

ENDOCRINOLOGY & METABOLISM



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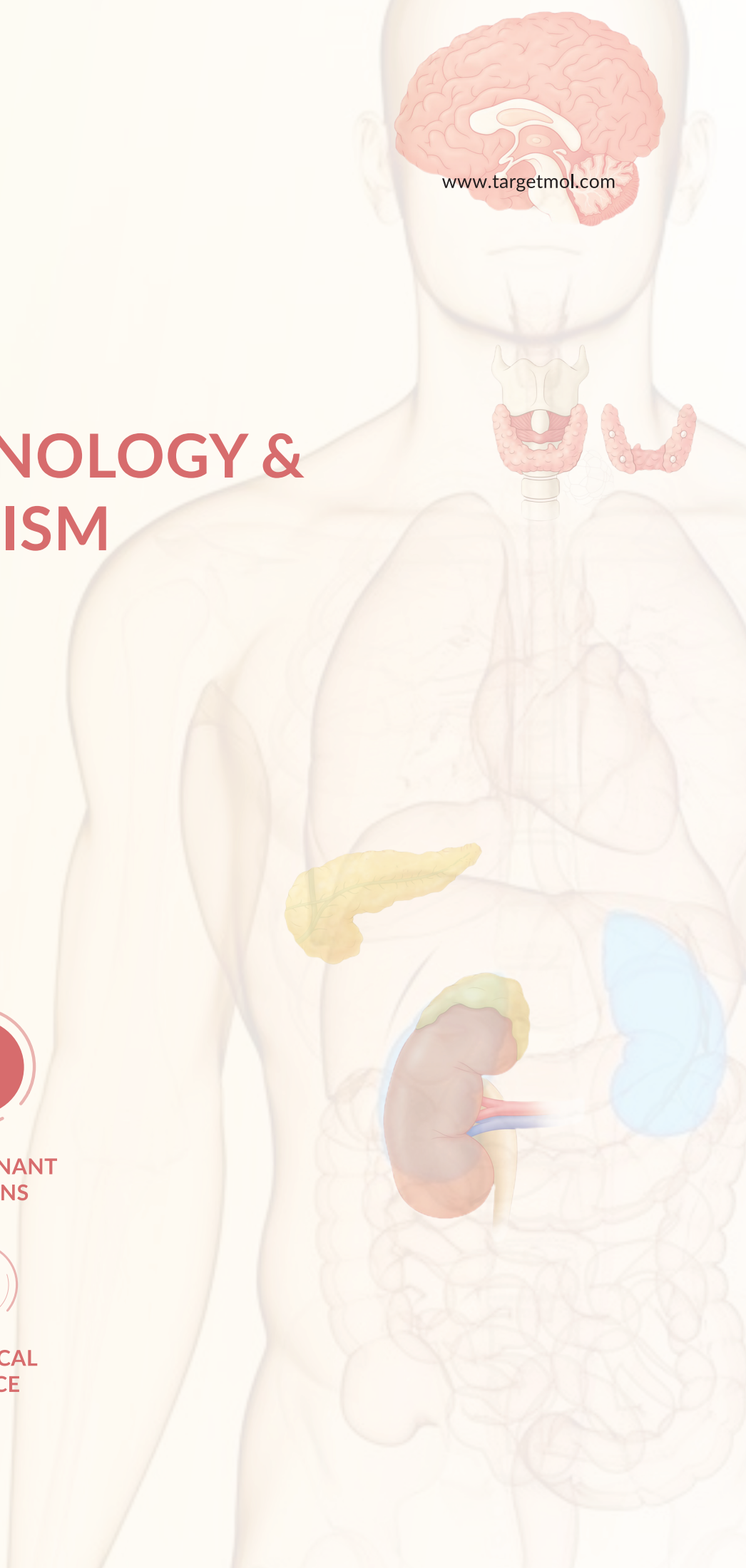
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Endocrinology & Metabolism

Endocrine disorders or metabolic abnormalities caused by factors such as genetics, unhealthy lifestyle habits, medication use, or autoimmune diseases (as shown in Fig 1) directly increase the risk of conditions such as obesity, hypertension, atherosclerosis, diabetes, hyperuricemia, polycystic ovary syndrome, and fatty liver disease ^[1]. The endocrine and metabolic systems work in conjunction to coordinate the body's energy balance, metabolic processes, and overall physiological state. Dysregulation in either system can impact the other, leading to diseases or metabolic disorders. Therefore, research related to endocrinology and metabolism is a vital component of biomedical studies and a prerequisite for developing treatments for human diseases ^[2].

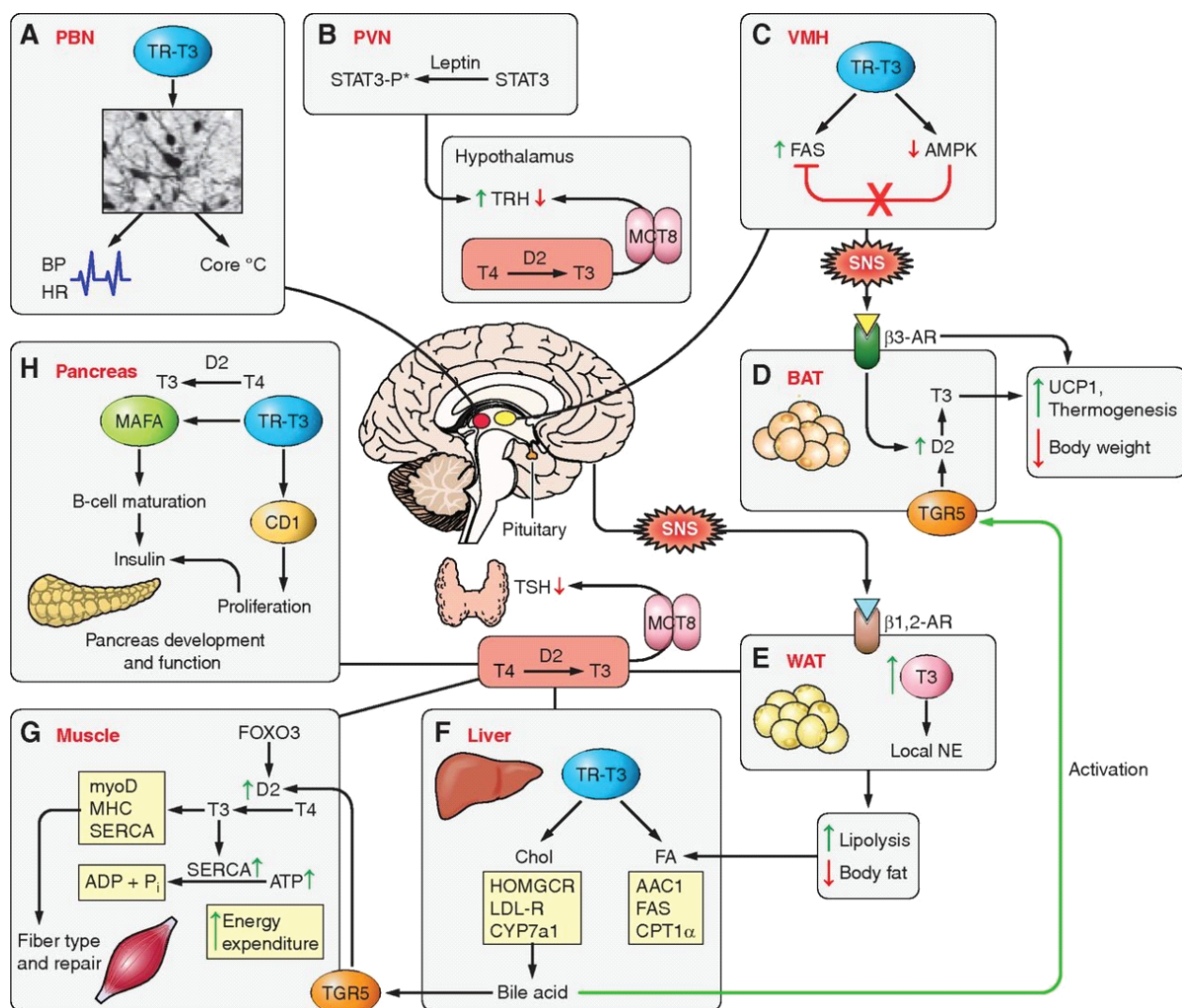


Fig 1: Overview of sites of thyroid hormone regulation of metabolism^[3]

TargetMol, as a professional one-stop platform for drug discovery, offers a variety of products related to endocrinology and metabolism:

Active Compounds

Includes small molecule compounds that can be used for studies on glucose metabolism, lipid metabolism mechanisms, and the induction of metabolic disease animal models.

Compound Libraries

Comprises collections of compounds related to neurohormonal regulation and metabolic syndrome, suitable for high-throughput and high-content screening. These libraries can be used for cancer drug screening, research on endocrine disorder mechanisms, and other related fields. TargetMol also provides library customization service to meet different experimental needs.

Recombinant Proteins

Includes products related to diabetes and its complications, which can be used for organoid culture, pathogenesis research, and more. These products cover various species, tags, and expression systems, offering reliable safety and stability to meet diverse experimental requirements.

Research on Endocrinology & Metabolism

- 1. Obesity and Metabolic Syndrome:** Obesity and metabolic syndrome have become global health challenges. The pathogenesis of obesity and metabolic syndrome includes mechanisms such as energy metabolism regulation, insulin resistance, and adipose tissue inflammation. Research is focused on developing new therapeutic strategies and drugs to address these conditions.
- 2. Diabetes:** Diabetes is a chronic metabolic disease categorized into type 1 diabetes and type 2 diabetes. Researchers are dedicated to understanding changes in insulin secretion and action mechanisms, as well as molecular mechanisms related to blood sugar regulation and insulin resistance. Efforts are underway to discover new treatments, such as insulin replacement therapies and insulin sensitizers. Common research areas include precision classification and diagnosis of diabetes; early diagnosis, intervention, and pathogenesis of chronic diabetic complications; basic and clinical studies on intensive insulin therapy for type 2 diabetes; management strategies for gestational diabetes disorders; research on adipokines and diabetes-related chronic complications; and studies on diabetes and panvascular disease in both clinical and foundational contexts.
- 3. Thyroid Function and Diseases:** Thyroid hormones play a vital role in body metabolism, and thyroid dysfunction can lead to a variety of diseases, including hyperthyroidism and hypothyroidism. Researchers are focused on understanding the synthesis, secretion, and action mechanisms of thyroid hormones, as well as the molecular mechanisms and treatment approaches for related diseases.
- 4. Sex Hormones and Reproductive Health:** Androgens and estrogens play a critical role in reproductive health and the development of sexual characteristics. Researchers focus on the mechanisms by which sex hormones act in the reproductive system, nervous system, and other organs, as well as treatments for hormone-related diseases.
- 5. Biological Clocks and Metabolic Rhythms:** Biological clocks regulate the body's metabolic rhythms, influencing physiological processes such as energy metabolism and appetite regulation. Researchers study the interactions between biological clocks and metabolism, the impact of disruptions on health, and strategies to improve metabolic health by adjusting the biological clock.
- 6. Neuroendocrine Regulation:** The nervous system and endocrine system interact to regulate metabolism and physiological functions in the body. Researchers focus on the molecular mechanisms of neuroendocrine regulation and neuroendocrine pathways associated with metabolic diseases such as obesity and diabetes.
- 7. Animal Models, Molecular Mechanisms, and Drug Interventions in Metabolic Liver Diseases.**
- 8. Pathogenesis of Atherosclerosis and the Research and Development of Natural Cardiovascular Drugs.**
- 9. The Role of Receptor Ion Channels in the Pathogenesis and Intervention of Endocrine and Metabolic Diseases.**

Diabetes and Glucose Metabolism Disorders

Diabetes is classified into type 1 diabetes and type 2 diabetes. It primarily arises due to autoimmune destruction of pancreatic beta cells and insulin resistance, leading to insufficient insulin secretion, which in turn causes diabetes and multiple chronic complications. Research focusing on pancreatic islet cell regeneration, the pathogenesis of diabetes-related vascular disease, and chronic complications of diabetes, as well as drug screening, are current hot topics. Moreover, GLP-1 or GLP-1 receptor agonists (GLP-1 RA) play a crucial role in diabetes and glucose metabolism (as shown in Fig 2).

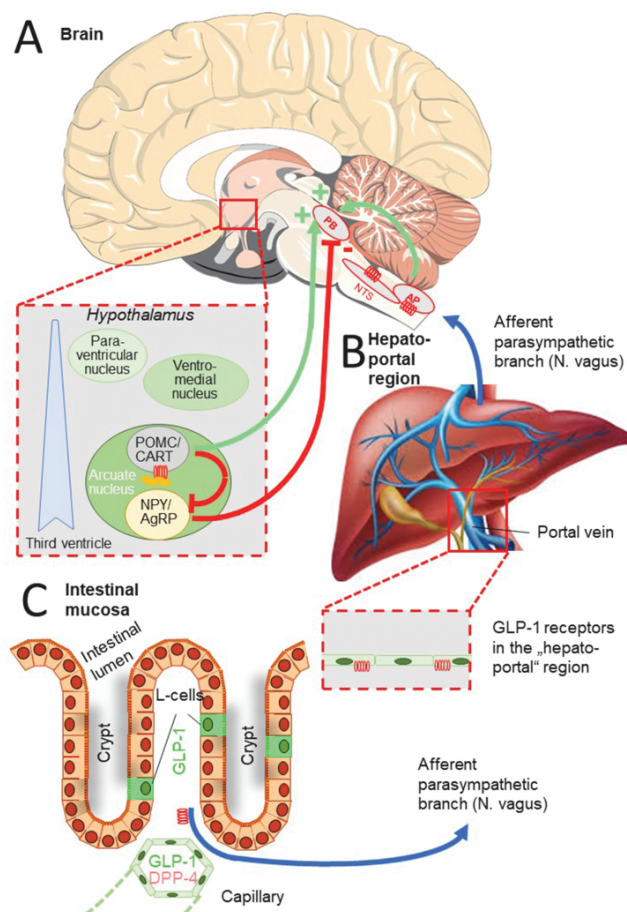


Fig 2: Schematic diagram demonstrating how various methods of GLP-1 or GLP-1 RA administration into the general circulation can reach and influence brain areas involved in the regulation of energy intake and expenditure^[4]

Inhibitors & Agonists

Type 1 diabetes

Catalog No.	Product Name	Introduction
T8221	Insulin (human)	Insulin (human) is a peptide hormone that promotes glycogen synthesis and regulates glucose levels in the blood. Insulin (human) has hypoglycemic activity and is used clinically to treat hyperglycemia in diabetic patients.
TP1125	Insulin (cattle)	Insulin(cattle) is a peptide hormone that promotes glycogen synthesis and regulates glucose levels in the blood. Insulin has hypoglycemic activity and is used clinically to treat hyperglycemia in diabetic patients.
T76763	Teplizumab	Teplizumab (MGA-031) is a humanized monoclonal antibody targeting CD3 that slows the loss of beta cell function and is used to treat type 1 diabetes.
T1558	Resveratrol	Resveratrol (SRT 501) is a polyphenolic natural product, a plant antitoxin with antioxidant and chemopreventive activities. Resveratrol has a wide range of targets including COX, SIRT, LOC, etc. Resveratrol induces autophagy and apoptosis.
T1102	Mifepristone	Mifepristone (C-1073) is a Progestin Antagonist. The mechanism of action of mifepristone is as a Progestational Hormone Receptor Antagonist.

Type 2 diabetes

Catalog No.	Product Name	Introduction
T19850	Semaglutide	Semaglutide is a glucagon-like peptide 1 receptor (GLP-1R) agonist (EC50 of 6.2 pM in a reporter assay using BHK cells expressing the human receptor).
T1507	Streptozocin	Streptozocin is toxic to insulin-producing pancreatic islet B-cells and is commonly used in the construction of animal models of type 1 diabetes. The product is unstable in solution and is recommended to be dispensed now.
T5S0636	Citric acid	An important intermediate in the tricarboxylic acid cycle, which can be used for diabetes-related metabolic research.
T1076	Dexamethasone	An interleukin receptor modulator that induces autophagy and mitophagy, exhibiting anti-inflammatory and immunosuppressive effects.
T7814	Alloxan monohydrate	Alloxan Monohydrate is a glucose analog used to induce diabetes by destroying beta-cells.
T4823	D-Fructose	D-Fructose (D-arabino-hexulose), also known as D-(-)-Fructose or D-(-)-Levulose, is classified as a member of the Monosaccharides.
T0740	Metformin hydrochloride	A widely used anti-diabetic drug, exhibits potential anti-Y properties by inhibiting the proliferation of various Y cells, including colon and prostate.
T4884	alpha-D-glucose	A primary source of energy for living organisms. It is naturally occurring and is found in fruits and other parts of plants in its free state. It is used therapeutically in fluid and nutrient replacement.
T0247	Acarbose	An alpha-glucosidase inhibitor that can enhance the blood glucose-lowering effects of sulfonylureas or insulin.
T1529	Miglitol	An anti-diabetic compound capable of inhibiting the breakdown of sugar complexes into glucose.
T8319	Butyl isobutyl phthalate	a non-competitive α -glucosidase inhibitor (IC50 :38 μ M), which shows a hypoglycemic effect
T2389	Dapagliflozin	A selective sodium-glucose co-transporter subtype 2 (SGLT2) inhibitor with antihyperglycemic activity.
T1782	Canagliflozin	A selective SGLT2 inhibitor that inhibits CHO cells expressing mSGLT2, rSGLT2, and hSGLT2 (IC50=2/3.7/4.4 nM). Canagliflozin can be used for the treatment of type II diabetes mellitus (T2DM).
T4353	SR-18292	An inhibitor of PPAR gamma coactivator-1 α (PGC-1 α), which increases PGC-1 α acetylation, suppresses gluconeogenic gene expression and reduces glucose production in hepatocytes.
T4353	SR-18292	An agonist of Rev-erb can inhibit the expression of gluconeogenesis-related genes in hepatocytes and reduce glucose production.
T5045	GSK4112	A hypoglycemic agent that can lower blood sugar levels by stimulating pancreatic-cells to release more insulin.
T0816	Acetohexamide	An ATP-sensitive potassium (KATP) channel inhibitor that induces autophagy, commonly used in research on diabetes and obesity.
T1634	Glibenclamide	An ATP-sensitive K ⁺ channel (KATP) antagonist, which is highly specific to pancreatic β -cell KATP channels, is commonly used in type 2 diabetes research.
T6587	Mitiglinide Calcium	A potent, orally bioavailable dihydropurinedione-based inhibitor of dipeptidyl peptidase 4 (DPP-4), with hypoglycemic activity.
T0191	Linagliptin	A synthetic analog of glucagon-like peptide-1 (GLP-1), an agonist of the GLP-1 receptor. Liraglutide can be used to treat type 2 diabetes and chronic obesity.
T6876	Liraglutide	An insulin sensitizing agent and thiazolidinedione indicated for the treatment of type 2 diabetes, and has been linked to rare instances of acute liver injury.
T0214	Pioglitazone	A long-chain free fatty acid receptor 4 (FFA4/GPR120) agonist, commonly used in the study of metabolic diseases, inflammation, and immune responses.
T3433	TUG-891	An inhibitor of the humanized monoclonal antibody PCSK9. It binds to circulating PCSK9 protein, resulting in inhibition of PCSK9 binding to LDLR. It can be used in studies of hypercholesterolemia and atherosclerotic cardiovascular disease.
T9920	Evolocumab	A HIF-1 α inhibitor with selectivity, oral activity, and blood-brain barrier permeability. PX-478 has antitumor activity and also protects pancreatic β -cell function in diabetes mellitus and is used in type 2 diabetes mellitus research.
T6961	PX-478	An SGLT-2 inhibitor (IC50=3.1 nM) that is potent and selective, with more than 300-fold selectivity for SGLT-1/4/5/6. Empagliflozin is used for the treatment of type 2 diabetes.
T1766	Empagliflozin	A dipeptidyl peptidase 4 (DPP-4) inhibitor, commonly used in research related to type 2 diabetes.
T6203	Saxagliptin	

Recombinant Proteins

Catalog No.	Product Name	Introduction
TMPY-04878	IGF1/IGF-I Protein, Mouse, Recombinant	An insulin-like growth factor that can be used in research on pancreatic cell protection and regeneration related to diabetes.
TMPY-00936	TNF alpha Protein, Human, Recombinant	An inflammatory cytokine that can affect glucose metabolism by inducing insulin resistance.
TMPY-03238	IL-6 Protein, Mouse, Recombinant	An inflammatory cytokine that is significantly elevated in individuals with obesity and type 2 diabetes, and has a significant impact on hepatic glucose and lipid metabolism.
TMPY-02134	IL-1 beta/IL-1F2 Protein, Mouse, Recombinant	A cytokine that plays a key role in autoimmune responses, capable of inducing apoptosis of pancreatic β -cells and impairing their function.
TMPY-03547	IL-10 Protein, Human, Recombinant	An anti-inflammatory cytokine that can balance immune responses, prevent excessive inflammation, and maintain normal function of pancreatic cells.
TMPY-00118	MCP-1/CCL2 Protein, Human, Recombinant (His)	A chemokine that can attract monocytes and macrophages to the site of inflammation, playing a significant role in chronic inflammation caused by obesity and type 2 diabetes.
TMPY-03356	IFN gamma Protein, Mouse, Recombinant	An important immune cell factor that can function by activating macrophages and promoting autoimmune responses.
TMPY-02700	BCL2 Protein, Human, Recombinant (His)	A recombinant protein that inhibits cell apoptosis, which can be used to study the mechanisms of cell apoptosis in diabetes-related pancreatic islet cell damage and regeneration.

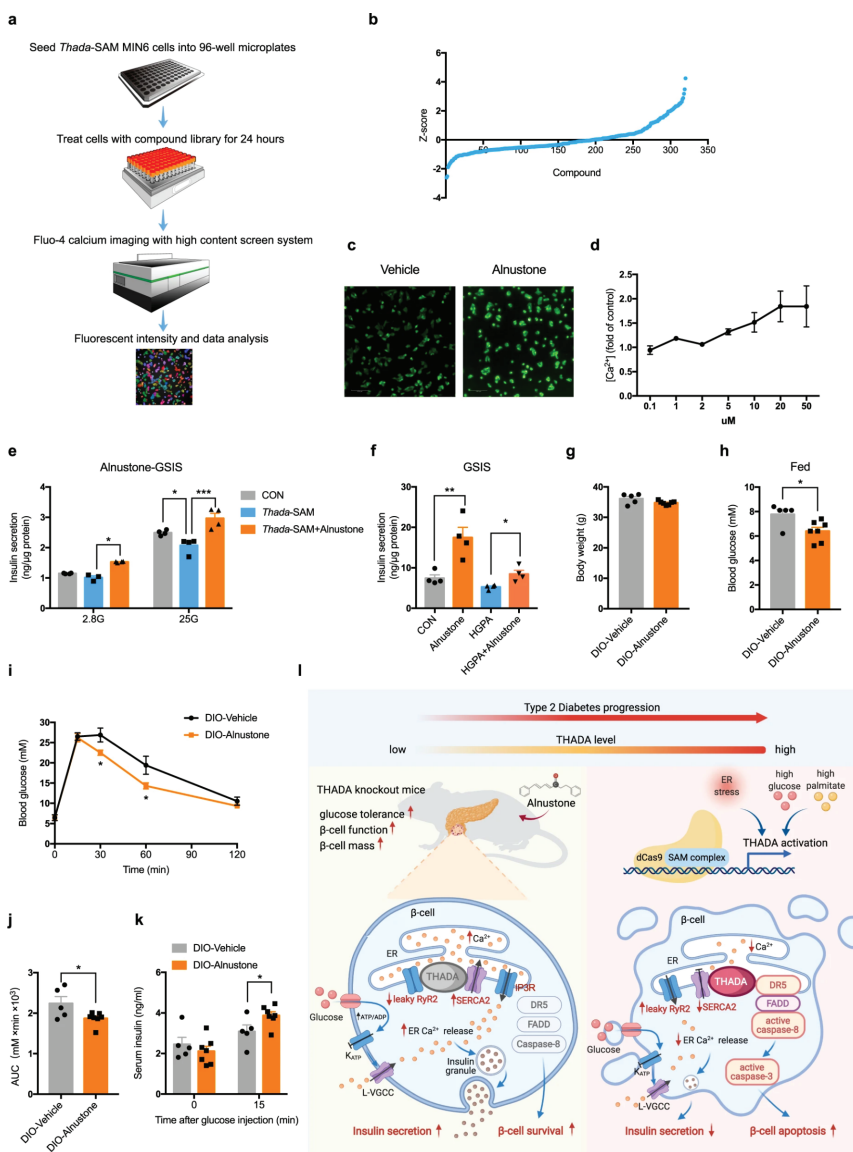
Compound Libraries

Catalog No.	Product Name	Quantity of Compounds	Introduction
L1900	Anti-Diabetic Compound Library	800+	A unique collection of 800+ small molecules affecting the development of diabetes is an effective tool for diabetes research and drug screening.
L2520	Glycometabolism Compound Library	1,100+	TargetMol's Glycometabolism Compound Library collects 1,100+ glycometabolism-related compounds, targeting GLUTs, Hexokinase(HK), Pyruvate Kinase(PK), phosphofructokinase(PFK), IDH1/2, LDH, AMPK, etc. It is a powerful tool for research in glycometabolism-related disorders and cancer.
L5200	Anti-Metabolism Disease Compound Library	1,500+	The unique collection of 1,500+ small chemicals targeting metabolism diseases will provide the support for metabolism research and related drug screening.
L2500	Human Endogenous Metabolite Library	490+	The TargetMol's Human Endogenous Metabolite Library consists of a selection of 499 human endogenous metabolites, serving as effective tools for exploring the disease mechanisms and discovering new drugs.
L7000	Bioactive Lipid Compound Library	380+	TargetMol offers a curated selection of over 380 lipid-related small molecule inhibitors. Aside from certain short-chain or medium-chain fatty acids, polyunsaturated fatty acids (PUFAs) are essential bioactive lipid molecules. They play a critical role in maintaining normal homeostasis in the body and preventing the progression of metabolic diseases.
L2540	Gut Microbial Metabolite Library	500+	TargetMol offers a selection of over 500 gut microbiota metabolites, including fatty acids, amino acids, vitamins, carbohydrates, lipids, and other compound types. It serves as an effective tool for studying gut microbiota metabolism and related drug development. These metabolites can be utilized in research on gut microbiota and drug development.

Case

Zhang Y, et al. THADA inhibition in mice protects against type 2 diabetes mellitus by improving pancreatic β -cell function and preserving β -cell mass. Nat Commun. 2023 Feb 23;14(1):1020. IF=16.6

Type 2 diabetes mellitus (T2DM) affects the health of nearly 500 million people worldwide. THADA is considered a candidate gene for T2DM, but its role in glucose homeostasis remains unclear. Through Thada knockout mouse models and cell experiments, the client found that Thada knockout significantly enhances insulin secretion, increases insulin content, elevates intracellular ATP levels in insulin-secreting cells, and increases the number and size of secretory vesicles. Based on these findings, the client utilized TargetMol's L4200 FDA-approved drug library and L6810 Traditional Chinese Medicine monomer compound library to perform high-throughput screening on Thada-activated MIN6 cells. Ultimately, they identified a natural compound, alnustone, which can reverse THADA-induced β -cell dysfunction and improve hyperglycemia in obese mice. This study provides a potential drug target for the development of new therapeutic strategies for type 2 diabetes and serves as an important reference for future diabetes treatment research.



Obesity and Metabolic Syndrome

Obesity can induce systemic inflammation, dramatically increasing the risk of various diseases such as type 2 diabetes, cardiovascular diseases, and non-alcoholic fatty liver disease, and is associated with a reduced life expectancy. The connection between obesity, adipose tissue inflammation, and metabolic diseases makes inflammatory pathways an attractive target for treating obesity-related metabolic complications (as shown in Fig 3).

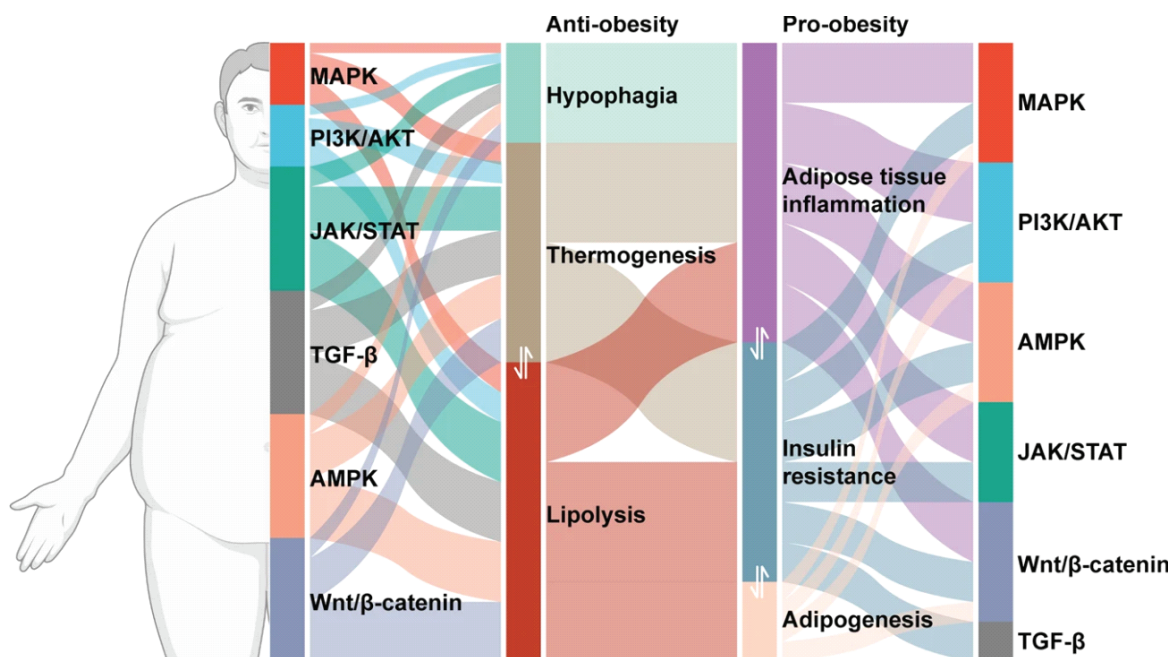


Fig 3: Signaling pathways and targets involved in pro-obesity and anti-obesity mechanisms^[5]

Inhibitors & Agonists

Catalog No.	Product Name	Introduction
T0686	Orlistat	A lipase inhibitor and a fatty acid synthase (FASN) inhibitor. Orlistat has been shown to promote weight loss.
T1519L	Rimonabant	A highly effective cannabinoid receptor 1 (CB1) antagonist capable of crossing the blood-brain barrier can reduce appetite and increase energy expenditure by inhibiting the endocannabinoid system. It is applicable to obesity-related research.
T8526	Metformin	An AMPK activator that can inhibit hepatic gluconeogenesis, increase insulin sensitivity in peripheral tissues, and be used for studies related to type 2 diabetes and obesity.
T1671	Mirabegron	A β_3 -adrenoceptor agonist; it can increase energy expenditure by activating β_3 receptors in brown adipose tissue; commonly used for treating overactive bladder and in research related to obesity.
T4317	PF 429242	A competitive inhibitor of sterol regulatory element-binding protein (SREBP) site-1 protease that can inhibit the rate of cholesterol synthesis in CHO cells.
T3967	Exendin-4	A long-acting glucagon-like peptide-1 receptor agonist that can increase insulin secretion and reduce appetite to control blood sugar levels and body weight.
T1671	Mirabegron	A β_3 -adrenergic receptor agonist that can reduce body fat by promoting lipolysis and increasing energy expenditure.

Recombinant Proteins

Catalog No.	Product Name	Introduction
TMPY-00875	Leptin Protein, Human, Recombinant	A hormone produced by fat cells, also known as the obesity factor, that regulates appetite and energy balance. It is often used in research on energy balance regulation in obesity and metabolic syndrome.
TMPY-05556	Adiponectin Protein, Human, Recombinant (His)	A cytokine secreted by adipocytes that can improve insulin sensitivity and has anti-inflammatory and anti-atherosclerotic effects.
TMPY-01294	TNF alpha Protein, Mouse, Recombinant	A pro-inflammatory cytokine that promotes the recruitment and activation of inflammatory cells, commonly used to induce apoptosis in autoimmune diseases, inflammatory bowel disease, cancer, and infections.
TMPY-03238	IL-6 Protein, Mouse, Recombinant	A cytokine involved in chronic inflammation, energy metabolism, and insulin resistance, which can be used for research on the relationship between inflammation, obesity, and metabolic syndrome.
TMPY-02575	PPAR gamma/PPARG Protein, Human, Recombinant (His & GST)	A transcription factor that plays a central role in fat metabolism, insulin sensitivity, and inflammation, and can be used in research on regulatory mechanisms in lipid metabolism and insulin resistance.
TMPY-01717	VEGF164 Protein, Mouse, Recombinant	A vascular endothelial growth factor, whose expression increases in adipose tissue in obesity, is associated with angiogenesis and inflammation in adipose tissue.
TMPY-00118	MCP-1/CCL2 Protein, Human, Recombinant (His)	A chemokine that attracts monocytes and macrophages into adipose tissue, promoting inflammation and insulin resistance.

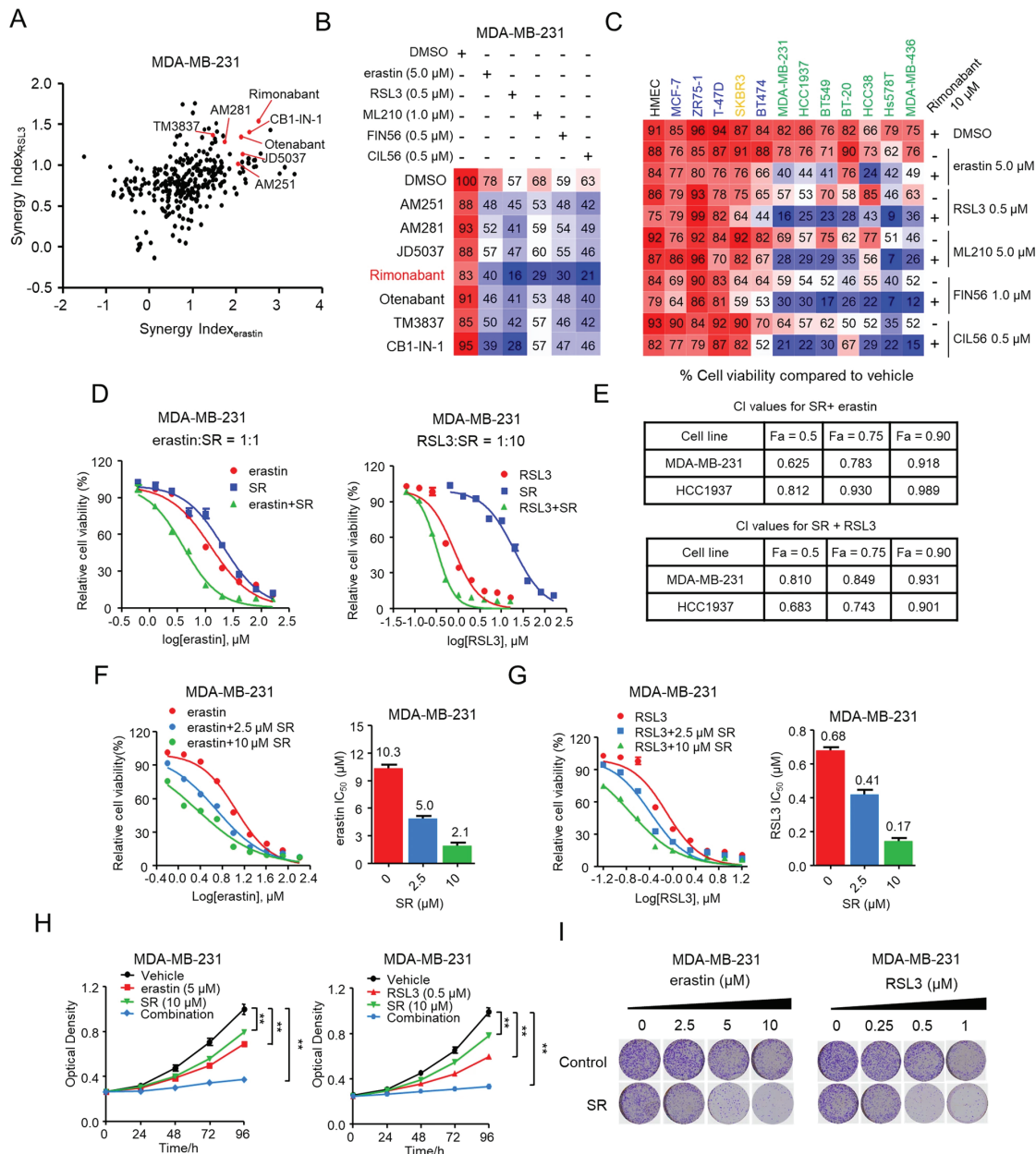
Compound Libraries

Catalog No.	Product Name	Quantity of Compounds	Introduction
L7100	Anti-Obesity Compound Library	2,400+	TargetMol carefully collects 2,400+ compounds with anti-obesity activity as Anti-Obesity Compound Library, which can be used for anti-obesity research and drug discovery.
L2510	Lipid Metabolism Compound Library	600+	TargetMol's Lipid Metabolism Compound Library collects 600+ compounds acting on key targets related to lipid metabolism, such as Acetyl-CoA Carboxylase, Acyltransferase, cholesteryl ester transfer protein (CETP), FAAH, Fatty Acid Synthase (FASN), HMG-CoA Reductase (HMGCR), etc.
L2501	Human Endogenous Metabolite Compound Library Plus	1,000+	TargetMol's collection of 1,000+ endogenous metabolism-related compounds, Human Endogenous Metabolism Compound Library, can be used for research in endogenous metabolism-related diseases and drug screening.
L2194	Anti-Colorectal Cancer Compound Library	1,800+	The TargetMol Anti-Colorectal Cancer Compound Library is a collection of 1,800+ compounds related to colorectal cancer, including compounds that have been reported to have therapeutic effects in colorectal cancer, as well as compounds targeting colorectal cancer-related targets
L5200	Anti-Metabolism Disease Compound Library	1,500+	The unique collection of 1,500+ small chemicals targeting metabolism diseases will provide the support for metabolism research and related drug screening.
L7110	Anti-Hypertension Compound Library	500+	TargetMol Anti-hypertension Compound Library is a collection of 500+ hypertension-related small molecules, including compounds with Anti-hypertension effects and compounds that act on hypertension-related targets, that support your research or related drug screening.

Case

Li P, et al. Inhibition of cannabinoid receptor type 1 sensitizes triple-negative breast cancer cells to ferroptosis via regulating fatty acid metabolism. *Cell Death Dis.* 2022 Sep 21;13(9):808. **IF=9.0**

To improve the survival rate of patients with triple-negative breast cancer (TNBC), the client explored a therapeutic strategy to enhance the sensitivity of TNBC cells to ferroptosis by inhibiting cannabinoid receptor type 1 (CB1). After evaluating the effects of CB1 antagonists on TNBC cells through in vitro cell experiments, the **TargetMol L2510 lipid metabolism compound library** was used to verify the efficacy of combining CB1 antagonists with ferroptosis inducers. Ultimately, RNA sequencing, fatty acid analysis, and functional studies revealed that CB1 influences the sensitivity of TNBC cells to ferroptosis by regulating fatty acid metabolic pathways. This was further validated using animal models, offering new insights and approaches for potential therapeutic strategies for TNBC.



Cancer and Cancer Metabolism

Cancer cells require large amounts of energy and biomaterials to support their abnormal biological activities during growth and proliferation. The main characteristics of cancer metabolism include the Warburg effect, abnormal lipid metabolism, amino acid metabolism, and dysfunctional mitochondria, among others. Research into cancer metabolism has revealed many potential targets that can be utilized as strategies for cancer therapy, such as the glycolysis pathway, lipid synthesis pathway, amino acid metabolism pathway, mitochondrial function, and metabolic regulators. By targeting these pathways, it is possible to interfere with the metabolism of cancer cells, thereby inhibiting their growth and proliferation. A diagram illustrating current popular research targets in cancer metabolism (e.g., Fig 4) is shown.

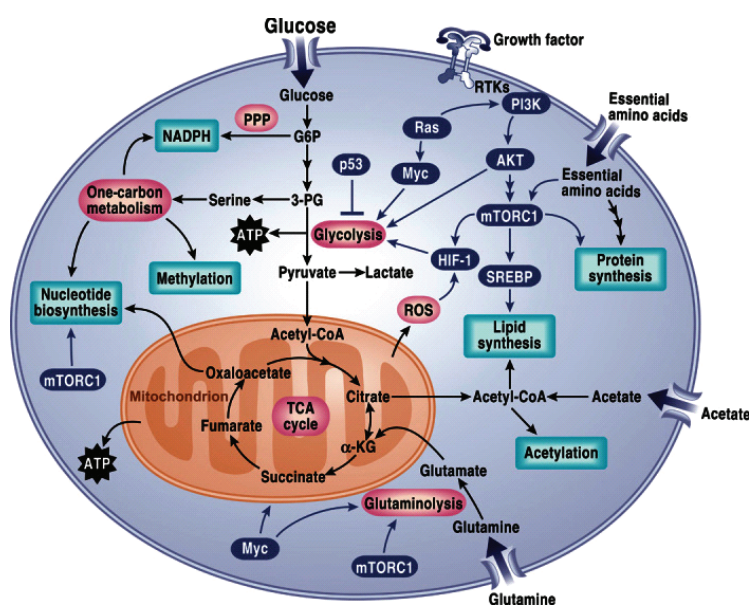


Fig 4: Signaling pathways regulating cancer metabolism^[6]

Inhibitors & Agonists

Catalog No.	Product Name	Introduction
T6742	2-Deoxy-D-glucose	An analog of glucose, an inhibitor of glycolysis. 2-Deoxy-D-glucose has antiviral activity, as well as inhibitory cell proliferation and apoptosis-inducing activity.
T8526	Metformin	An AMPK activator with blood-brain barrier permeability. Metformin may improve glycemic control by increasing insulin sensitivity and decreasing intestinal glucose uptake, and is commonly used in type 2 diabetes research.
T3604	Sodium dichloroacetate	A specific inhibitor of pyruvate dehydrogenase kinase (PDK) with IC50 values of 183 and 80 μ M for PDK2 and PDK4 respectively, has been shown to derepress a mitochondrial potassium-ion channel axis, trigger apoptosis in cancer cells, and inhibit tumor growth.
T6797	Telaglenastat	An effective, specific, and oral inhibitor, which is bioavailable glutaminase, for recombinant human GAC.
T8373	6-Diazo-5-oxo-L-nor-Leucine	A glutamine antagonist with antibacterial, antiviral, and anticancer effects, commonly used in tumor-related research.
T0686	Orlistat	A lipase inhibitor and a fatty acid synthase (FASN) inhibitor. Orlistat has been shown to promote weight loss.
TP1115	L-Asparaginase	As a medication, L-asparaginase is used to treat acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), and non-Hodgkin's lymphoma. It is given by injection into a vein, muscle, or under the skin.
T8684	Sotorasib	A KRAS G12C covalent inhibitor that can affect the amino acid metabolism of tumor cells.
T1477	AICAR	An AMPK activator that causes ZMP accumulation, thereby mimicking the stimulatory effect of AMP on both AMPK and AMPKK. It is commonly used in research related to diabetes, cardiovascular diseases, and tumors.

Inhibitors & Agonists

Catalog No.	Product Name	Introduction
T9908	Pembrolizumab	A PD-1 antibody that can be used for various cancer types, including melanoma, non-small cell lung cancer, renal cell carcinoma, and others.
T9907	Nivolumab	A PD-1 antibody inhibitor, which can be used for the study of advanced (metastatic) non-small cell lung cancer.
T9902	Atezolizumab	A humanized monoclonal antibody IgG1 that can resist programmed cell death ligand 1, used in cancer research.
T9904	Bevacizumab	A humanized monoclonal antibody targeting VEGF, which specifically binds to VEGF and blocks the interaction between VEGF and VEGFR. It exhibits anti-tumor activity by inhibiting the angiogenesis signaling pathway and can be used to suppress tumor cell growth.
T9912	Trastuzumab	A humanized monoclonal antibody that can bind to HER2 with high affinity and selectivity, which can be used for the treatment of HER2-positive tumors. It induces cell cycle arrest, mediates cytotoxicity, and inhibits DNA damage repair.
T9909	Pertuzumab	A HER2 dimerization inhibitor for research in metastatic HER2-positive breast cancer.
T9905	Cetuximab	An inhibitor of human epidermal growth factor receptor (EGFR). Cetuximab has antitumor activity, inhibiting tumor cell proliferation and inducing apoptosis.
T9927	Panitumumab	A fully human IgG2 monoclonal antibody that can bind to epidermal growth factor receptor (EGFR) and exhibits anti-tumor activity.
T35390	Magrolimab	A humanized anti-CD47 IgG4 monoclonal antibody demonstrates its antitumor activity by blocking CD47. It can be used in combination with other compounds for studies related to relapsed multiple myeloma.

Recombinant Proteins

Catalog No.	Product Name	Introduction
TMPJ-01463	IL-2 Protein, Human, Recombinant (E. coli)	An important cytokine that regulates the immune system, which can be used in research related to melanoma and renal cell carcinoma, and can activate the immune system to attack cancer cells.
TMPY-04578	Interferon alpha 1/IFNA1 Protein, Human, Recombinant (His)	An important cytokine involved in immune regulation and antitumor activity, capable of activating natural killer (NK) cells and dendritic cells, and applicable to research on various cancers and virus-related infections.
TMPY-00443	EPO/Erythropoietin Protein, Mouse, Recombinant	A type of growth factor that can promote the production of red blood cells and can be used for research on anemia related to certain cancers.
TMPJ-00261	TGF beta 2 Protein, Mouse/Rat, Recombinant	A type of transforming growth factor that can inhibit cell proliferation, induce cell differentiation, regulate the tumor microenvironment, and suppress tumor growth.

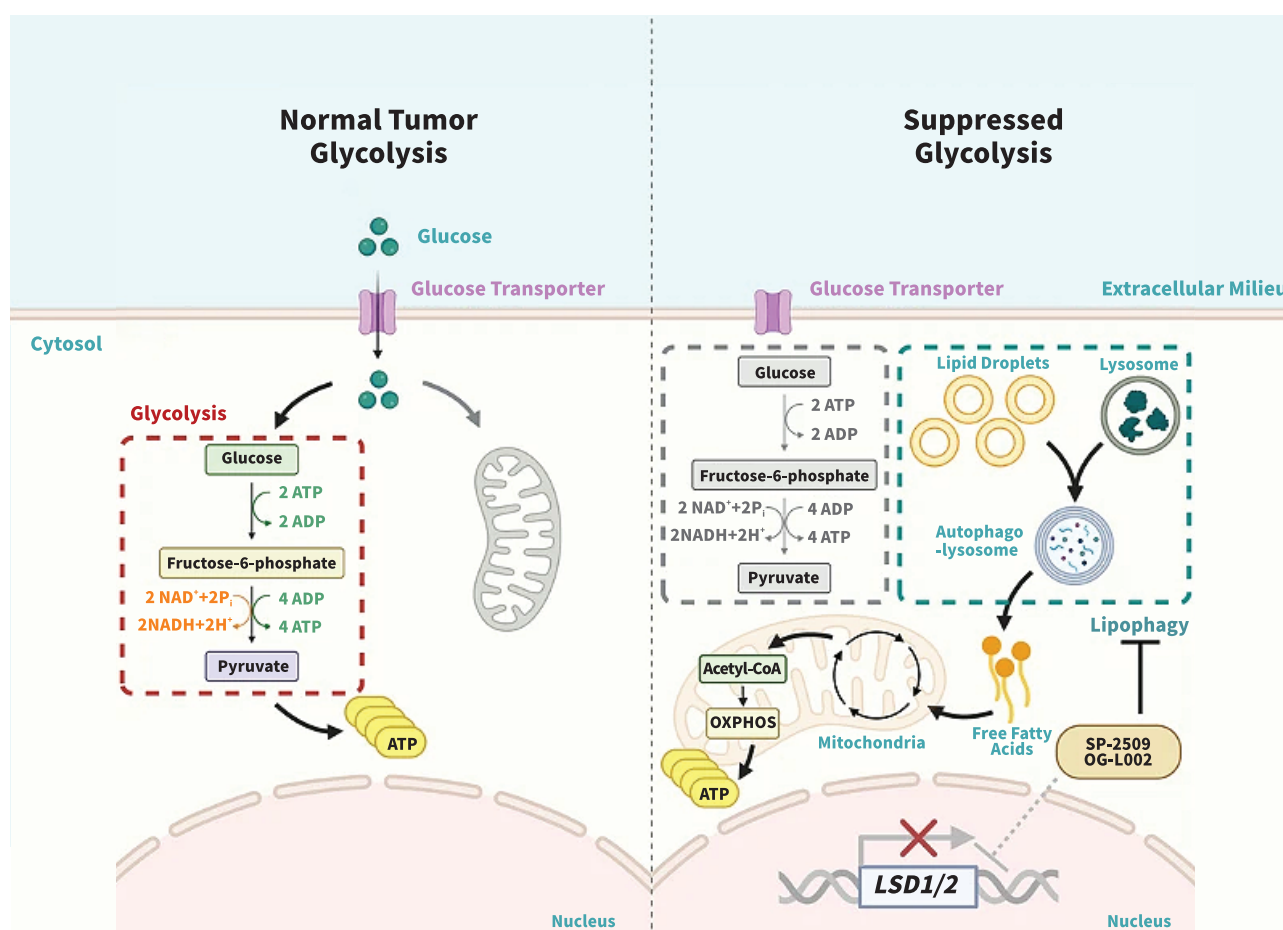
Compound Libraries

Catalog No.	Product Name	Quantity of Compounds	Introduction
L2560	Metabolism Compound Library	3,000+	TargetMol offers a unique collection of over 3,000 metabolically relevant bioactive small molecules, targeting various metabolic pathways such as glucose metabolism, lipid metabolism, and nucleotide metabolism. The collection includes targets like GLUT, Hexokinase, Pyruvate Kinase; ATGL, MAGL, FAAH, and other popular metabolism-related targets. It serves as a valuable tool for studying metabolic disorders such as diabetes, obesity, hypertension, cardiovascular diseases, and cancer.
L2130	Anti-Cancer Metabolism Compound Library	1,200+	A unique collection of 1,200+ cancer cellular metabolism related compounds by TargetMol can be used for cancer related research and high throughput and high content screening for anti-cancer drugs.
L2550	Glutamine Metabolism Compound Library	900+	TargetMol owns a unique collection of 900+ compounds targeting the mainly proteins and enzymes involved in glutamine metabolism pathway. Glutamine Metabolism compound library is a useful tool for research in glutamine metabolic processes and drug discovery.
L5510	Drug-induced Liver Injury (DILI) Compound Library	1,000+	TargetMol's Drug-induced Liver Injury Compound Library collects 1,000+ hepatotoxicity causing compounds, including anti-cancer drugs, antibiotics, antituberculosis agents, antiretrovirals, antiepileptic agents, and cardiac medications, etc.
L2530	Mouse Metabolite Compound Library	200+	TargetMol's Mouse Metabolite Compound Library collects 200+ mouse metabolites which can be used for HTS and HCS, and research related to metabolomics.

Case

Zhang Z, et al. Potential role of lipophagy impairment for anticancer effects of glycolysis-suppressed pancreatic ductal adenocarcinoma cells. *Cell Death Discov.* 2024 Apr 5;10(1):166. **IF=7.0**

To investigate the potential role of lipid autophagy impairment in the anticancer effect when glycolysis is inhibited in pancreatic ductal adenocarcinoma (PDAC) cells, the client utilized TargetMol's Anticancer Metabolism Library (L2130) to screen and validate the anticancer effects of SP-2509 and OG-L002 on PDAC cells. The results showed that these compounds significantly inhibited the growth of PDAC PANC-1 cells and induced lipid droplet accumulation by disrupting lipid metabolism rather than exerting their anticancer effects through macroautophagy. This study provides new insights into the roles of lipid metabolism and autophagy in cancer therapy and offers a novel approach for anticancer drug screening.



Sex Hormones and Reproductive Health

Sex hormones play a critical role in the development of sexual organs, the regulation of physiological cycles, the formation of gender characteristics, and the maintenance of reproductive functions. The balance of sex hormones is closely linked to reproductive health, while imbalances can lead to reproductive system diseases, infertility, sexual dysfunction, and other issues. Areas such as the development and functional regulation of reproductive organs, reproductive cycle regulation, and hormone replacement therapy are current research hotspots (as shown in Fig 5).

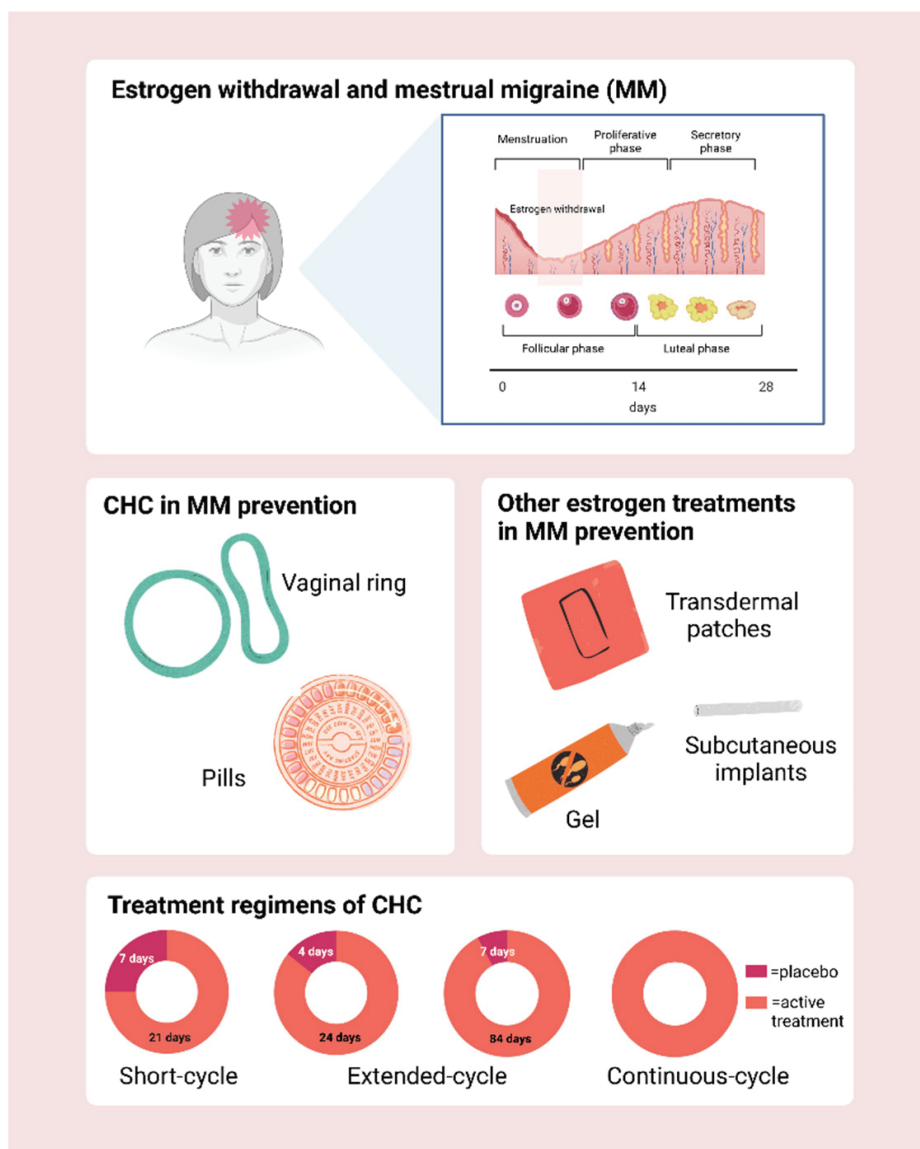


Fig5: Using combined hormonal contraceptives (CHC) or hormone replacement therapy (HRT) can improve migraines^[7]

Inhibitors & Agonists

Catalog No.	Product Name	Introduction
T1048	Estradiol	A naturally occurring steroidal sex hormone that is essential for female fertility and maintenance of secondary sexual characteristics. Estradiol upregulates IL-6 expression through estrogen receptor beta (ER β).
T6906	Tamoxifen	A selective estrogen receptor modulator (SERM), which exhibits inhibitory activity on estrogen (e.g., in breast cells) and agonistic activity (e.g., in bone, liver, and uterine cells), can be used in research related to the estrogen signaling pathway.
T3130	Testosterone phenylpropionate	An active androgen metabolite with higher affinity for the androgen receptor, commonly used in studies of androgen signaling pathways.
T21410	Triptorelin acetate	A GnRH agonist that can reduce the secretion of pituitary gonadotropins, including luteinizing hormone (LH) and follicle-stimulating hormone (FSH), by causing continuous stimulation of the pituitary. It can be used for hormone-responsive cancers such as breast cancer or prostate cancer, precocious puberty, estrogen-dependent diseases, and related research in assisted reproduction.
T1429	17 α -Hydroxyprogesterone	An endogenous progestogen, which is a chemical intermediate in the biosynthesis of other steroid hormones, including glucocorticoids, estrogens, and androgens.
T2881	Crustecdysone	A type of ecdysteroid that regulates the molting or ecdysis process in insects, it can inhibit caspase activity and induce autophagy through the 20E receptor complex EcR-USP, and has a regulatory or protective effect on the cardiovascular system.
T3665	Tectoridin	A type of isoflavone plant estrogen that can activate estrogen and thyroid hormone receptors.
T3033	Deoxycorticosterone acetate	A steroid hormone produced by the adrenal glands, with mineralocorticoid activity, and serves as a precursor to aldosterone.
T13542	α -Zearalenol	A derivative of zearalenone (ZEN) with high affinity for estrogen receptors, which can cause reproductive disorders in animals due to its xenoestrogenic effects.
T1614	Hydrocortisone	A type of corticosteroid secreted by the adrenal cortex, which promotes protein catabolism, gluconeogenesis, capillary wall stability, renal calcium excretion, and inhibits immune and inflammatory responses.
T0948L	Corticosterone	A type of adrenal corticosteroid that has both mineralocorticoid and glucocorticoid activity, and is involved in the regulation of energy, immune response, and stress response in the body.
T0851	Pregnenolone	An endogenous steroid hormone involved in cholesterol synthesis and a specific inhibitor of cannabinoid receptor CB1 signaling, commonly used in research related to Alzheimer's disease and other related studies.
TQ0209	Ailanthone	An effective androgen receptor (AR) inhibitor that can inhibit both the full-length androgen receptor and the persistently active splice variants.

Recombinant Proteins

Catalog No.	Product Name	Introduction
TMPY-03238	IL-6 Protein, Mouse, Recombinant	A multifunctional cytokine that plays a role in various diseases such as autoimmune diseases, inflammatory diseases, and cancer, commonly used in the study of endometriosis and polycystic ovary syndrome (PCOS).
TMPY-01294	TNF alpha Protein, Mouse, Recombinant	An important pro-inflammatory cytokine involved in immune regulation of the reproductive system, commonly used in the study of infertility and inflammatory diseases of the reproductive organs.
TMPY-02134	IL-1 beta/IL-1F2 Protein, Mouse, Recombinant	An important pro-inflammatory cytokine that plays a key role in the inflammatory response of the reproductive system, commonly used to study inflammation in the ovaries and endometrium.
TMPY-05064	IL-10 Protein, Mouse, Recombinant	An important anti-inflammatory cytokine that plays a crucial role in maintaining immune balance and preventing autoimmune diseases.
TMPY-04726	IL-8/CXCL8 Protein, Human, Recombinant (His)	A chemokine that plays an important role in inflammation and immune response in the reproductive system, commonly used in research on endometriosis and infertility.

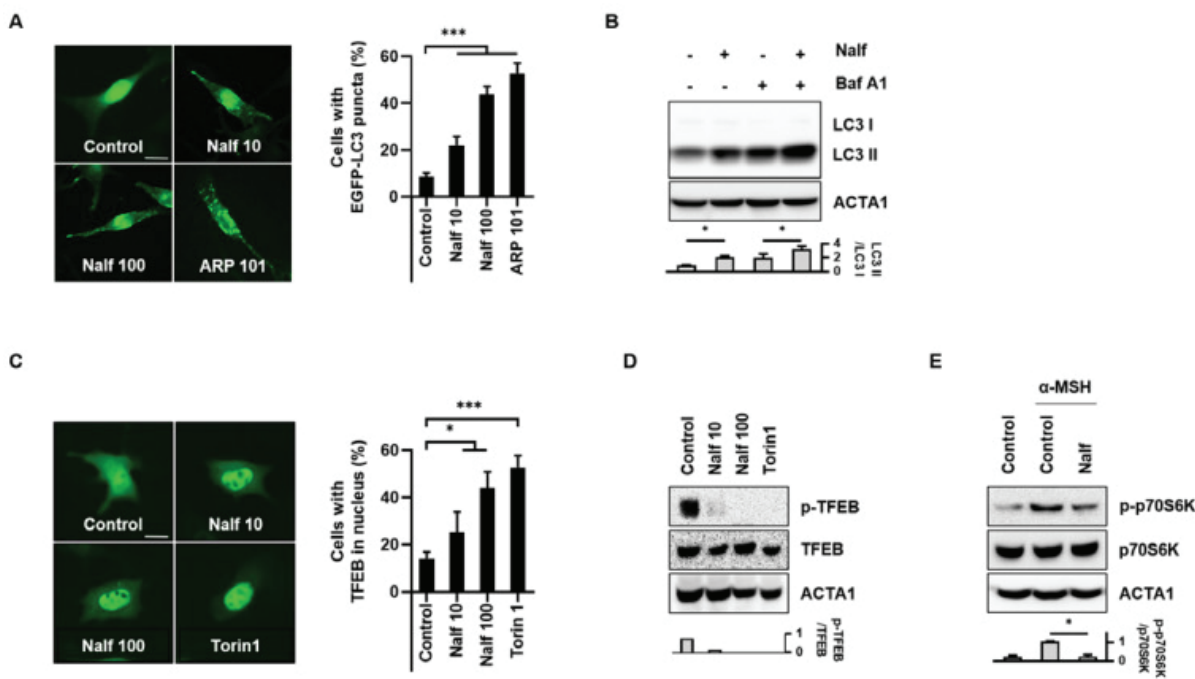
Compound Libraries

Catalog No.	Product Name	Quantity of Compounds	Introduction
L2400	Endocrinology-Hormone Compound Library	900+	The Endocrinology-Hormones Compound Library by TargetMol, containing 900+ compounds targeting endocrine system, can be used for research in endocrine system, high throughput screening and high content screening for new drugs in endocrine diseases.
L3300	Histamine & Melatonin Receptor-Targeted Compound Library	180+	TargetMol has selected over 180 bioactive small molecule compounds for high-throughput and high-content screening. These compounds specifically target histamine receptors and melatonin receptors, making them excellent tools for researching related diseases and ideal carriers for drug screening.

Case

Lee HJ, et al. Nalfurafine Hydrochloride, a κ -Opioid Receptor Agonist, Induces Melanophagy via PKA Inhibition in B16F1 Cells. *Cells*. 2022 Dec 29;12(1):146. **IF=5.1**

To explore the effect of Nalfurafine Hydrochloride on melanin phagocytosis in B16F1 cells, the client used **TargetMol's Endocrine Hormones Library (L2400)** to verify the role of Nalfurafine Hydrochloride in inducing melanin phagocytosis. The results showed that Nalfurafine Hydrochloride could induce melanin phagocytosis through PKA inhibition. This study provides new insights and potential therapeutic applications for Nalfurafine Hydrochloride in promoting melanin phagocytosis.



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