+44 20 8123 2220
info@marketpublishers.com

Peripheral Liquid Embolic Agents Market Size and Forecast (2021 - 2031), Global and Regional Share, Trend, and Growth Opportunity Analysis Report Coverage: By Type (Polymerizing Liquid Embolic Agent and Precipitating Liquid Embolic Agent), Application (Endoleak Type II, Malformations, Bleedings and Trauma, Varicose Vein, Tumors, Visceral Aneurysm), and Geography (North America, Europe, Asia Pacific, Middle East & Africa, and South & Central America)

https://marketpublishers.com/r/P52793E8254AEN.html
Date: June 2024
Pages: 233
Price: US$ 5,190.00 (Single User License)
ID: P52793E8254AEN

Abstracts

The peripheral liquid embolic agents market is expected to grow from US$ 40.42 million in 2023 to US$ 81.41 million by 2031; it is anticipated to record a CAGR of 9.1% from 2023 to 2031.

Peripheral liquid embolic agents are substances used in interventional radiology procedures to block leaking blood vessel and malformations. These agents solidify after injecting which forms plug and block the blood flow to the targeted area.

Developments in Temperature-Induced Phase Change Systems and pH-Triggered Embolic Agents Acts as a Trend for Market Growth

Liquid embolism is a topic of great interest in bioengineering, particularly in peripheral procedures. Liquid embolic agents can penetrate peripheral, nidus, or distal areas where coils or catheters cannot reach. Although currently used liquid embolic agents

+44 20 8123 2220
info@marketpublishers.com

can meet most clinical needs, they have some shortcomings. Therefore, various novel liquid embolic agents have been developed to improve imaging characteristics, reduce complications, optimize flow performance, and achieve drug loading capability. The systematic investigation of additional important material characteristics such as associated side effects (e.g., toxicity and adhesion), biofunctional (biocompatibility, biodegradability, biomechanics, and bioactivity), and radiopacity is essential for the development of clinically tailored embolic agents in the field of minimally invasive imaging procedures.

Temperature-sensitive polymer solutions can change from a sol-injectable state to a gel state at room temperature in the body. Poly(N-isopropyl acrylamide) (PNIPAAm) exhibits a reversible phase transition in response to a lower critical solution temperature (LCST) of 32 °C. According to a study published in the Journal of Controlled Release by Qian et al. in 2015, poly(N-isopropylacrylamide-co-butylmethyl acrylate) gels with iohexol dispersions for TACE of liver cancer demonstrated effective embolization of renal arteries in rabbits and sustained release of doxorubicin. Similarly, as per a study published in the National Library of Medicine by Wang et al. in 2011, chitosan/?-glycerophosphate (C/GP) successfully closed renal arteries in rabbits, indicating to be a potential embolization agent. Likewise, Zhao et al. also investigated temperature-sensitive PNIPAAm-iohexol nano gels for embolization, according to a research study published Wiley Online Library in 2011. The hydrophobic interactions above the phase transition temperature (36.5 °C) lead to a hierarchical 3D gel network for in situ vessel casting. Compared to Lipiodol, a peripheral embolic agent, the nanogel provided better peripheral embolization in VX2 liver tumors in rabbits.

Furthermore, a poloxamer 407 (a triblock copolymer of polyethylene oxide a–polypropylene oxide b–polyethylene oxide a) containing a thermosensitive liquid embolic hydrogel has been proposed for liver cancer therapy. This composite hydrogel composed of poloxamer 407, hydroxymethyl cellulose, sodium alginate, and iodixanol (PSHI) presented two phases with increasing temperature: a flowing sol and a shrunken gel. Notably, complete occlusion of the VX2 liver cancer model was demonstrated with PSHI-Ca2+ as the tumor disappeared after embolization.

pH-sensitive active ingredients undergo a phase transition due to the pH change between the in vitro and physiological environments. These hydrogels swell and collapse in response to pH, which is used to control drug release.

As per a study published in the Royal Society of Chemistry by Nguyen et al. in 2016, PCLA-PUSSM, a copolymer consisting of poly(?-caprolactone-co-lactide) (PCLA), PEG,

and poly(urethane sulfide sulfamethazine) (PUSSM) was developed, for TACE of HCC. This biodegradable material was loaded with doxorubicin and exhibited a phase transition in response to decreasing pH. The hydrogel successfully embolized a liver tumor from a VX2 rabbit tumor model while providing a sustained release of doxorubicin. In a rat model, embolization stopped blood supply to the tumor, creating an acidic environment through hypoxia and inducing lactic acidosis. The low pH triggered drug release and successfully inhibited tumor growth in vivo.

Some of the liquid embolic agents under trial for temperature-sensitive and pH-triggered are given below:

Table 1. Liquid Embolic Agents Under Trial for Temperature-Sensitive and pH-Triggered Gelation

Liquid Embolic Agents Mechanism Advantage Classical Usage Scenarios or Trial Conditions

Chitosan/?- glycerophosphate (chitosan/?-GP) Temperature- and pH-triggered gelation Drug delivery Renal arteries in rabbits

Silk-Elastin-Like proteins (SELPs) Temperature- triggered gelation Drug delivery Primary VX2 liver tumors in rabbit

Poly(N-isopropylacrylamide-co-butyl methylacrylate) nanogel (PIB nanogel) Temperature- triggered gelation A better embolization than lipiodol Primary VX2 liver tumors in rabbit

Poloxamer 407 Temperature- triggered gelation Temporary vascular occlusion Renal arteries in canines

poloxamer 407, sodium alginate, hydroxymethyl cellulose, iodixanol, and calcium ions (PSHI-Ca2+) Temperature- triggered gelation Radiopacity Primary VX2 liver tumors in rabbit

Sulfamethazine-based hydrogel pH-triggered gelation Drug delivery Primary VX2 liver tumors in rabbit

Poly(Amino Ester Urethane) block polymer (PEAU) Temperature- and pH-triggered gelation Drug delivery Primary VX2 liver tumors in rabbit

+44 20 8123 2220
info@marketpublishers.com

Thus, the growing focus and developments on temperature-induced phase change systems and pH-triggered embolic agents are expected to bring new trends in the peripheral liquid embolic agents market in the coming years.

The peripheral liquid embolic agents market analysis has been carried out by considering the following segments: type, application and geography. Based on type, the peripheral liquid embolic agents market is bifurcated into polymerizing liquid embolic agents and precipitating liquid embolic agents. In terms of application, the peripheral liquid embolic agents market is classified into endoleak type II, malformations, bleedings and trauma, varicose vein, tumors, and visceral aneurysm..

The scope of the peripheral liquid embolic agents market report covers North America (the US, Canada, and Mexico), Europe (Spain, the UK, Germany, France, Italy, and the Rest of Europe), Asia Pacific (South Korea, China, Japan, India, Australia, and the Rest of Asia Pacific), Middle East & Africa (South Africa, Saudi Arabia, the UAE, and the Rest of Middle East & Africa), and South & Central America (Brazil, Argentina, and the Rest of South & Central America). North America is the biggest contributor to the global peripheral liquid embolic agents market. Asia Pacific is predicted to show the highest CAGR in the market during 2023–2031.

The North America regional market growth is attributed to the increasing cases of aneurysms, trauma, and others across the region. The market in Canada is anticipated to grow because of rising government support for addressing the increasing concerns regarding peripheral disorders. The market in Mexico is estimated to grow owing to the growing pharma industries and medical tourism. The Asia Pacific peripheral liquid embolic agents market is segmented into China, Japan, India, Australia, South Korea, and the Rest of Asia Pacific. The market growth in the region is driven by various factors such as the rising prevalence of peripheral artery diseases (PAD), increasing demand for minimally invasive procedures, growing number of hospitals and ambulatory surgery centers, rising focus on developing countries by market players , and developing healthcare infrastructure in Asia Pacific

Centers for Disease Control and Prevention (CDC), European Medicines Agency (EMA), The Pan American Health Organization (PAHO), and World Health Organization (WHO) are a few key primary and secondary sources referred to while preparing the report on the peripheral liquid embolic agents market.

+44 20 8123 2220
info@marketpublishers.com

Contents

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

9. PERIPHERAL LIQUID EMBOLIC AGENTS MARKET – GEOGRAPHICAL ANALYSIS

10. INDUSTRY LANDSCAPE

+44 20 8123 2220
info@marketpublishers.com

11. COMPANY PROFILES

+44 20 8123 2220
info@marketpublishers.com

+44 20 8123 2220
info@marketpublishers.com

I would like to order

Product name: Peripheral Liquid Embolic Agents Market Size and Forecast (2021 - 2031), Global and Regional Share, Trend, and Growth Opportunity Analysis Report Coverage: By Type (Polymerizing Liquid Embolic Agent and Precipitating Liquid Embolic Agent), Application (Endoleak Type II, Malformations, Bleedings and Trauma, Varicose Vein, Tumors, Visceral Aneurysm), and Geography (North America, Europe, Asia Pacific, Middle East & Africa, and South & Central America)

Product link: https://marketpublishers.com/r/P52793E8254AEN.html

Price: US$ 5,190.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/P52793E8254AEN.html

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

**All fields are required

Custumer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms

+44 20 8123 2220
info@marketpublishers.com

& Conditions at https://marketpublishers.com/docs/terms.html

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970