

Supporting information for "Amino acids as co-amorphous excipients for simvastatin and glibenclamide: physical properties and stability" by Riikka Laitinen, Korbinian Löbmann, Holger Groganz, Clare Strachan and Thomas Rades. This material is available free of charge via the Internet at <http://pubs.acs.org>.

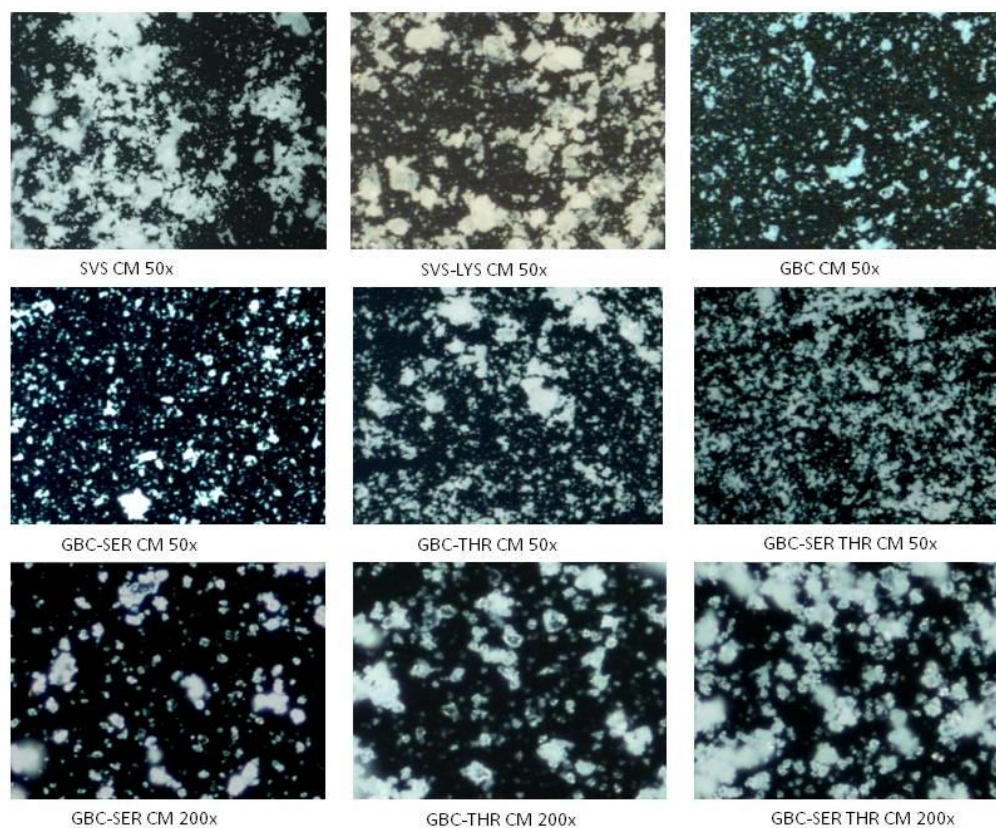


Figure 1. Polarized light microscopy (PLM, Nikon LV 100D, Japan) images of the X-ray amorphous samples showing no birefringence.

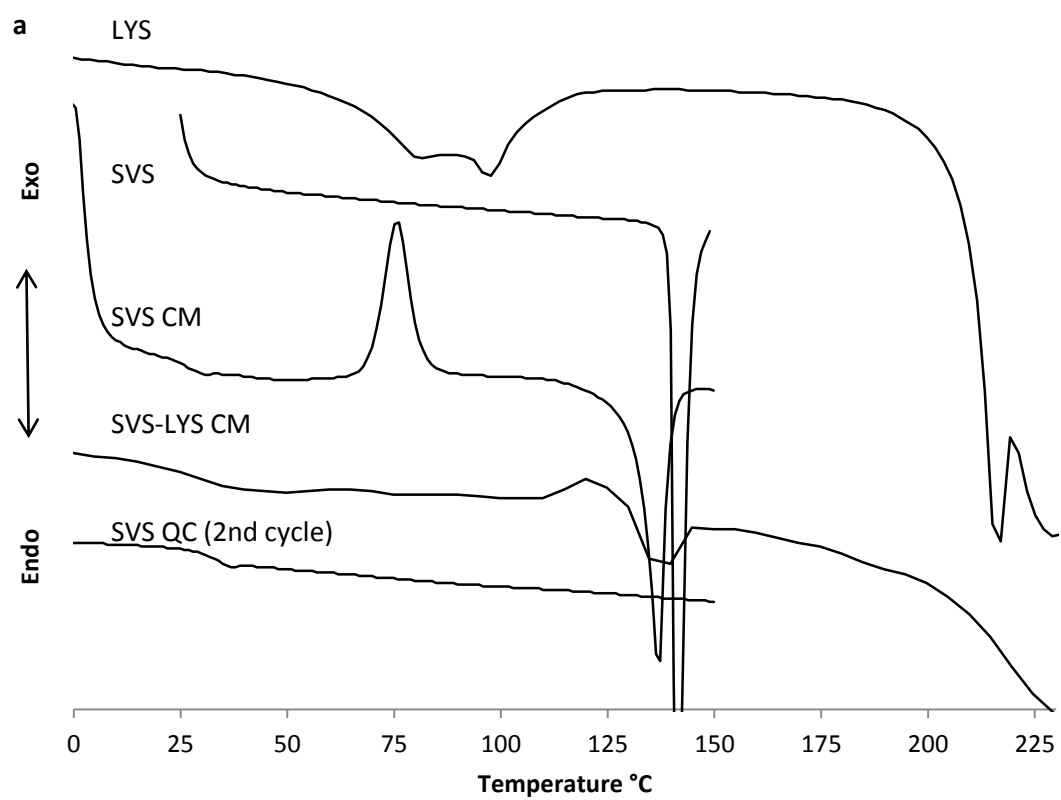


Figure 2a. DSC thermograms of the materials used.

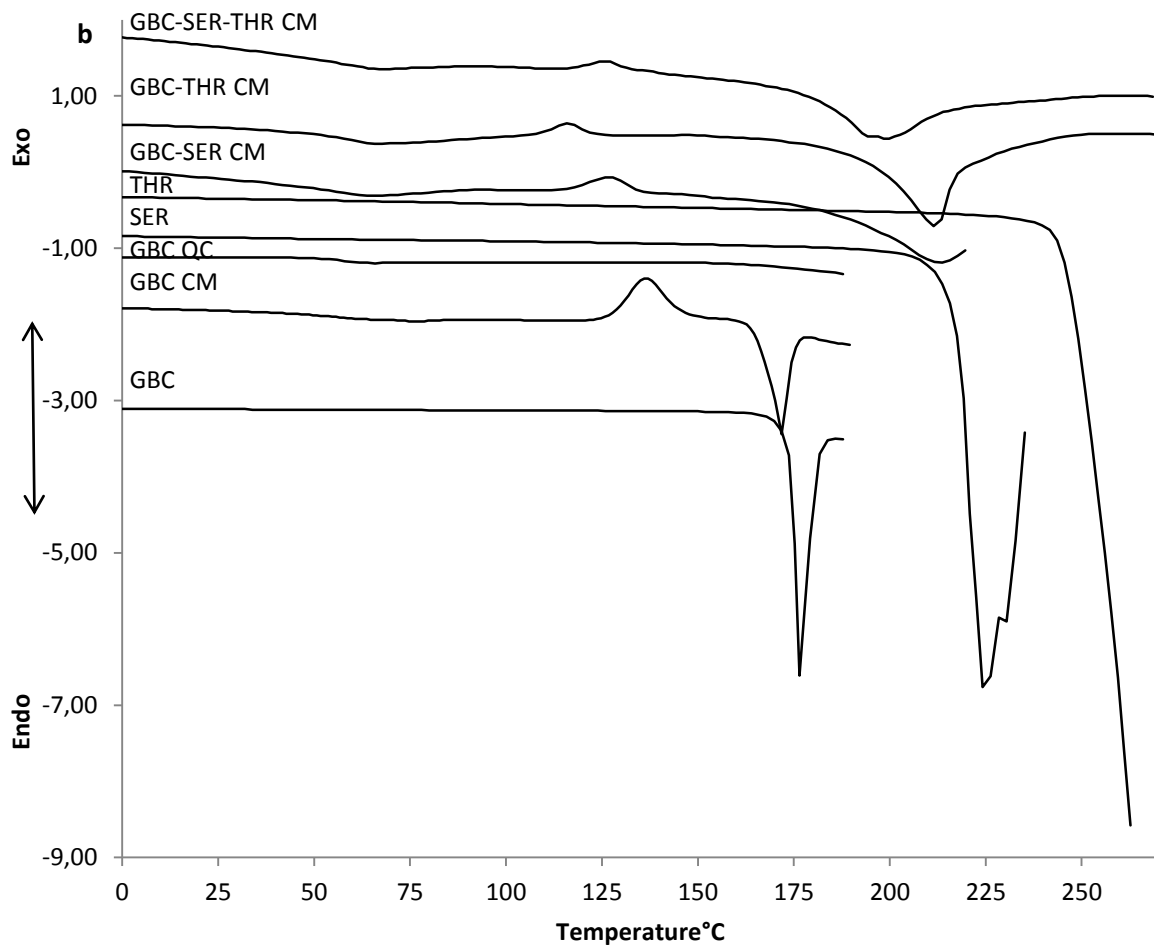


Figure 2b. DSC thermograms of the materials used.

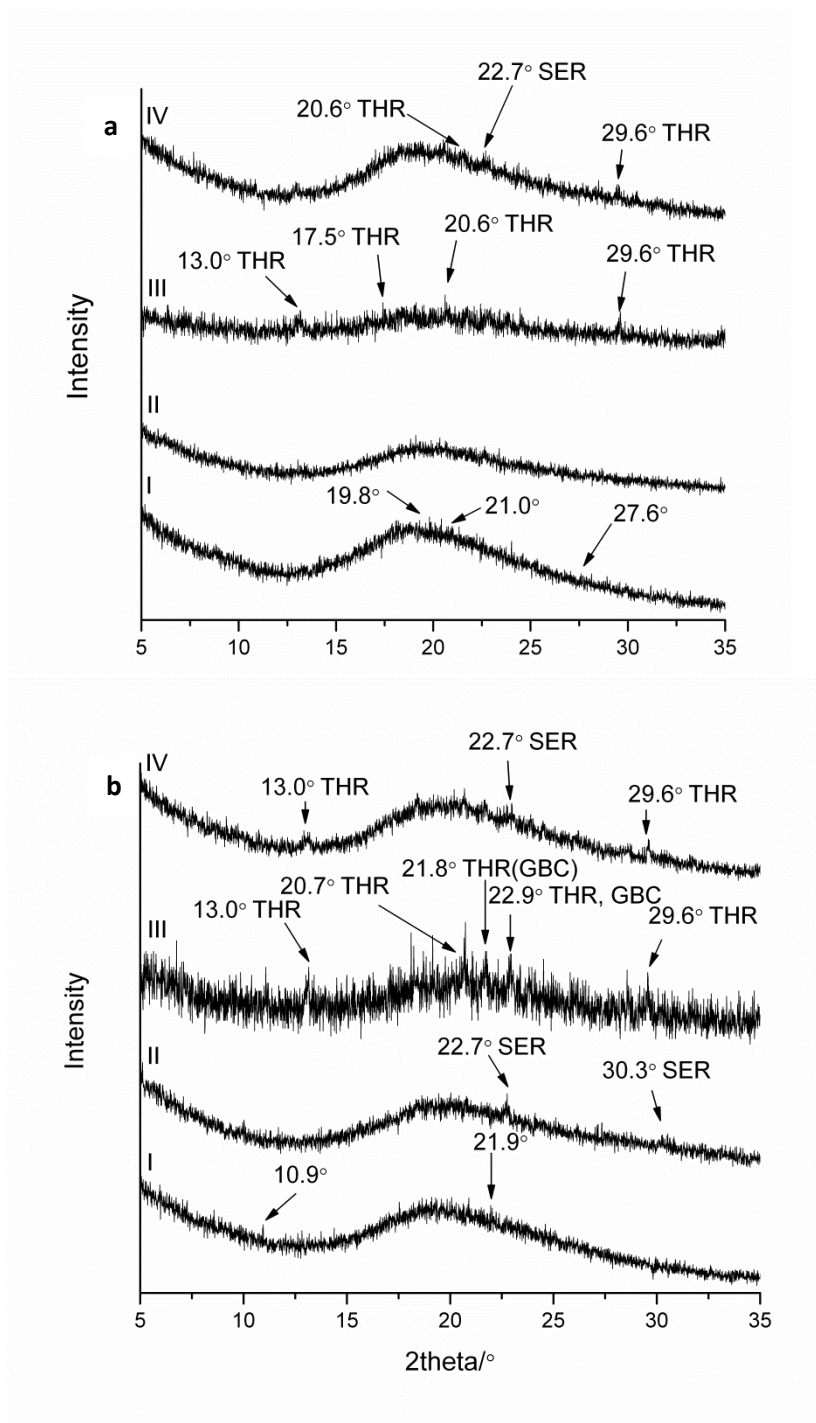


Figure 3. XRPD diffractograms for GBC formulations during storage at a) 4°C/0% RH: GBC CM at 5 months (I), GBC-SER CM at 6 months (II), GBC-THR CM at day 44 (III) and GBC-SER-THR CM at 3 months (IV); b) ambient/60% RH: GBC CM at 5 months (I), GBC-SER CM at 5 months (II), GBC-THR CM at day 26 (III) and GBC-SER-THR CM at 3 months (IV).

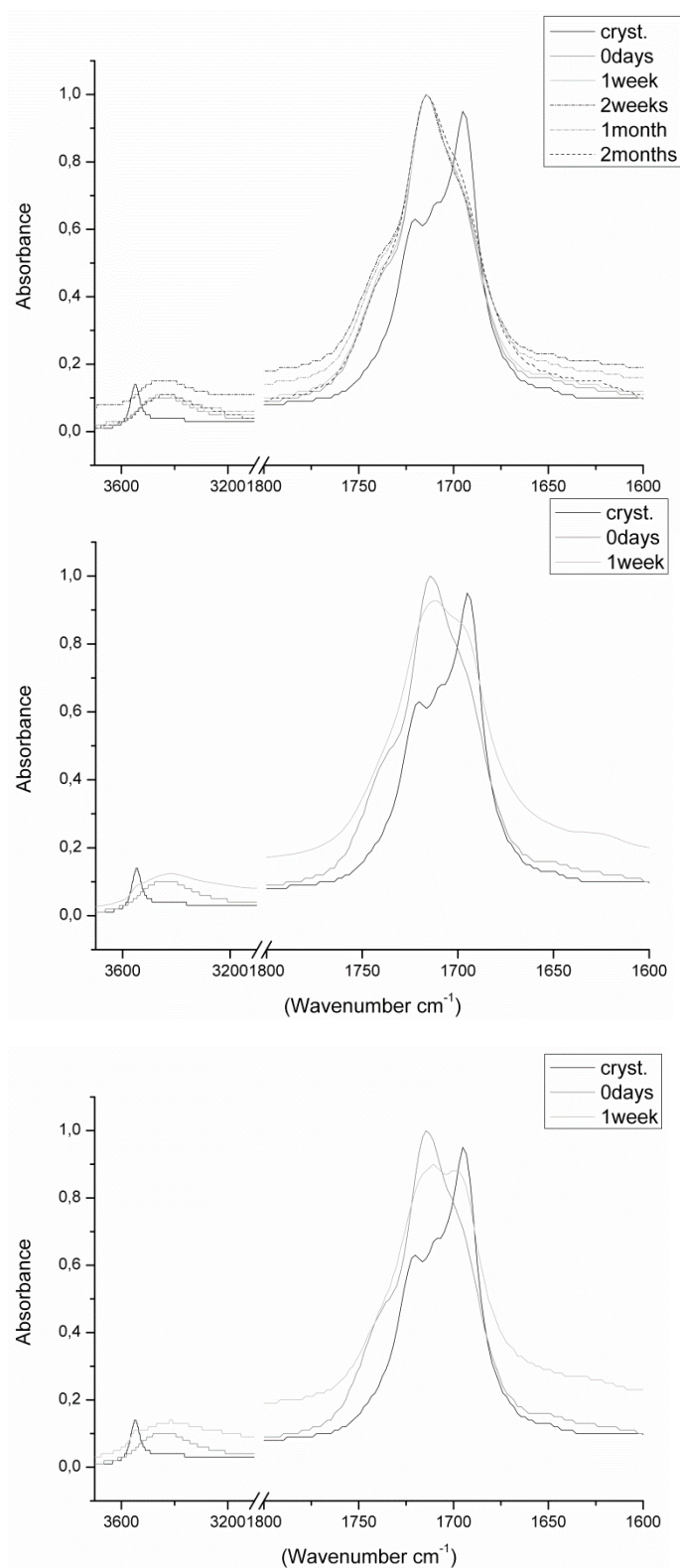


Figure 4. FTIR spectra of SVS CM stored at 4°C/0% RH (upper), 40°C/0% RH (middle) and 25°C/60% RH (lower), showing changes in the -OH and C=O absorption regions due to recrystallization (in the case of 40°C/0% RH and 25°C/60% RH).

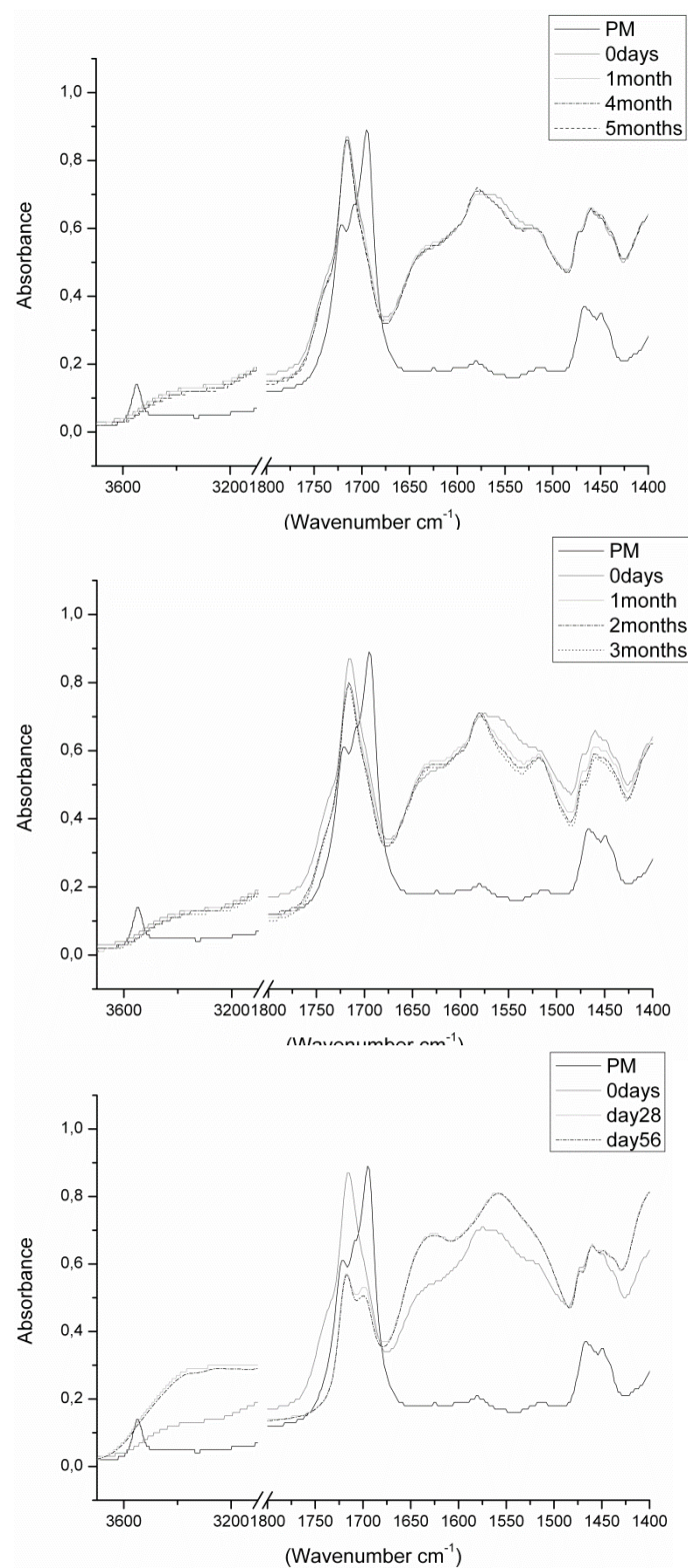


Figure 5. FTIR spectra of SVS –LYS CM stored at 4°C/0% RH (upper), 40°C/0% RH (middle) and 25°C/60% RH (lower), showing changes in the -OH and C=O absorption regions due to recrystallization (in the case of 25°C/60% RH) .



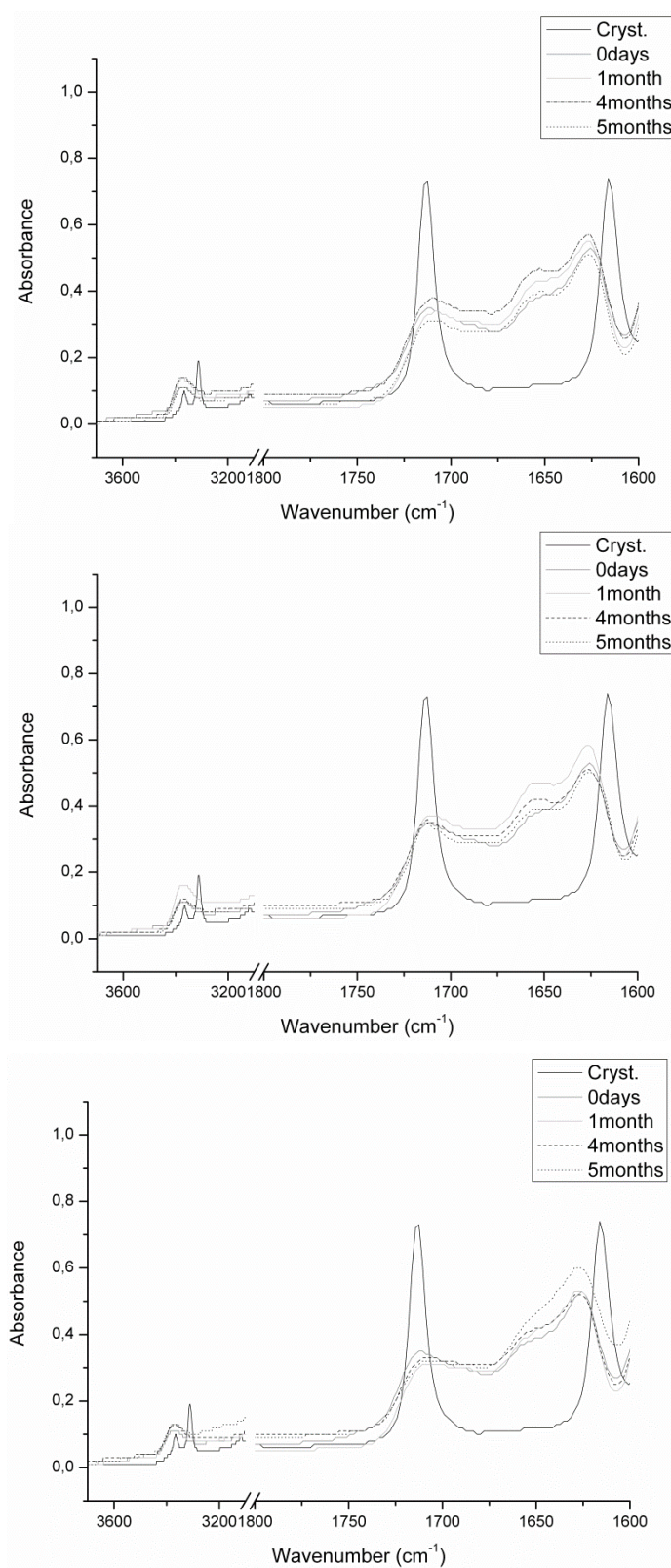


Figure 6. FTIR spectra of GBC CM stored at 4°C/0% RH (upper), 40°C/0% RH (middle) and 25°C/60% RH (lower), showing small changes in the C=N stretch vibrations regions indicating disappearance of the imidic acid tautomer of GBC due to recrystallization (in the case of 25°C/60% RH) .

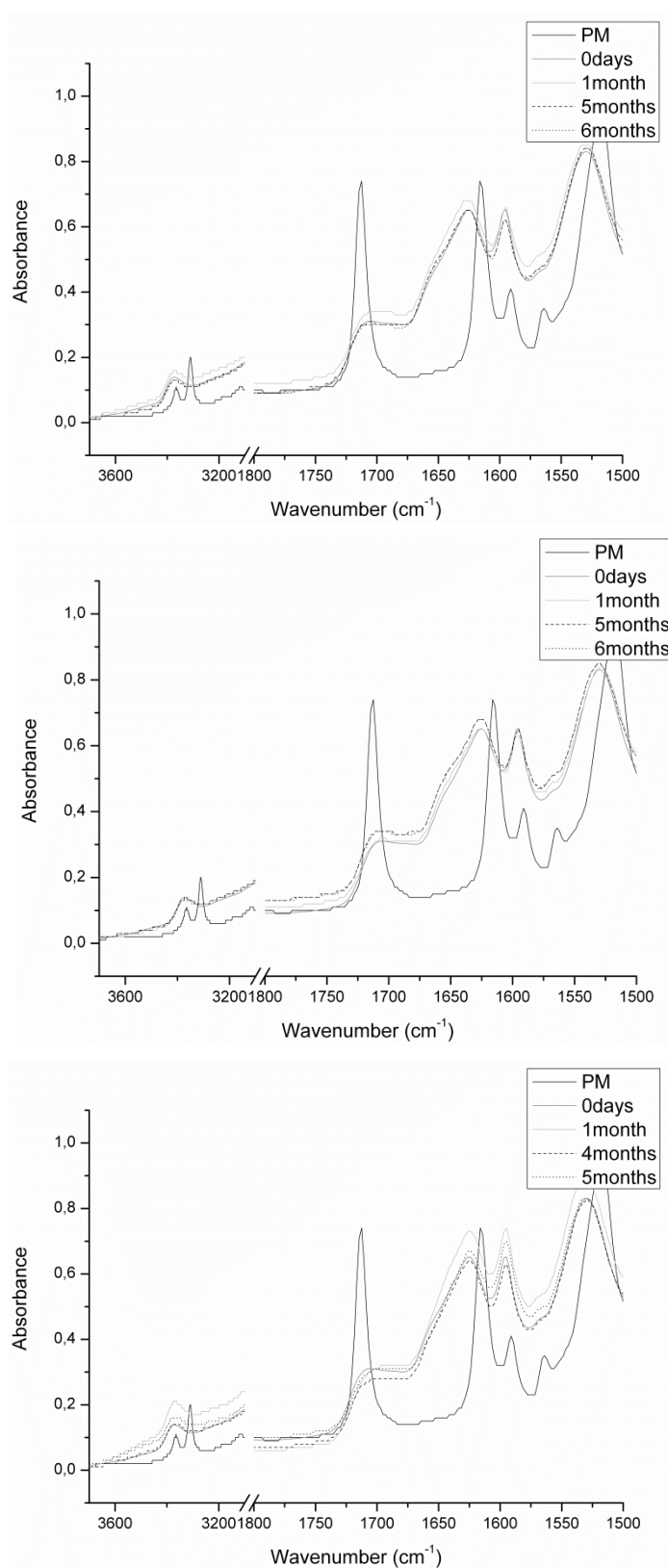


Figure 7. FTIR spectra of GBC-SER CM stored at 4°C/0% RH (upper), 40°C/0% RH (middle) and 25°C/60% RH (lower), showing the stability of the co-amorphous mixtures.



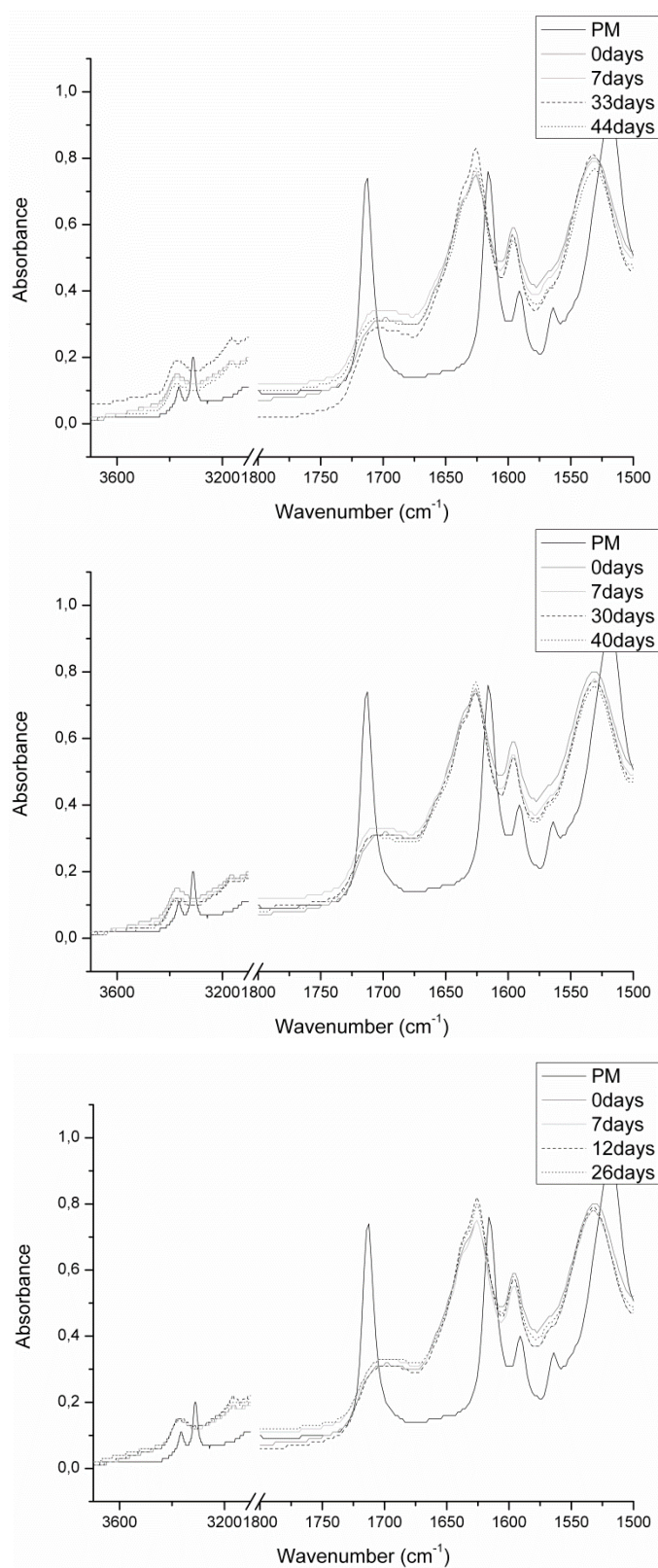


Figure 8. FTIR spectra of GBC-THR CM stored at 4°C/0% RH (upper), 40°C/0% RH (middle) and 25°C/60% RH (lower).

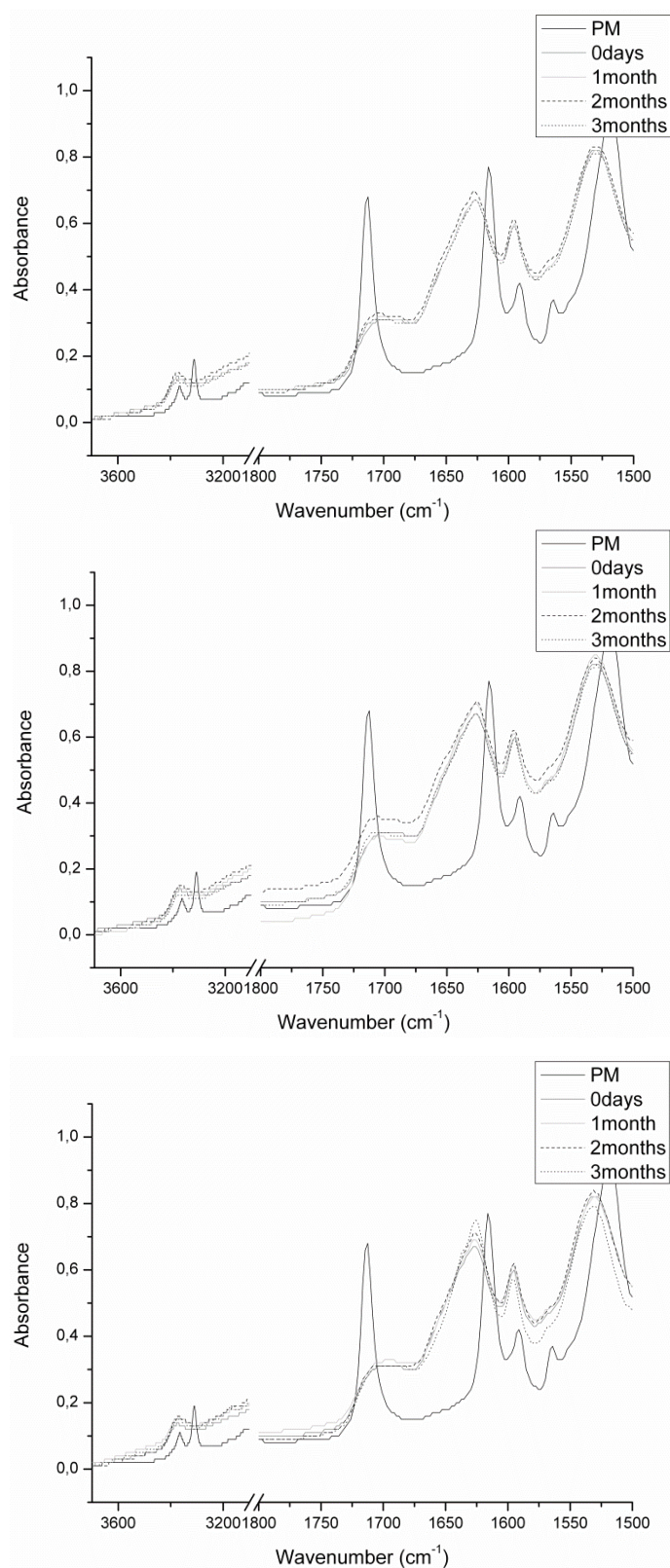


Figure 9. FTIR spectra of GBC-SER-THR CM stored at 4°C/0% RH (upper), 40°C/0% RH (middle) and 25°C/60% RH (lower).