

Anti-inflammatory Polymer for Aging Society

Keywords: Anti-inflammatory therapy, apoptosis, phosphatidylserine

Mitsuhiro Ebara

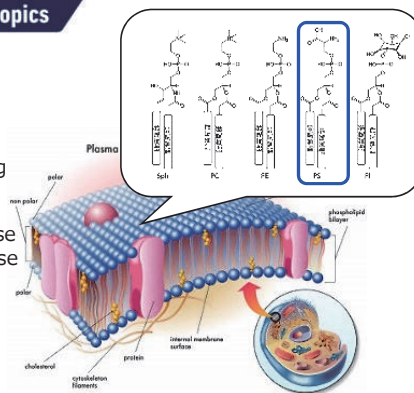
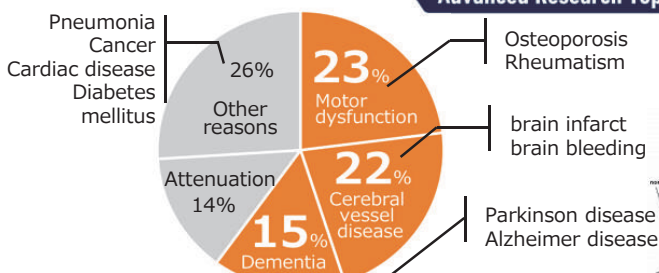
MANA Associate Principal Investigator, Nano-System Field / Mechanobiology Group
 EBARA.Mitsuhiro@nims.go.jp | <http://www.nims.go.jp/bmc/group/smartbiomaterials/>



- Background**
- Inflammation accounts for more than 60% of the disease cause which require nursing care.
 - Apoptotic cells have attracted attention for use in immunosuppressive therapy.

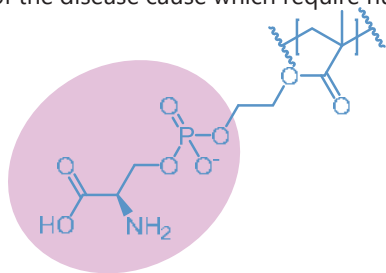
- Aim**
- We newly design apoptotic cell membrane-inspired monomer and polymer, MPS, using phosphoramidite chemistry.
 - The postinflammatory effects of MPS on macrophage are examined.

Advanced Research Topics

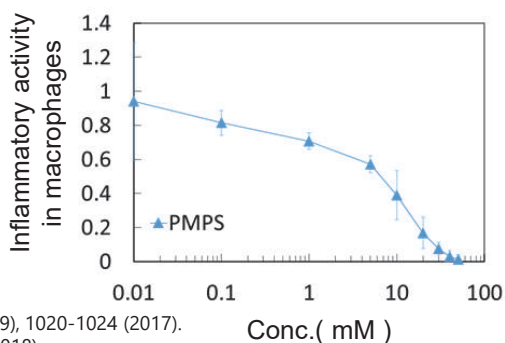


Structure of phospholipids.

Inflammation will account for more than 60% of the disease cause which require nursing care.



Apoptotic cell membrane-mimetic anti-inflammatory polymer (MPS).



- Publications**
- Y. Nakagawa et al., ACS Macro Letter, 6 (9), 1020-1024 (2017).
 - Y. Nakagawa et al., Polymer, 134, 85-9 (2018).
 - 荻原充宏ら 特許第6206916号

Summary

- Synthesis of MPS polymer.
- Anti-inflammatory effect of MPS in macrophage.
- Can be fabricated into different forms.

Research outcome

- In vivo examinations
- Fabrication into particles, hydrogel, fibers.
- Comparison with conventional anti-inflammatory drugs.