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加速科学发现 推进研究进程

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快速实现您的创新灵感

CAS

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CAS SciFinder Discovery Platform

加速您的科学发现

随着科学信息量不断高速增长，在纷繁复杂的信息中快速找到真正所需的科研信息可能极具挑战。CAS SciFinder Discovery Platform 是美国化学文摘社 (CAS) 隆重发布的新一代权威科学研究工具，是业界领先的检索引擎之一。CAS 国际科学家团队追踪全球科技进展，收录汇总、标引、关联全球专利、科技期刊等内容，学科收录涵盖化学及相关领域，如生物、医药、材料、食品、应用化学、化学工程、农学、高分子、物理等跨学科的科技信息；收录文献类型包括期刊、专利、会议论文、学位论文、图书、技术报告、评论、预印本和网络资源等。无论您是找寻并确定新的研究课题、申请基金、撰写论文，还是为新的项目制定实验计划或找寻合作者以推动您所在领域的研究进程，CAS SciFinder Discovery Platform 助力您更快地找到相关见解。

CAS SciFinder Discovery Platform 包括：化学及相关学科智能研究平台 CAS SciFinder®、化学分析方法解决方案 CAS Analytical Methods™ 及制剂（配方）解决方案 CAS Formulus®。

- 专为科学家打造的代理 AI——CAS NewtonSM。
- 利用业界领先的相关性搜索引擎更快定位关键信息。
- 全面获取物质信息，自信地开展实验。
- 利用逆合成分析工具 (Retrosynthesis) 快速实现对已知和新物质的逆合成分析，确定最优路线。
- 专利解决方案 CAS PatentPak® 在定位和分析大量专利中的化学结构方面，可以为师生节省一半以上的时间。
- 马库什结构 (Markush) 检索有助于快速判定化合物的新颖性和创造性。
- 利用引文地图 (Citation Map)，全面了解相关学科全景。
- 利用构效关系 (SAR)、吸收、分布、代谢、排泄和毒性 (ADMET) 数据，探索药物 - 靶点 - 毒性的相互作用。
- 检索和分析生物序列及其相关文献，助力生命科学研究。
- 运用配方设计功能 (Formulation Designer) 为配方设计提供思路。
- 利用最古老的德国化学文摘 (ChemZent) 的英文版，可追溯化学科学起源、丰富学生的化学历史知识。

专为科学家打造的代理 AI——CAS Newton

基于 CAS 权威数据，提供 AI 交互式问答，更快理解研究结果、把握研究趋势。

CAS Newton NEW

CAS Newton <

+ New Question

I need a list of all the ferroele...

近三年锂电池领域中无机阻燃...
produce a list of substances f...
Provide a list of compounds ...
Please provided a list of active l...
I'm looking for kilo-scale react...
nanozyme and magnet* and ...
Breakthroughs in flame-retar...
Atroposelective Diyne Cyclizat...

近三年锂电池领域中无机阻燃剂的突破

Based on my search of the CAS Content Collection, I found 138 references on inorganic flame retardants for lithium batteries from the past three years (2022-2026). Here are the key breakthroughs:

主要突破领域 (Key Breakthrough Areas)

- 无机填料增强的固态电解质 (Inorganic Filler-Enhanced Solid Electrolytes)**
 - 金属有机框架 (MOFs): 研究显示ZIF-8等MOF材料的紧密排列道, 实现高离子电导率和优异的循环稳定性 (>10000次循环)
 - 氧化钇 (Y₂O₃): 作为Lewis酸填料, Y₂O₃可固定TFSI⁻阴离子, 对称电池稳定循环超过2400小时
 - 纳米SiO₂涂层: 通过原位生长技术在聚醚磺胺纳米纤维上均匀涂布, 有效抑制燃烧
- 磷系无机阻燃剂 (Phosphorus-Based Inorganic Flame Retardants)**
 - 六氟环三磷腈 (HFPN): 促进形成富含P、F、N无机物的稳定CEI层, 提高热稳定性和Li⁺传输动力学, 使528 Wh/kg锂金属电池实现增强的安全性能
 - 磷酸酯类化合物: 三乙基磷酸酯(TEP)基电解质通过双离子调控策略, 形成外层富含磷酸锂聚合物、内层富含LiF的双层SEI, 有效抑制枝晶
- 氟化无机物 (Fluorinated Inorganic Components)**
 - LiF富集界面: 多项研究表明, 通过电解质设计在阳极和阴极形成富含LiF的无机界面层, 可显著提高界面稳定性和离子传输效率
 - 含氟磷化合物: 乙氧基(五)氟磷作为阻燃稀释剂, 与三氧六环协同作用, 形成独特的层状SEI结构, 实现99.7%的库仑效率
- 复合无机阻燃系统 (Composite Inorganic Flame Retardant Systems)**
 - 氮-磷-硅三元复合: 通过两步反应合成的氮-磷-硅三元复合阻燃剂, 结合改性纳米氢氧化铝(10-12质量%), 达到UL94 V-0等级
 - 镁铝氢氧化物: 表面改性的镁铝氢氧化物纳米片自组装形成花状核壳结构, 与亮聚糖中间层和氮磷协同阻燃剂核层配合使用
- 性能指标突破 (Performance Breakthroughs)**
 - 循环寿命: Li||LiFePO₄电池在1C倍率下1000次循环后容量保持率达91.28%
 - 能量密度: 实现410-528 Wh/kg的高重量能量密度
 - 安全性: 1.1 Ah软包电池加热至250°C无热失控迹象
 - 阻燃性: 限氧指数(LOI)达31.6-31.9%

您可以通过以下链接查看完整的文献列表: 138 references on inorganic flame retardants in lithium batteries (2022-2026)

How can I help you?

0/1000 characters

AI-generated content may contain inaccuracies. Please double-check.

文献检索

References: 结果集按相关性排列, 提供多个聚类筛选项, 节省文献分析时间。

CAS SciFinder

Liposome and Nucleic Acid Drugs

× Draw Q 45

All Substances Reactions References Suppliers Patent Markush

View Related Results

Behavior

Filter by Exclude

Search Within Results

Flags

Life Science Data

Concept

Formulation Purpose

CA Section

CAS Content

Publication Year

Organization

Language

Publication Name

Document Type

Database

4,831 Results

Sort: Relevance View: Partial Abstract

AI Summary Powered by CAS Newton

Based on the search results, here's a summary of key findings related to liposome and nucleic acid

Liposomes and nucleic acid drugs have been extensively studied for their potential in targeted drug delivery and therapeutic applications. Liposomes, which are spherical vesicles composed of lipid bilayers, have been used to encapsulate and deliver various types of drugs, including nucleic acids, t...

View All

1

Nucleic acid delivery with extracellular vesicles

By: Schulz-Siegmund, Michaela; Aigner, Achim
Advanced Drug Delivery Reviews (2021), 173, 89-111 | Language: English, Database: CPlus and MEDLINE

A review. Extracellular vesicles (EVs) are membrane-enclosed particles, heterogeneous in size, shape, contents, biogenesis and structure. They are released by eukaryotic and prokaryotic cells and exert (patho-)physiol. roles as mediators for transmitting mol. information from the producer (donor) to a recipient cell. This review focuses on the potential of EVs for delivering nucleic acids, as particularly problematic cargoes with regard to stability/protection and uptake efficacy. It highlights important properties of EVs for nucleic acid delivery and discusses their physiol. and pathophysiol...

View More

Analyze Results

Top Concepts 可视化分析

Concept	Count
Nucleic acids	~2.5K
Pharmaceutical...	~2.2K
Homo sapiens	~1.8K
Human	~1.8K
Proteins	~1.5K
Lipids	~1.5K
Drug delivery ...	~1.5K
Liposomes	~1.5K
Antitumor agents	~1.5K
Peptides	~1.5K

Top Formulation Purposes

Purpose	Count
Antitumor agents	~2.5K
Drug delivery ...	~2.5K

物质检索

Substances: 获得物质参与的反应、研究物质的文献、物质详情，提高理解物质信息的效率。

Structure Match

As Drawn (2)

Substructure (6,732)

Similarity (246K)

Analyze Structure Precision

便捷切换精准、亚结构、相似结构

with a powerful new tool. Learn more about Chemscape.

Create Chemscape Analysis

Filter Behavior

Filter by Exclude

Search Within Results

Filtering: Aromatic Rings: 1 X Functional Group: Unsaturated ketone X

Stereochemistry: 3 Selected X

Clear All Filters

572 Results

Sort: Relevance View: Partial

1

22913-40-2

Absolute stereochemistry shown

$C_{23}H_{30}O_3$
24-Norchola-4,20,22-trien-3-one, 21,23-epoxy-11β-hydroxy-

2 References 2 Reactions 0 Suppliers

2

193818-88-1

Absolute stereochemistry shown, Rotation (+)

$C_{27}H_{32}O_2$
11'-Naphtho[2',3':13,17]-18-norandrost-4-en-3-one, 4',17-dihydro-11-hydroxy-4'-m...

1 Reference 1 Reaction 0 Suppliers

3

6650-43-7

Absolute stereochemistry shown

$C_{26}H_{32}O_3$
Androst-4-en-3-one, 17-benzoyl-3,11-dihydroxy-, (11β,17β)-

2 References 0 Reactions 0 Suppliers

生命科学数据

Life Science Data: 高效查看药理、ADMET 和生物标志物信息，加速生命科学领域研究。

Pharmacological Data

CAS LIFE SCIENCES

Clear All Filters

Ligand	Target	Function	Parameter	Value	Disease	Organism	Assay
22002-87-5	Lysophosphatidic acid receptor 1	-	EC50	0.08 μM	-	-	View Detail
22002-87-5	Lysophosphatidic acid receptor 2	-	EC50	0.003 μM	-	Homo sapiens	View Detail
22002-87-5	Lysophosphatidic acid receptor 3	-	EC50	0.29 μM	-	-	View Detail
22002-87-5	Lysophosphatidic acid receptor 4	-	EC50	0.57 μM	-	Homo sapiens	View Detail
22002-87-5	Lysophosphatidic acid receptor 5	-	EC50	0.14 μM	-	-	View Detail

ADME

Toxicity

Biomarkers

CAS LIFE SCIENCES

Biomarker	Biomarker Type	Disease	Category	Measurement	Details
ENPP2 (DNA)	Molecular	melanoma	Gene-disease association linked with genetic variation	Association score	View Detail
ENPP2 (DNA)	Molecular	breast cancer	Gene-disease association linked with genetic variation	Association score	View Detail
ENPP2 (DNA)	Molecular	breast carcinoma	Gene-disease association linked with genetic variation	Association score	View Detail

马库什检索

Markush: 利用马库什结构检索快速判断化合物新颖性和创造性，为化合物可专利性提供支持，降低侵权风险。

The screenshot shows the CAS Newton Patent Markush interface. The search results list one entry: **CN108570012 Markush Details**. The title is "1,3-Benzoxazine-2,4(3H)-dione derivative and its synthetic method and application for treating Alzheimer's disease". The assignee is Central South University, China, with a filing date of 2018-09-25. The patent status is "Alive". The patent claim 1 is displayed as "PatentPak" with a dropdown menu for "Full Text". The chemical structure of the compound is shown on the left. The interface includes navigation tabs for Substances, Reactions, References, and Suppliers, and a filter sidebar on the left.

专利浏览工具

PatentPak: 借助 CAS 的深度标引，快速定位专利中披露的物质。

The screenshot shows the CAS PatentPak interface. The patent document is WO 2025/261486 (PCT/CN2025/102372) on page 130. The text describes a 5-7 membered ring substituted with 1-3 substituents. The key substance is highlighted in yellow, and its CAS RN is 3108317-86-5. The interface includes a sidebar with "Key Substances in Patent" and "Analyst Markup Locations (3)". A blue arrow points from the "Key Substances" section to the highlighted substance in the patent text. The interface also includes a "DOWNLOAD" button and a "下载专利原文" button.

高效获取分析实验详情

CAS Analytical Methods: 便捷获取和对比来自权威期刊及专利中的分析方法详情, 提高分析化学研究的效率。

Analysis of Bacteria in Air by Microbial cell culture

分析试剂、材料、介质

CAS Method Number 1-103-CAS-263631	Method Category Air Analysis	Technique Microbial cell culture
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Analyte

Bacteria

Equipment Used

High voltage supply, 205B-15R, Bertan Associate, Inc., Valhalla, NY

实验仪器

Instructions

Development of the automated electrostatic sampler (AES)

- Construct a AES sampler consisting of a half-ball shape steel electrode (radius is 45 mm) with three aerosol inlets (radius is 3.5 mm) on the top and a circular copper plate electrode (6 and 16 mm in diameter) suited inside a circular plastic support.
- Build a plastic cylindrical reservoir (14 mm in diameter and 1 mm in height) with one inlet and one outlet made of copper (2 mm in diameter) above the plate electrode.
- During the sampler's operation, connect the AES sampler to a high voltage supply (model 205B-15R from Bertan Associate, Inc., Valhalla, NY) and draw the air from three air inlets where a particle charger (two copper sticks and one voltage supply up to 1.5 V) is also equipped.
- When the electrostatic field is present, collect the airborne particles into the liquid reservoir both by gravitational and electrostatic forces.
- Deliver the liquids containing the air samples in the reservoir to an antibody-based biosensor through the liquid outlets and a peristaltic pump.
- Model the electrostatic field distribution between two electrodes using ANSYS software.
- Operate the AES sampler (central electrode D = 16 mm) with sampling flow rate of 1.2 L/min at the applied sampling voltage of 20 kV.
- Operate the button aerosol sampler at the sampling flow rate of 5 L/min.
- Use a 30 min sampling to limit possible overgrowth of the collected microorganisms on 25 mm filter area.
- Culture the collected air sampling filters directly on Tryptic Soy Agar (TSA) plates at 26 °C for 3 days.
- For the AES sampler, filter the collected air samples in the reservoir first through a mixed cellulose ester (MCE) filter and then culture directly with the filter on TSA plates at 26 °C for 3 days.
- During the sampling, add 400 µL of 0.9% NaCl solution into the liquid reservoir.
- Count the colony forming units (CFUs) manually and calculate the biological collection efficiencies as the total CFU obtained per m³ of air sampled.

操作步骤

Validation

Concentration	250 CFU/m ³ (sample data)
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数据有效性

制剂 (配方) 检索工具

CAS Formulus: 高效获取制剂或配方的工艺、实验评估、目标成分及其常见配伍成分等信息, 探索合规要求。同时支持个性化设计配方或制剂。

Curcumin Loaded Oil-in-Water Nanoemulsions: Antifungal Agent or Drug Delivery System

Purpose	Target	Delivery Route	Physical Form	Source
Drug delivery systems, Fungicides	Candida albicans, Homo sapiens, Oral candidiasis, Vulvovaginal candidiasis, Wound infection, curcumin, fungal skin infections, skin candidiasis	Topical drug delivery systems	Emulsions	

Formulation Ingredients

制剂原料

Component	Function	Amount Reported	Optionality
Group: Oil-in-water nanoemulsions	-	49.5 µL	Mandatory
N-[2-(Dimethyloxidoamino)ethyl]pentadecanamide	pharmaceutical surfactant	3 w/w %	Mandatory
Glycerol monooctylate	-	2 w/w %	Mandatory
Water	-	95 w/w %	Mandatory
Curcumin	antimicrobial agent	-	Mandatory

More Formulations like this...

相似制剂

- Terbutaline Sulfate Tablet: Bronchodilators Purpose: Bronchodilators Target: Asthma, Bronchitis, Bronchosp... Delivery Route: Oral drug delivery syst... Physical Form: Tablets
- Terbutaline Sulfate: Bronchodilator Purpose: Bronchodilators Target: Homo sapiens Delivery Route: Oral drug delivery syst... Physical Form: tablet
- Terbutaline Sulfate-Tablet: Bronchodilators Purpose: Bronchodilators Target: Asthma, Bronchitis, Bronchosp... Delivery Route: Oral drug delivery syst... Physical Form: Tablets
- Terbutaline Sulfate: Bronchodilator Purpose: Bronchodilators Target: Homo sapiens Delivery Route: Oral drug delivery syst... Physical Form: tablet

Process

工艺信息

N-[2-(dimethyloxidoamino)ethyl]pentadecanamide and glycerol monooctylate were thermostatically maintained in baths at 25 °C, with stirring to equilibrate after step-wise addition of water to obtain oil-in-water nanoemulsion. curcumin solution (dissolved in dimethyl sulfoxide) was then encapsulated into the nanoemulsions to obtain curcumin loaded oil-in-water nanoemulsions.

Experimental Activity

实验评估

Descriptor	Notes	Details
antifungal activity	the effect of curcumin loaded oil-in-water nanoemulsions on reducing the growth of Candida albicans was assessed against Candida albicans, ATCC 10231 yeast strain.	27 %
cytotoxicity	the effect of curcumin loaded oil-in-water nanoemulsions on in-vitro cytotoxicity was assessed in NHDF cells human skin fibroblasts and the result was based on the cell viability.	the cell viability was diminished and as concentration increased, toxicity at higher doses was observed.
particle size	particle size of the nanoemulsion was assessed via dynamic light scattering using a Zetasizer nano ZS.	85 nm ± 3 nm
polydispersity index	particle size of the nanoemulsion was assessed via dynamic light scattering using a Zetasizer nano ZS.	0.17 ± 0.02
skin penetration efficacy	the effect of curcumin loaded oil-in-water nanoemulsions on ex-vivo skin penetration and interactions with stratum corneum was assessed after 5 h of exposure of pig ear skin, upon encapsulation of the composition with Nile red fluorescent probe.	A better promotion of Nile red penetration into the stratum corneum and its accumulation in the skin was observed.

Source Journal

Role of architecture of N-oxide surfactants in the design of nanoemulsions for Candida skin infection
Colloids and Surfaces, B: Biointerfaces
Language: English
Location: Article Page 1, 2, 3, 4, 5, 7, 10, Table 1, 2

Full Text | View in CAS Scifinder



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