



# Animal Cellulose

A new opportunity for  
biomaterial R&D

## 教授からのコメント /

### COMMENT FROM PROFESSOR

«Animal cellulose is almost untapped and overlooked biological material. Nonetheless, it shows unexpected beautiful structural and material properties. It would be our great honor to contribute to the world through this project together with you.»



**Dr. Noriyuki Satoh**

Professor  
Marine Genomics Unit

Prof. Satoh led a world-wide genome project of tunicate as early as 2002 (*Science* **298**: 2079). This tunicate genome revealed only a single copy of gene for cellulose synthase (*CesA*), as opposed to the multiple copies in plants. This discovery advanced functional research of *CesA* significantly.

Past Awards: Alexander Kowalevsky Medal in 2005 (St. Petersburg Academy of Science) and Edwin Grant Conklin Medal in 2010 (Amer. Soc. Develop. Biol.).

## 研究概要 / SUMMARY

Plant cellulose, the largest biological resource on earth, is globally exploited as industrial material. Cellulose is also produced by marine animals called tunicates. We showed that tunicate cellulose is structurally distinct from plant cellulose at the nano scale. Moreover, tunicate cellulose is not a mere rigid building block (as in plant cell walls), but soft and elastic, thereby contributing to unique animal biology, like filter-feeding, immune cell reservoir, and gut homeostasis. Animal cellulose thus provides an opportunity to develop new and unanticipated uses of this biomaterial.

## 寄附金の使途 / USE OF DONATIONS

- Hire additional researchers
- Enable state-of-the-art solutions to technical challenges

## 寄附金の特典 / BENEFITS

1. The research project can be named after the sponsor.
2. Research outcomes can be a part of Corporate Social Responsibility actions on "Biomaterials."
3. Your support will be acknowledged in scientific publications and recognized by scientists around the world.