

# EX-PolyP<sup>®</sup> (sodium polyphosphate)

It is known that polyphosphate (polyP), a biological macromolecule, functions differently depending on its molecular weight (chain length). PolyP binds to various proteins and modifies their functions. Recent research demonstrated that polyP is involved in blood coagulation<sup>1)</sup>, complement activation<sup>2)</sup>, inhibition of vascular endothelial inflammation<sup>3)</sup>, infection control<sup>4)</sup>, primordial chaperones<sup>5)</sup>, functional modification of cytokines<sup>6)</sup>, as well as inhibition of binding between spike proteins in COVID-19 and ACE2 receptor<sup>7)</sup>. Since these polyP functions depend on its chain length, polyP with a limited molecular weight range should be used for accurate experiments.

RegeneTiss Inc. succeeded in controlling the molecular weight of polyP and launched EX-polyP<sup>®</sup> (sodium polyphosphate) limited to a narrow molecular weight range, which has never produced before.

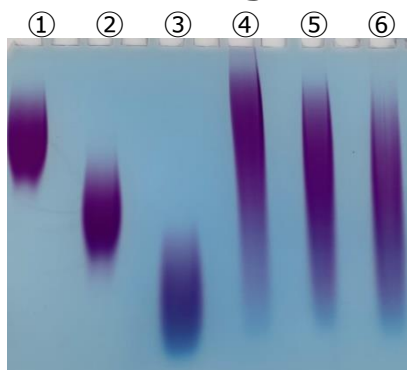
Three types of product, long-chain (L), medium-chain (M) and short-chain (S) polyP which are found in living organisms, are available. It is possible to verify the functional difference of different chain length of polyP with high precision.

Please use it for various researches.

## 【Features】

- ① Each molecular weight range is strictly controlled by supplier's original purification method
- ② Available in 3 types, including long, medium, and short chain lengths
- ③ Ready-to-use aqueous solution

## 【Molecular weight distribution of polyphosphate】



Migration distance in electrophoresis

- ① Long-Chain (L) (Average chain length:130)
- ② Medium-Chain (M) (Average chain length:60)
- ③ Short-Chain (S) (Average chain length:14)
- ④ Other company (Average chain length:75 +)
- ⑤ Other company (Average chain length:65)
- ⑥ Other company (Average chain length:45)

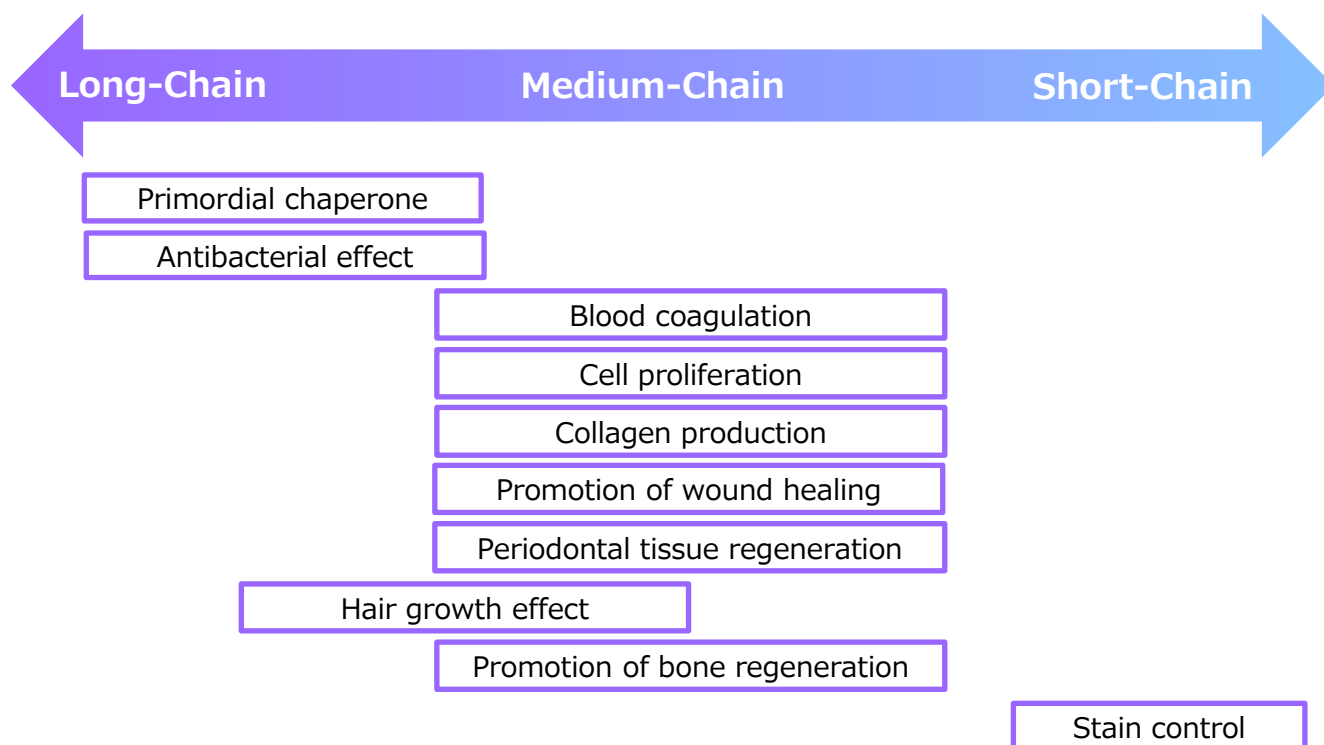
### Electrophoresis conditions

- 15% PAGE (TAE buffer, 150V, 50min)
- ①-③ Samples (2μL/lane): L, M, S each 0.1M (as orthophosphate)
- ④-⑥ Samples (5 μL/lane): 75+, 65, 45 each 0.1M
- Stained with toluidine blue

## Literature

- 1) Müller, F. et al.: *Cell.*, **139**, 1143 (2009)
- 2) Wijeyewickrema, L. C. et al.: *Blood.*, **128**, 1766 (2016)
- 3) Terashima-Hasegawa, M. et al.: *Biochem. Pharmacol.*, **159**, 96 (2019)
- 4) Roewe J. et al.: *Nature Com.*, **11**, 4035 (2020)
- 5) Gray, M. J. et al.: *Mol. Cell.*, **53**, 689 (2014)
- 6) Shiba, T. et al.: *J. Biol. Chem.*, **278**, 26788 (2003)
- 7) Neufurth, M. et al: *Biochem Pharmacol.*, **182**, 114215 (2020)

## 【Effect of polyP at different chain length】



### 【Product List】

- ① Short-Chain(S) (Average chain length:14)
- ② Medium-Chain(M) (Average chain length:60)
- ③ Long-Chain(L) (Average chain length:130)
- ④ S, M, L Set

Product Number	Manufacturer Number	Product Name	Package Size
631-51681	EXP-S	0.5M EXCLUSIVE POLYPHOSPHATE Short-Chain (About 25mg)	0.5ml
634-51671	EXP-M	0.5M EXCLUSIVE POLYPHOSPHATE Medium-Chain (About 25mg)	0.5ml
637-51661	EXP-L	0.5M EXCLUSIVE POLYPHOSPHATE Long-Chain (About 25mg)	0.5ml
638-51691	EXP-SML Set	0.5M EXCLUSIVE POLYPHOSPHATE S,M,L Set	0.5ml×3

\*Freezing is recommended for long-term storage.

Listed products are intended for laboratory research use only, and not to be used for drug, food or human use. / Please visit FUJIFILM Wako Laboratory Chemicals site: <https://labchem-wako.fujifilm.com/> / This leaflet may contain products that cannot be exported to your country due to regulations. / Bulk quote requests for some products are welcomed. Please contact us.

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