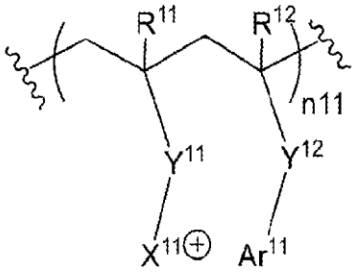
Hokkaido Univ. Technology

Embolizing agent and kit for blood vessel Embolization

No dosage restrictions and no catheter adhesion

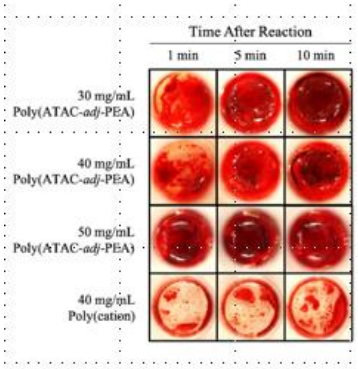


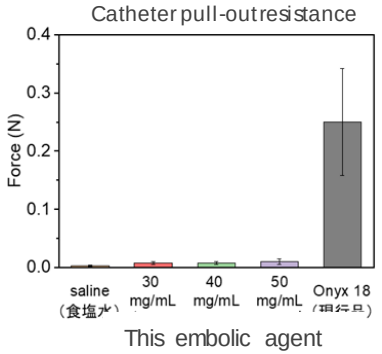
Overview

Vascular embolization treatment, a minimally invasive surgery for various blood vessel - related conditions, has emerged as a crucial method in treating such as hemorrhage, arteriovenous malformation, aneurysms, and hypervascular tumors. Liquid agents present unique advantages, penetrating distal peripheral vasculature inaccessible to solid counterparts while allowing modulation of penetration depth through compositional adjustments. Conventionally used liquid embolic substances include N-butyl cyanoacrylate (NBCA) and ethylene vinyl alcohol copolymer (Onyx™). NBCA embolizes blood vessels by polymerization reaction with blood, and Onyx™ embolizes blood vessels by precipitation and aggregation in blood. However, in NBCA and Onyx™, there is a problem that the embolic substances may stick to the tip of the catheter, injure the inner wall of the blood vessel and the catheter insertion site, and cause bleeding.

According to the present invention, it is possible to provide an embolic agent and a kit for blood vessel embolization comprising the embolic agent and the embolic agent having excellent injectability with a syringe and safety and stability in vivo while having blood vessel embolization properties equivalent to those of conventional embolic agents. The present invention comprises as an active ingredient a copolymer of a monomer containing a cationic functional group and a monomer containing an aromatic group, wherein at least a part of the copolymer has a structure represented by general formula.

Concentration of embolic substance ≥ 30 mg/mL & stable blood gel formed 1 min after addition without adhesion to catheter





Product Application

- Intravascular embolic substances for cerebral intravascular
- Surgical hemostatic agents, adhesives
- Wound dressing agent for skin defect

Related Works

[1] Z.Jin et al., PNAS 2022 Vol.119 No.42 e2206685119.

IP Data

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