

# Discovery and Structure–Activity Relationship of a B<sub>2</sub> Receptor Antagonist that Modulates Vascular and Cardiac Functions

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Citation Report

#	ARTICLE	IF	CITATIONS
1	Biased Agonism of G Protein-Coupled Receptors: A Potential Therapeutic Strategy of Cardiovascular Diseases. <i>Cardiovascular Pharmacology: Open Access</i> , 2016, 5, .	0.1	0
2	Elabela/Toddler Is an Endogenous Agonist of the Apelin APJ Receptor in the Adult Cardiovascular System, and Exogenous Administration of the Peptide Compensates for the Downregulation of Its Expression in Pulmonary Arterial Hypertension. <i>Circulation</i> , 2017, 135, 1160-1173.	1.6	183
3	Apela exhibits isoform- and headgroup-dependent modulation of micelle binding, peptide conformation and dynamics. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2017, 1859, 767-778.	1.4	24
4	Structural Basis for Apelin Control of the Human Apelin Receptor. <i>Structure</i> , 2017, 25, 858-866.e4.	1.6	96
5	ELABELA and an ELABELA Fragment Protect against AKI. <i>Journal of the American Society of Nephrology: JASN</i> , 2017, 28, 2694-2707.	3.0	101
6	Bioactivity of the putative apelin proprotein expands the repertoire of apelin receptor ligands. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2017, 1861, 1901-1912.	1.1	26
7	Structure-activity relationship of novel macrocyclic biased apelin receptor agonists. <i>Organic and Biomolecular Chemistry</i> , 2017, 15, 449-458.	1.5	27
8	ELABELA Improves Cardio-Renal Outcome in Fatal Experimental Septic Shock. <i>Critical Care Medicine</i> , 2017, 45, e1139-e1148.	0.4	49
9	Apelin conformational and binding equilibria upon micelle interaction primarily depend on membrane-mimetic headgroup. <i>Scientific Reports</i> , 2017, 7, 15433.	1.6	11
10	Elabela, a new endogenous ligand of APJ, functions in embryos and adults organisms. <i>Acta Biochimica Et Biophysica Sinica</i> , 2017, 49, 378-381.	0.9	15
11	Targeting the apelin pathway as a novel therapeutic approach for cardiovascular diseases. <i>Biochimica Et Biophysica Acta - Molecular Basis of Disease</i> , 2017, 1863, 1942-1950.	1.8	81
12	Apelinergic System Structure and Function. , 2017, 8, 407-450.		68
13	Role of the Vasopressin/Apelin Balance and Potential Use of Metabolically Stable Apelin Analogs in Water Metabolism Disorders. <i>Frontiers in Endocrinology</i> , 2017, 8, 120.	1.5	27
14	Expression and functional implications of the renal apelinergic system in rodents. <i>PLoS ONE</i> , 2017, 12, e0183094.	1.1	17
15	A Systematic Exploration of Macrocyclization in Apelin-13: Impact on Binding, Signaling, Stability, and Cardiovascular Effects. <i>Journal of Medicinal Chemistry</i> , 2018, 61, 2266-2277.	2.9	30
16	Elabela-APJ axis contributes to embryonic development and prevents pre-eclampsia in pregnancy. <i>Acta Biochimica Et Biophysica Sinica</i> , 2018, 50, 319-321.	0.9	8
17	Biological functions of Elabela, a novel endogenous ligand of APJ receptor. <i>Journal of Cellular Physiology</i> , 2018, 233, 6472-6482.	2.0	53
18	The apelinergic system as an alternative to catecholamines in low-output septic shock. <i>Critical Care</i> , 2018, 22, 10.	2.5	17

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19	The hypotensive effect of activated apelin receptor is correlated with $\hat{I}^2$ -arrestin recruitment. <i>Pharmacological Research</i> , 2018, 131, 7-16.	3.1	23
20	Elabela, a newly discovered APJ ligand: Similarities and differences with Apelin. <i>Peptides</i> , 2018, 109, 23-32.	1.2	45
21	Vascular effects of apelin: Mechanisms and therapeutic potential. , 2018, 190, 139-147.		106
22	ELABELA/APELA Levels Are Not Decreased in the Maternal Circulation or Placenta among Women with Preeclampsia. <i>American Journal of Pathology</i> , 2018, 188, 1749-1753.	1.9	36
23	Targeting drugs to APJ receptor: From signaling to pathophysiological effects. <i>Journal of Cellular Physiology</i> , 2019, 234, 61-74.	2.0	28
24	Bicelle composition-dependent modulation of phospholipid dynamics by apelin peptides. <i>Biochemistry and Cell Biology</i> , 2019, 97, 325-332.	0.9	3
25	Is ELABELA a reliable biomarker for hypertensive disorders of pregnancy?. <i>Pregnancy Hypertension</i> , 2019, 17, 226-232.	0.6	18
26	The apelinergic system: a perspective on challenges and opportunities in cardiovascular and metabolic disorders. <i>Annals of the New York Academy of Sciences</i> , 2019, 1455, 12-33.	1.8	46
27	Recombinant Fc-Elabela fusion protein has extended plasma half-life and mitigates post-infarct heart dysfunction in rats. <i>International Journal of Cardiology</i> , 2019, 292, 180-187.	0.8	27
28	International Union of Basic and Clinical Pharmacology. CVII. Structure and Pharmacology of the Apelin Receptor with a Recommendation that Elabela/Toddler Is a Second Endogenous Peptide Ligand. <i>Pharmacological Reviews</i> , 2019, 71, 467-502.	7.1	64
29	Development and validation of an LC-MS/MS method for detection and quantification of in vivo derived metabolites of [Pyr1]apelin-13 in humans. <i>Scientific Reports</i> , 2019, 9, 19934.	1.6	14
30	Increased Elabela levels in the acute ST segment elevation myocardial infarction patients. <i>Medicine (United States)</i> , 2019, 98, e17645.	0.4	21
31	Apelin and Elabela/Toddler; double ligands for APJ/Apelin receptor in heart development, physiology, and pathology. <i>Peptides</i> , 2019, 111, 62-70.	1.2	65
32	ELABELA (ELA) Peptide Exerts Cardioprotection Against Myocardial Infarction by Targeting Oxidative Stress and the Improvement of Heart Function. <i>International Journal of Peptide Research and Therapeutics</i> , 2019, 25, 613-621.	0.9	21
33	Apelins, ELABELA, and their derivatives: Peptidic regulators of the cardiovascular system and beyond. <i>Peptide Science</i> , 2019, 111, e24064.	1.0	7
34	Declined circulating Elabela levels in patients with essential hypertension and its association with impaired vascular function: A preliminary study. <i>Clinical and Experimental Hypertension</i> , 2020, 42, 239-243.	0.5	35
35	Apelin peptides linked to anti- $\epsilon$ -serum albumin domain antibodies retain affinity in vitro and are efficacious receptor agonists in vivo. <i>Basic and Clinical Pharmacology and Toxicology</i> , 2020, 126, 96-103.	1.2	14
36	ELABELA plasma concentrations are increased in women with late-onset preeclampsia. <i>Journal of Maternal-Fetal and Neonatal Medicine</i> , 2020, 33, 5-15.	0.7	37

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37	Exacerbated pressor and sympathoexcitatory effects of central Elabela in spontaneously hypertensive rats. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2020, 318, H124-H134.	1.5	14
38	Apelin Receptor Signaling During Mesoderm Development. <i>Advances in Experimental Medicine and Biology</i> , 2020, 1298, 1-15.	0.8	3
39	Serum elabela and apelin levels during different stages of chronic kidney disease. <i>Renal Failure</i> , 2020, 42, 667-672.	0.8	9
40	PEGylated and Acylated Elabela Analogues Show Enhanced Receptor Binding, Prolonged Stability, and Remedy of Acute Kidney Injury. <i>Journal of Medicinal Chemistry</i> , 2020, 63, 16028-16042.	2.9	8
41	Individual phosphorylation sites at the C-terminus of the apelin receptor play different roles in signal transduction. <i>Redox Biology</i> , 2020, 36, 101629.	3.9	27
42	The Elabela-APJ axis: a promising therapeutic target for heart failure. <i>Heart Failure Reviews</i> , 2021, 26, 1249-1258.	1.7	40
43	Elabela/Toddler and apelin bind differently to the apelin receptor. <i>FASEB Journal</i> , 2020, 34, 7989-8000.	0.2	18
44	Apelin/Elabela-APJ: a novel therapeutic target in the cardiovascular system. <i>Annals of Translational Medicine</i> , 2020, 8, 243-243.	0.7	66
45	The Elabela in hypertension, cardiovascular disease, renal disease, and preeclampsia: an update. <i>Journal of Hypertension</i> , 2021, 39, 12-22.	0.3	22
46	Structure-Activity Relationship and Bioactivity of Short Analogues of ELABELA as Agonists of the Apelin Receptor. <i>Journal of Medicinal Chemistry</i> , 2021, 64, 602-615.	2.9	9
47	The Role of Apelin/Apelin Receptor in Energy Metabolism and Water Homeostasis: A Comprehensive Narrative Review. <i>Frontiers in Physiology</i> , 2021, 12, 632886.	1.3	36
48	Constraining the Side Chain of C-Terminal Amino Acids in Apelin-13 Greatly Increases Affinity, Modulates Signaling, and Improves the Pharmacokinetic Profile. <i>Journal of Medicinal Chemistry</i> , 2021, 64, 5345-5364.	2.9	10
49	Lower Plasma Elabela Levels in Hypertensive Patients With Heart Failure Predict the Occurrence of Major Adverse Cardiac Events: A Preliminary Study. <i>Frontiers in Cardiovascular Medicine</i> , 2021, 8, 638468.	1.1	8
50	The Effects of Apelin and Elabela Ligands on Apelin Receptor Distinct Signaling Profiles. <i>Frontiers in Pharmacology</i> , 2021, 12, 630548.	1.6	12
51	The emerging role of the apelinergic system in kidney physiology and disease. <i>Nephrology Dialysis Transplantation</i> , 2022, 37, 2314-2326.	0.4	8
52	Éric Marsault (1971-2021): A Legacy through the Prism of Relationship Chemistry. <i>Journal of Medicinal Chemistry</i> , 2021, 64, 5221-5224.	2.9	5
53	Éi-biased apelin analog protects against isoproterenol-induced myocardial dysfunction in rats. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , 2021, 320, H1646-H1656.	1.5	6
54	Critical APJ receptor residues in extracellular domains that influence effector selectivity. <i>FEBS Journal</i> , 2021, 288, 6543-6562.	2.2	4

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55	Elabela Protects Spontaneously Hypertensive Rats From Hypertension and Cardiorenal Dysfunctions Exacerbated by Dietary High-Salt Intake. <i>Frontiers in Pharmacology</i> , 2021, 12, 709467.	1.6	9
56	Elabela prevents angiotensin II-induced apoptosis and inflammation in rat aortic adventitial fibroblasts via the activation of FGF21-ACE2 signaling. <i>Journal of Molecular Histology</i> , 2021, 52, 905-918.	1.0	10
57	Elabela/toddler: New peptide with a promising future in cancer diagnostic and therapy. <i>Biochimica Et Biophysica Acta - Molecular Cell Research</i> , 2021, 1868, 119065.	1.9	10
58	The therapeutic potential of apelin in kidney disease. <i>Nature Reviews Nephrology</i> , 2021, 17, 840-853.	4.1	39
59	Enhancing the anticancer efficacy of a LL-37 peptide fragment analog using peptide-linked PLGA conjugate micelles in tumor cells. <i>International Journal of Pharmaceutics</i> , 2021, 606, 120891.	2.6	12
60	Plasma Levels of Apelinergic System Components in Patients with Chronic and Acute Coronary Syndromes—A Pilot Study. <i>Journal of Clinical Medicine</i> , 2021, 10, 4420.	1.0	5
61	Circulating levels of Elabela in pregnant women complicated with intrauterine growth restriction. <i>Journal of Gynecology Obstetrics and Human Reproduction</i> , 2021, 50, 102127.	0.6	15
62	In vitro metabolism of synthetic Elabela/Toddler (ELA-32) peptide in human plasma and kidney homogenates analyzed with mass spectrometry and validation of endogenous peptide quantification in tissues by ELISA. <i>Peptides</i> , 2021, 145, 170642.	1.2	2
63	Pharmacologic and interventional paradigms of diuretic resistance in congestive heart failure: a narrative review. <i>International Urology and Nephrology</i> , 2021, 53, 1839-1849.	0.6	6
64	Maternal circulating concentrations of soluble Fas and Elabela in early- and late-onset preeclampsia. <i>Journal of Maternal-Fetal and Neonatal Medicine</i> , 2020, , 1-14.	0.7	14
65	Essential Role of the ELABELA-APJ Signaling Pathway in Cardiovascular System Development and Diseases. <i>Journal of Cardiovascular Pharmacology</i> , 2020, 75, 284-291.	0.8	13
66	The Apelin receptor enhances Nodal/TGF $\beta$ 2 signaling to ensure proper cardiac development. <i>ELife</i> , 2016, 5, .	2.8	34
67	Targeting the elabela/apelin-“apelin receptor axis as a novel therapeutic approach for hypertension. <i>Chinese Medical Journal</i> , 2021, Publish Ahead of Print, .	0.9	7
68	APELÄ°NERJÄ°K SÄ°STEM ve MÄ°YOKARDÄ°YAL KONTRAKTÄ°LÄ°TE. <i>UludaÄ° Üneniversitesi TÄ°p FakÄ°ltesi Dergisi</i> , 2020, , .	0.2	0
69	Effect of Fc-Elabela-21 on renal ischemia/reperfusion injury in mice: Mediation of anti-apoptotic effect via Akt phosphorylation. <i>Peptides</i> , 2022, 147, 170682.	1.2	9
70	Elabela alleviates myocardial ischemia reperfusion-induced apoptosis, fibrosis and mitochondrial dysfunction through PI3K/AKT signaling. <i>American Journal of Translational Research (discontinued)</i> , 2020, 12, 4467-4477.	0.0	13
71	Plasma levels of Elabela are associated with coronary angiographic severity in patients with acute coronary syndrome. <i>Journal of Geriatric Cardiology</i> , 2020, 17, 674-679.	0.2	3
72	Apelin-13 in septic shock: effective in supporting hemodynamics in sheep but compromised by enzymatic breakdown in patients. <i>Scientific Reports</i> , 2021, 11, 22770.	1.6	5

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73	Apelin and Vasopressin: The Yin and Yang of Water Balance. <i>Frontiers in Endocrinology</i> , 2021, 12, 735515.	1.5	9
74	Size-Reduced Macrocyclic Analogues of [Pyr <sup>1</sup> ]-apelin-13 Showing Negative G <sub>12</sub> Bias Still Produce Prolonged Cardiac Effects. <i>Journal of Medicinal Chemistry</i> , 2022, 65, 531-551.	2.9	7
75	Serum Elabela level is related to endoscopic activity index in patients with active ulcerative colitis. <i>Irish Journal of Medical Science</i> , 2022, , 1.	0.8	0
77	Chronic infusion of ELABELA alleviates vascular remodeling in spontaneously hypertensive rats via anti-inflammatory, anti-oxidative and anti-proliferative effects. <i>Acta Pharmacologica Sinica</i> , 2022, 43, 2573-2584.	2.8	13
78	Elabela ameliorates doxorubicin-induced cardiotoxicity by promoting autophagic flux through TFEB pathway. <i>Pharmacological Research</i> , 2022, 178, 106186.	3.1	24
79	Montelukast, cysteinyl leukotriene receptor 1 antagonist, inhibits cardiac fibrosis by activating APJ. <i>European Journal of Pharmacology</i> , 2022, 923, 174892.	1.7	6
80	Apelin, APJ, and ELABELA: Role in Placental Function, Pregnancy, and Foetal Development—An Overview. <i>Cells</i> , 2022, 11, 99.	1.8	22
82	Elabela Attenuates the TGF- $\beta$ 1-Induced Epithelial-Mesenchymal Transition of Peritoneal Mesothelial Cells in Patients Receiving Peritoneal Dialysis. <i>Frontiers in Pharmacology</i> , 0, 13, .	1.6	2
83	Structural insight into apelin receptor-G protein stoichiometry. <i>Nature Structural and Molecular Biology</i> , 2022, 29, 688-697.	3.6	14
84	The application of a drug—poly(lactic-co-glycolic acid) hybrid micellar system for drug delivery. , 2022, , 497-513.		0
85	Elabela Peptide: An Emerging Target in Therapeutics. <i>Current Drug Targets</i> , 2022, 23, 1304-1318.	1.0	6
86	A Review of the Roles of Apelin and ELABELA Peptide Ligands in Cardiovascular Disease, Including Heart Failure and Hypertension. <i>Medical Science Monitor</i> , 0, 28, .	0.5	4
87	Distribution, Function, and Expression of the Apelinergic System in the Healthy and Diseased Mammalian Brain. <i>Genes</i> , 2022, 13, 2172.	1.0	4
88	The Apelinergic System: Apelin, ELABELA, and APJ Action on Cell Apoptosis: Anti-Apoptotic or Pro-Apoptotic Effect?. <i>Cells</i> , 2023, 12, 150.	1.8	3
89	Signaling Modulation via Minimal C-Terminal Modifications of Apelin-13. <i>ACS Pharmacology and Translational Science</i> , 2023, 6, 290-305.	2.5	2
90	Structure—function relationship and physiological role of apelin and its G protein coupled receptor. <i>Biophysical Reviews</i> , 2023, 15, 127-143.	1.5	6
91	Expanding the apelin receptor pharmacological toolbox using novel fluorescent ligands. <i>Frontiers in Endocrinology</i> , 0, 14, .	1.5	0
92	Apelin/ELABELA-APJ system in cardiac hypertrophy: Regulatory mechanisms and therapeutic potential. <i>European Journal of Pharmacology</i> , 2023, 949, 175727.	1.7	1

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