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Figure 10. Hydrolysis kinetics of CTS-g-GMA by lysozyme, a) pH 5, b) pH 7.

Figure 11. Hydrolysis kinetics of (CTS-g-GMA)-X by lysozyme, a) pH 5, b) pH 7.

Table 1.

Polymer	P (mol m^{-1} s^{-1} Pa^{-1})	Polymer	P (mol m^{-1} s^{-1} Pa^{-1})
Z11B	2.89×10^{-15}	Z11A	6.31×10^{-15}
Z12B	---	Z12A	9.71×10^{-15}
Z13B	2.59×10^{-15}	Z13A	3.51×10^{-15}
Z14B	1.19×10^{-15}	Z14A	1.42×10^{-14}

Table 2.

Polymer	P (mol m^{-1} s^{-1} Pa^{-1})	Polymer	P (mol m^{-1} s^{-1} Pa^{-1})
Polyester[24]	1.08×10^{-12}	Milk serum:Glycerol (15:1)[24]	2.92×10^{-13}
CTS (in Acetic Acid)[25]	1.77×10^{-13}	Sodium Caseinate (CS)[26]	2.70×10^{-12}
CTS-CS[27]	5.5×10^{-12}	Beeswax[24]	5.71×10^{-10}
Z14B	1.19×10^{-15}	Z14A	1.42×10^{-14}

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References

1. Marieb EN and Hoehn K, *Human Anatomy and Physiology*. 2007, US: 478-479.
2. Schwab, M.E., *Repairing the injured spinal cord.* Science, 2002. **295**(5557): p. 1029-31.
3. Dumont, R.J., et al., *Acute spinal cord injury, part I: pathophysiologic mechanisms.* Clin Neuropharmacol, 2001. **24**(5): p. 254-64.
4. Schwab, M.E. and D. Bartholdi, *Degeneration and regeneration of axons in the lesioned spinal cord.* Physiol Rev, 1996. **76**(2): p. 319-70.
5. Bracken, M.B., et al., *Methylprednisolone or tirilazad mesylate administration after acute spinal cord injury: 1-year follow up. Results of the third National Acute Spinal Cord Injury randomized controlled trial.* J Neurosurg, 1998. **89**(5): p. 699-706.
6. World Health Organization, *International Perspectives on Spinal Cord Injury.* International Spinal Cord Society, 2013: p. 221.
7. National Spinal Cord Injury Statistical Center, *Spinal Cord Injury Model Systems - 2015 Annual Report*, in *Spinal Cord Injury Model Systems*. 2015, SCIMS-NIDRR: Birmingham, Alabama.
8. Woerly, S., et al., *Spinal cord repair with PHPMA hydrogel containing RGD peptides (NeuroGel).* Biomaterials, 2001. **22**(10): p. 1095-111.
9. Larner, A.J., A.R. Johnson, and R.J. Keynes, *Regeneration in the vertebrate central nervous system: phylogeny, ontogeny, and mechanisms.* Biol Rev Camb Philos Soc, 1995. **70**(4): p. 597-619.
10. Mason, D.Y. and C.R. Taylor, *The distribution of muramidase (lysozyme) in human tissues.* Journal of Clinical Pathology, 1975. **28**(2): p. 124-132.
11. Thammasirirak, S., et al., *Purification, characterization and comparison of reptile lysozymes.* Comp Biochem Physiol C Toxicol Pharmacol, 2006. **143**(2): p. 209-17.
12. Gooday, G.W., *Physiology of microbial degradation of chitin and chitosan.* Biodegradation, 1990. **1**(2): p. 177-190.
13. Freier, T., et al., *Controlling cell adhesion and degradation of chitosan films by N-acetylation.* Biomaterials, 2005. **26**(29): p. 5872-8.
14. Lee, K.Y., W.S. Ha, and W.H. Park, *Blood compatibility and biodegradability of partially N-acylated chitosan derivatives.* Biomaterials, 1995. **16**(16): p. 1211-6.
15. Milas, M., M. Rinaudo, and B. Tinland, *The viscosity dependence on concentration, molecular weight and shear rate of xanthan solutions.* Polymer Bulletin, 1985. **14**(2): p. 157-164.
16. Kasaai, M.R., J. Arul, and G. Charlet, *Intrinsic viscosity–molecular weight relationship for chitosan.* Journal of Polymer Science Part B: Polymer Physics, 2000. **38**(19): p. 2591-2598.
17. Elizalde-Pena, E.A., et al., *Synthesis and characterization of a hybrid (chitosan-g-glycidyl methacrylate)-xanthan hydrogel.* J Biomater Sci Polym Ed, 2013. **24**(12): p. 1426-42.
18. American Society for Testing Materials, *Standard Test Methods for Water Vapor Transmission of Materials.* E96, 2015.

19. Biagini, G., et al., *Wound management with N-carboxybutyl chitosan.* Biomaterials, 1991. **12**(3): p. 281-6.
20. Chandy, T. and C.P. Sharma, *Chitosan--as a biomaterial.* Biomater Artif Cells Artif Organs, 1990. **18**(1): p. 1-24.
21. Barranco-Florido, J.E., et al., *Criteria for the selection of strains of entomopathogenic fungi Verticillium lecanii for solid state cultivation.* Enzyme and Microbial Technology, 2002. **30**(7): p. 910-915.
22. Pedroza A, Arias J, and Poutou R, *Tecnología de las Fermentaciones*. 1st Edition ed. 1999, Bogotá, Colombia: CEJA.
23. Khwaldia, K., et al., *Properties of Sodium Caseinate Film-Forming Dispersions and Films.* Journal of Dairy Science. **87**(7): p. 2011-2016.
24. Park, S.Y., K.S. Marsh, and J.W. Rhim, *Characteristics of Different Molecular Weight Chitosan Films Affected by the Type of Organic Solvents.* Journal of Food Science, 2002. **67**(1): p. 194-197.
25. Khwaldia, K., et al., *Mechanical and barrier properties of sodium caseinate–anhydrous milk fat edible films.* International Journal of Food Science & Technology, 2004. **39**(4): p. 403-411.
26. Rivas-Araiza RN, *Estudio de las Interacciones Moleculares del Sistema Quitosano-Caseinato de Sodio*. 2005, Cinvestav: Querétaro.
27. Wrathall, J.R., R.K. Pettegrew, and F. Harvey, *Spinal cord contusion in the rat: production of graded, reproducible, injury groups.* Exp Neurol, 1985. **88**(1): p. 108-22.
28. Domard A. and Domard M., *Chitosan: Structure–Properties Relationship and Biomedical Applications*, ed. P. Biomaterials. 2002, New York, USA.
29. Maeda, R., M. Matsumoto, and K. Kondo, *Enzymatic hydrolysis reaction of water-soluble chitin derivatives with egg white lysozyme.* Journal of Fermentation and Bioengineering, 1997. **84**(5): p. 478-479.
30. Becker, A., et al., *Xanthan gum biosynthesis and application: a biochemical/genetic perspective.* Appl Microbiol Biotechnol, 1998. **50**(2): p. 145-52.
31. Sonohata, M., et al., *Actions of noradrenaline on substantia gelatinosa neurones in the rat spinal cord revealed by in vivo patch recording.* J Physiol, 2004. **555**(Pt 2): p. 515-26.
32. Barnes, D. *Spinal Cord Injury*. 2016; Available from: http://biologyonline.us/Online%20A&P/AP%202/Northland/AP2lab/Lab%201%20online/lab%202/Spinal%20cord%20injury.htm.