiotoxicity and Reduces Tumor Growth*. **Circulation**. 2018 Jan 18. pii: CIRCULATIONAHA.117.030352.
- 2) Russo M, Guida F, Paparo L, Trinchese G, Aitoro R, Avagliano C, Fiordelisi A, Napolitano F, Mercurio V, Sala V, Li M, Sorriento D, Ciccarelli M, **Ghigo A**, Hirsch E, Bianco R, Iaccarino G, Abete P, Bonaduce D, Calignano A, Berni Canani R, Tocchetti CG. *The novel butyrate derivative phenylalanine-butyramide protects from doxorubicin-induced cardiotoxicity*. **Eur J Heart Fail**. 2019 Mar 6.
- 3) Vinchi F, De Franceschi L, **Ghigo A**, Townes T, Cimino J, Silengo L, Hirsch E, Altruda F, Tolosano E. *Hemopexin therapy improves cardiovascular function by preventing heme-induced endothelial toxicity in mouse models of hemolytic diseases*. **Circulation**. 2013 Mar 26;127(12):1317-29.
- 4) **Ghigo A**, Perino A., Mehel H., Zahradníková A. Jr, Morello F., Leroy J., Nikolaev V.O., Damilano F., Cimino J., De Luca E., Richter W., Westenbroek R., Catterall W.A., Zhang J., Yan C., Conti M., Gomez A.M., Vandecasteele G., Hirsch E., Fischmeister R. *Phosphoinositide 3-kinase γ protects against catecholamine-induced ventricular arrhythmia through protein kinase A-mediated regulation of distinct phosphodiesterases*. **Circulation**. 2012 Oct 23;126(17):2073-83.
- 5) Damilano F., Franco I., Perrino C., Schaefer K., Azzolino O., Carnevale D., Cifelli G., Carullo P., Ragona R., **Ghigo A**, Perino A., Lembo G., Hirsch E. *Distinct effects of leukocyte and cardiac phosphoinositide 3-kinase γ activity in pressure overload-induced cardiac failure*. **Circulation**. 2011 Feb 1;123(4):391-9. Epub 2011 Jan 17.

Other publications:

***corresponding author**

- 1) Brancaccio M, Pirozzi F, Hirsch E, **Ghigo A***. *Mechanisms underlying the cross-talk between heart and cancer*. **J Physiol**. 2019 Jul 6.
- 2) Li M, Russo M, Pirozzi F, Tocchetti CG, **Ghigo A***. *Autophagy and cancer therapy cardiotoxicity: From molecular mechanisms to therapeutic opportunities*. **Biochim Biophys Acta Mol Cell Res**. 2019 Jun 21
- 3) **Ghigo A***, Mika D. *cAMP/PKA signaling compartmentalization in cardiomyocytes: Lessons from FRET-based biosensors*. **J Mol Cell Cardiol**. 2019 Jun;131:112-121. Epub 2019 Apr 24. Review.
- 4) **Ghigo A***. *Cell-specific roles of p110 β in myocardial ischemia*. **Cardiovasc Res**. 2019 Feb 22.
- 5) Sala V, Li M, **Ghigo A***. *New avenues in cardio-oncology*. **Aging** (Albany NY). 2019 Feb 6.
- 6) Sala V, Murabito A, **Ghigo A***. *Inhaled Biologicals for the Treatment of Cystic Fibrosis*. **Recent Pat Inflamm Allergy Drug Discov**. 2018 Oct 11.
- 7) Zamboni V, Armentano M, Berto G, Ciruolo E, **Ghigo A**, Garzotto D, Umbach A, DiCunto F, Parmigiani E, Boido M, Vercelli A, El-Assawy N, Mauro A, Priano L, Ponzoni L, Murru L, Passafaro M, Hirsch E, Merlo GR. *Hyperactivity of Rac1-GTPase pathway impairs neuritogenesis of cortical neurons by altering actin dynamics*. **Sci Rep**. 2018 May 8;8(1):7254.
- 8) Wyart E, Reano S, Hsu MY, Longo DL, Li M, Hirsch E, Filigheddu N, **Ghigo A**, Riganti C, Porporato PE. *Metabolic Alterations in a Slow-Paced Model of Pancreatic Cancer-Induced Wasting*. **Oxid Med Cell Longev**. 2018 Feb 26;2018:6419805

- 9) Varricchi G, Ameri P, Cadeddu C, **Ghigo A**, Madonna R, Marone G, Mercurio V, Monte I, Novo G, Parrella P, Pirozzi F, Pecoraro A, Spallarossa P, Zito C, Mercurio G, Pagliaro P, Tocchetti CG. *Antineoplastic Drug-Induced Cardiotoxicity: A Redox Perspective*. **Front Physiol**. 2018 Mar 7;9:167.
- 10) Pirozzi F, Ren K, Murabito A, **Ghigo A***. *PI3K signaling in chronic obstructive pulmonary disease: mechanisms, targets, and therapy*. **Curr Med Chem**. 2018 Mar 20.
- 11) Duarte LJ, Chaves VC, Nascimento MVPDS, Calvete E, Li M, Ciraolo E, **Ghigo A**, Hirsch E, Simões CMO, Reginatto FH, Dalmarco EM. *Molecular mechanism of action of Pelargonidin-3-O-glucoside, the main anthocyanin responsible for the anti-inflammatory effect of strawberry fruits*. **Food Chem**. 2018 May 1;247:56-65.
- 12) Federti E, Matte A, **Ghigo A**, Andolfo I, James C, Siciliano A, Leboeuf C, Janin A, Manna F, Choi SY, Iolascon A, Beneduce E, Melisi D, Kim DW, Levi S, De Franceschi L. *Data demonstrating the role of peroxiredoxin 2 as important anti-oxidant system in lung homeostasis*. **Data Brief**. 2017 Sep 30;15:376-381.
- 13) Gulluni F, Martini M, De Santis MC, Campa CC, **Ghigo A**, Margaria JP, Ciraolo E, Franco I, Ala U, Annaratone L, Disalvatore D, Bertalot G, Viale G, Noatynska A, Compagno M, Sigismund S, Montemurro F, Thelen M, Fan F, Meraldi P, Marchiò C, Pece S, Sapino A, Chiarle R, Di Fiore PP, Hirsch E. *Mitotic Spindle Assembly and Genomic Stability in Breast Cancer Require PI3K-C2 α Scaffolding Function*. **Cancer Cell**. 2017 Oct 9;32(4):444-459.e7.
- 14) Federti E, Matté A, **Ghigo A**, Andolfo I, James C, Siciliano A, Leboeuf C, Janin A, Manna F, Choi SY, Iolascon A, Beneduce E, Melisi D, Kim DW, Levi S, De Franceschi L. *Peroxiredoxin-2 plays a pivotal role as multimodal cytoprotector in the early phase of pulmonary hypertension*. **Free Radic Biol Med**. 2017 Nov;112:376-386.
- 15) **Ghigo A**, Laffargue M, Li M, Hirsch E. *PI3K and Calcium Signaling in Cardiovascular Disease*. **Circ Res**. 2017 Jul 21;121(3):282-292. doi: 10.1161/CIRCRESAHA.117.310183. Review.
- 16) Li M, Murabito A, **Ghigo A**, Hirsch E. *PI3Ks in Diabetic Cardiomyopathy*. **J Cardiovasc Pharmacol**. 2017 Dec;70(6):422-429.
- 17) Alissafi T, Banos A, Boon L, Sparwasser T, **Ghigo A**, Wing K, Vassilopoulos D, Boumpas D, Chavakis T, Cadwell K, Verginis P. *Tregs restrain dendritic cell autophagy to ameliorate autoimmunity*. **J Clin Invest**. 2017 Jun 5.
- 18) Ingoglia G, Sag CM, Rex N, De Franceschi L, Vinchi F, Cimino J, Petrillo S, Wagner S, Kreitmeyer K, Silengo L, Altruda F, Maier LS, Hirsch E, **Ghigo A**, Tolosano E. *Data demonstrating the anti-oxidant role of hemopexin in the heart*. **Data Brief**. 2017 May 13;13:69-76. doi: 10.1016/j.dib.2017.05.026. eCollection 2017 Aug.
- 19) Sala V, Margaria JP, Murabito A, Morello F, **Ghigo A***, Hirsch E*. *Therapeutic Targeting of PDEs and PI3K in Heart Failure with Preserved Ejection Fraction (HFpEF)*. **Curr Heart Fail Rep**. 2017 Apr 27. doi: 10.1007/s11897-017-0331-2. Review.
- 20) Ingoglia G, Sag CM, Rex N, De Franceschi L, Vinchi F, Cimino J, Petrillo S, Wagner S, Kreitmeyer K, Silengo L, Altruda F, Maier LS, Hirsch E, **Ghigo A**, Tolosano E. *Hemopexin counteracts systolic dysfunction induced by heme-driven oxidative stress*. **Free Radic Biol Med**. 2017 Apr 8;108:452-464. doi: 10.1016/j.freeradbiomed.2017.04.003.
- 21) **Ghigo A**, Frati G, Sciarretta S. *A novel protective role for activating transcription factor 3 in the cardiac response to metabolic stress*. **Cardiovasc Res**. 2017 Feb;113(2):113-114. doi: 10.1093/cvr/cvw252.
- 22) Campa CC, Germena G, Ciraolo E, Copperi F, Sapienza A, Franco I, **Ghigo A**, Camporeale A, Di Savino A, Martini M, Perino A, Megens RT, Kurz AR, Scheiermann C, Sperandio M, Gamba A, Hirsch E. *Rac signal adaptation controls neutrophil mobilization from the bone marrow*. **Sci Signal**. 2016 Dec 20;9(459):ra124. doi: 10.1126/scisignal.aah5882.
- 23) Zamboni V, Armentano M, Sarò G, Ciraolo E, **Ghigo A**, Germena G, Umbach A, Valnegri P, Passafaro M, Carabelli V, Gavello D, Bianchi V, D'Adamo P, de Curtis I, El-Assawi N, Mauro A, Priano L, Ferri N, Hirsch E, Merlo GR. *Disruption of ArhGAP15 results in hyperactive Rac1, affects the architecture and function of hippocampal inhibitory neurons and causes cognitive deficits*. **Sci Rep**. 2016 Oct 7;6:34877
- 24) Mercurio V, Pirozzi F, Lazzarini E, Marone G, Rizzo P, Agnetti G, Tocchetti CG, **Ghigo A**, Ameri P. *Models of Heart Failure Based on the Cardiotoxicity of Anticancer Drugs*. **J Card Fail**. 2016 Jun;22(6):449-58.
- 25) **Ghigo A**, Li M, Hirsch E. *New signal transduction paradigms in anthracycline-induced cardiotoxicity*. **Biochim Biophys Acta**. 2016 Jul;1863(7 Pt B):1916-25.
- 26) **Ghigo A***, Li M. *Phosphoinositide 3-kinase: friend and foe in cardiovascular disease*. **Front Pharmacol**. 2015 Aug 13;6:169.
- 27) Zhang M, Prosser BL, Bamboye MA, Gondim AN, Santos CX, Martin D, **Ghigo A**, Perino A, Brewer AC, Ward CW, Hirsch E, Lederer WJ, Shah AM. *Contractile Function During Angiotensin-II Activation: Increased Nox2 Activity Modulates Cardiac Calcium Handling via Phospholamban Phosphorylation*. **J Am Coll Cardiol**. 2015 Jul 21;66(3):261-72.
- 28) Shymanets A, Prajwal, Vadas O, Czupalla C, LoPiccolo J, Brenowitz M, **Ghigo A**, Hirsch E, Krause E, Wetzker R, Williams RL, Harteneck C, Nürnberg B. *Different inhibition of G $\beta\gamma$ -stimulated class IB phosphoinositide 3-kinase (PI3K) variants by a monoclonal antibody*. Specific function of p101 as a G $\beta\gamma$ -dependent regulator of PI3K γ enzymatic activity. **Biochem J**. 2015 Jul 1;469(1):59-69.

- 29) Campa CC, Ciralo E, **Ghigo A**, Germena G, Hirsch E. *Crossroads of PI3K and Rac pathways*. **Small GTPases**. 2015;6(2):71-80.
- 30) Kalish BT, Matte A, Andolfo I, Iolascon A, Weinberg O, **Ghigo A**, Cimino J, Siciliano A, Hirsch E, Federti E, Puder M, Brugnara C, De Franceschi L. *Dietary ω -3 fatty acids protect against vasculopathy in a transgenic mouse model of sickle cell disease*. **Haematologica**. 2015 Jul;100(7):870-80.
- 31) D'Andrea I, Fardella V, Fardella S, Pallante F, **Ghigo A**, Iacobucci R, Maffei A, Hirsch E, Lembo G, Carnevale D. *Lack of kinase-independent activity of PI3K γ in locus coeruleus induces ADHD symptoms through increased CREB signaling*. **EMBO Mol Med**. 2015 Apr 16;7(7):904-17.
- 32) Perino A, Beretta M, Kilić A, **Ghigo A**, Carnevale D, Repetto IE, Braccini L, Longo D, Liebig-Gonglach M, Zaglia T, Iacobucci R, Mongillo M, Wetzker R, Bauer M, Aime S, Vercelli A, Lembo G, Pfeifer A, Hirsch E. *Combined inhibition of PI3K β and PI3K γ reduces fat mass by enhancing α -MSH-dependent sympathetic drive*. **Sci Signal**. 2014 Nov 18;7(352):ra110.
- 33) Hirsch E, **Ghigo A**. *Elastin degradation and ensuing inflammation as emerging keys to atherosclerosis*. **Cardiovasc Res**. 2014 Apr 1;102(1):1-2. doi: 10.1093/cvr/cvu038. Epub 2014 Feb 11.
- 34) **Ghigo A**, Franco I, Morello F, Hirsch E. *Myocyte signalling in leucocyte recruitment to the heart*. **Cardiovasc Res**. 2014 Feb 25.
- 35) Hirsch E, Ciralo E, Franco I, **Ghigo A**, Martini M. *PI3K in cancer-stroma interactions: bad in seed and ugly in soil*. **Oncogene**. 2013 Jul 29.
- 36) **Ghigo A**, Morello F, Perino A, Hirsch E. *Therapeutic applications of PI3K inhibitors in cardiovascular diseases*. **Future Med Chem**. 2013 Mar;5(4):479-92.
- 37) Suk H.Y., Zhou C., Yang T.T., Zhu H., Yu R.Y., Olabisi O., Yang X., Brancho D., Kim J.Y., Scherer P.E., Frank P.G., Lisanti M.P., Calvert J.W., Lefer D.J., Molkentin J.D., **Ghigo A**, Hirsch E., Jin J., Chow C.W. *Ablation of Calcineurin β Reveals Hyperlipidemia and Signaling Crosstalks with Phosphodiesterases*. **J Biol Chem**. 2012 Dec 20.
- 38) **Ghigo A**, Perino A., Hirsch E. *Phosphoinositides and cardiovascular diseases*. **Curr Top Microbiol Immunol**. 2012;362:43-60.
- 39) Perino A., **Ghigo A**., Scott J.D., Hirsch E. *Anchoring proteins as regulators of signaling pathways*. **Circ Res**. 2012 Aug 3;111(4):482-92.
- 40) Zhang M, Perino A, **Ghigo A**, Hirsch E, Shah AM. *NADPH oxidases in heart failure: poachers or gamekeepers?* **Antioxid Redox Signal**. 2013 Mar 20;18(9):1024-41. Epub 2012 Aug 27.
- 41) **Ghigo A**, Morello F., Perino A., Hirsch E. *Phosphoinositide 3-kinases in health and disease*. **Subcell Biochem**. 2012;58:183-213. 21.
- 42) Perino A., **Ghigo A**, Hirsch E. *Leukocyte and Cardiac Phosphoinositide 3-Kinase γ Activity in Pressure Overload-Induced Cardiac Failure*. **Trends Cardiovasc Med**. 2010 Nov;20(8):273-6.
- 43) **Ghigo A**, Morello F., Perino A., Damilano F., Hirsch E. *Specific PI3K Isoform Modulation in Heart Failure: Lessons from Transgenic Mice*. **Curr Heart Fail Rep**. 2011 Apr 26.
- 44) Perino A., **Ghigo A**., Ferrero E., Morello F., Santulli G., Baillie G.S., Damilano F., Dunlop A.J., Pawson C., Walser R., Levi R., Altruda F., Silengo L., Langeberg L.K., Neubauer G., Heymans S., Lembo G., Wymann M.P., Wetzker R., Houslay M.D., Iaccarino G., Scott J.D., Hirsch E. *Integrating cardiac PIP3 and cAMP signaling through a PKA anchoring function of p110 γ* . **Mol Cell**. 2011 Apr 8;42(1):84-95.
- 45) Fanelli V., Puntorieri V., Assenzio B., Martin E.L., Elia V., Bosco M., Delsedime L., Del Sorbo L., Ferrari A., Italiano S., **Ghigo A**., Slutsky A.S., Hirsch E., Ranieri V.M. *Pulmonary-derived phosphoinositide 3-kinase gamma (PI3K γ) contributes to ventilator-induced lung injury and edema*. **Intensive Care Med**. 2010 Nov;36(11):1935-45. Epub 2010 Aug 19.
- 46) **Ghigo A**, Damilano F., Braccini L., Hirsch E. *PI3K inhibition in inflammation: Toward tailored therapies for specific diseases*. **Bioessays**. 2010 Mar;32(3):185-96.
- 47) Hirsch E., Ciralo E., **Ghigo A**., Costa C. *Taming the PI3K team to hold inflammation and cancer at bay*. **Pharmacology & Therapeutics** 2008, 118:192-205.
- 48) **Ghigo A**. and Hirsch E. *Isoform selective phosphoinositide 3-kinase γ and δ inhibitors and their therapeutic potential*. **Recent Patents on Inflammation & Allergy Drug Discovery** 2008
- 49) Perino A., **Ghigo A**., Damilano F., Hirsch E. *Identification of the macromolecular complex responsible for PI3K γ -dependent regulation of cAMP levels*. **Biochem Soc Trans**. 2006 Aug;34(Pt 4):502-3.

Patents:

Patent n° PCT/IB2015/059880 - WO/2016/103176 - Owner: Kither Biotech Srl - Inventors: Emilio Hirsch, Alessandra Ghigo – Title: *Novel PI3K γ inhibitor peptide for treatment of respiratory system diseases*. Alessandra Ghigo is co-founder of Kither Biotech Srl – an academic spin-off developing PI3K inhibitors. <http://kitherbiotech.com/it>

Book Chapters:

Ghigo A, Pirozzi F, Li M, Hirsch E. *Chatting Second Messengers: PIP3 and cAMP*. Microdomains in the Cardiovascular System Cardiac and Vascular Biology. Springer (2017) pp 85-95.