Covalent incorporation of tobacco mosaic virus increases the stiffness of poly(ethylene glycol) diacrylate hydrogels

A. Southan,*a T. Lang,a M. Schweikert,b G. E.M. Tovar,a,c C. Wege,a S. Eiben,*d

a Institute of Interfacial Process Engineering and Plasma Technology IGVP, University of Stuttgart, Nobelstr. 12, 70569 Stuttgart, Germany. Tel: +49 711 68568162; E-mail: alexander.southan@igvp.uni-stuttgart.de.
b Department of Biobased Materials, Institute of Biomaterials and Biomolecular Systems, University of Stuttgart, Pfaffenwaldring 57, 70569 Stuttgart, Germany.
c Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, Nobelstr. 12, 70569 Stuttgart, Germany.
d Department of Molecular Biology and Plant Virology, Institute of Biomaterials and Biomolecular Systems, University of Stuttgart, Pfaffenwaldring 57, 70569 Stuttgart, Germany; E-mail: sabine.eiben@bio.uni-stuttgart.de.

* Corresponding authors

Table of contents

1. Rheology data of hydrogels ........................................................................................................................................... 2
   1.1 PEG-DAA hydrogels ............................................................................................................................................... 2
   1.2 TMV_CYS containing hydrogels .......................................................................................................................... 3
   1.3 wt-TMV containing hydrogels .............................................................................................................................. 4
2. Photos of cured TMV containing hydrogels .................................................................................................................. 5
3. Micro BCA calibration of wt-TMV and TMV_CYS ........................................................................................................ 5
1. Rheology data of hydrogels

1.1 PEG-DA hydrogels

Figure 1 Amplitude sweep (top) and frequency sweep (bottom) of hydrogels prepared from PEG-DA without the addition of TMV particles.
1.2 $\text{TMV}_{\text{Cys}}$ containing hydrogels

**Figure 2** Amplitude sweep (top) and frequency sweep (bottom) of hydrogels prepared from PEG-DA with the addition of $\text{TMV}_{\text{Cys}}$. 
1.3 wt-TMV containing hydrogels

Figure 3 Amplitude sweep (top) and frequency sweep (bottom) of hydrogels prepared from PEG-DA with the addition of wt-TMV.
2. Photos of cured TMV containing hydrogels

![Representative photos of PEG-DA hydrogels containing 0.1, 0.3, 1.0 or 2.0 wt. % of TMV<sub>Cys</sub>, wt-TMV or no TMV respectively. All hydrogels had a thickness of 1 mm and a diameter of 20 mm and were slightly opaque.](image)

3. Micro BCA calibration of wt-TMV and TMV<sub>Cys</sub>

![Typical calibration measurements of wt-TMV (red circles) and TMV<sub>Cys</sub> (black squares) measured with the micro BCA assay in SPP buffer.](image)