

Update on compatibility assessment of empagliflozin with selected pharmaceutical excipients employed in solid dosage forms by thermal, spectroscopic and chromatographic techniques

Prakash Niguram^a, Surya Narayana Polaka^b, Rajeshwari Rathod^a, Kiran Kalia^a, Abhijeet S. Kate^{*a, c}

^aDepartment of Pharmaceutical Analysis, National Institute of Pharmaceutical Education and Research (NIPER) – Ahmedabad, Gandhinagar-382355, Gujarat, India

^bDepartment of Pharmaceutics, National Institute of Pharmaceutical Education and Research (NIPER) – Ahmedabad, Gandhinagar-382355, Gujarat, India

^cDepartment of Natural Products, National Institute of Pharmaceutical Education and Research (NIPER) – Ahmedabad, Gandhinagar-382355, Gujarat, India

***Corresponding author:** Dr. Abhijeet S. Kate, Department of Pharmaceutical Analysis and Department of Natural Products, National Institute of Pharmaceutical Education and Research (NIPER) – Ahmedabad, Gandhinagar, India.

Tel: +91 9960248296, Fax: +91 79 66745560.

E-mail: kate.abhi.s@gmail.com,

Figure legends

Figure S1. TGA overlay data of EGF along with its physical mixtures

Figure S2. HSM images of all physical mixtures

Figure S3a. DSC individual curves of EGF-HPMC, EGF-LM, EGF-MCC and EGF-MS

Figure S3b. DSC individual curves of EGF-PVP, EGF-SSG, EGF-HPC and EGF-CCS

Figure S3c. DSC individual curves of EGF-Talc, EGF-TiO₂, EGF-Iron Oxide Yellow and EGF-Mannitol

Figure S3d. DSC individual curves of EGF-CSD and EGF-Macrolog

Figure S4a. DSC curves of EGF-LM mixture at different heating rates (5 & 20°C/min⁻¹)

Figure S4b. DSC curves of EGF-PVP mixture at different heating rates (5 & 20°C/min⁻¹)

Figure S5. DSC and TGA overlay of EGF to represent the decomposition temperature

Figure S6. Heat-Cool-Heat DSC of EGF

Figure S7a. TGA individual curves of EGF-HPMC, EGF-LM, EGF-MCC and EGF-MS

Figure S7b. TGA individual curves of EGF-PVP, EGF-SSG, EGF-HPC and EGF-CCS

Figure S7c. TGA individual curves of EGF-Talc, EGF-TiO₂, EGF-Iron Oxide Yellow and EGF-Mannitol

Figure S7d. TGA individual curves of EGF-CSD and EGF-Macrolog

Figure S8a. FTIR individual spectra of EGF-HPMC, EGF-LM, EGF-MCC and EGF-MS

Figure S8b. FTIR individual spectra of EGF-PVP, EGF-SSG, EGF-HPC and EGF-CCS

Figure S8c. FTIR individual spectra of EGF-Talc, EGF-TiO₂, EGF-Iron Oxide Yellow and EGF-Mannitol

Figure S8d. FTIR individual spectra of EGF-CSD, and EGF-Macrolog

Figure S9. HPLC chromatograms of IST samples

Figure S10. Extracted ion chromatograms and mass spectra of EGF and 5 IPs

Figure S1. TGA overlay data of EGF along with its physical mixtures

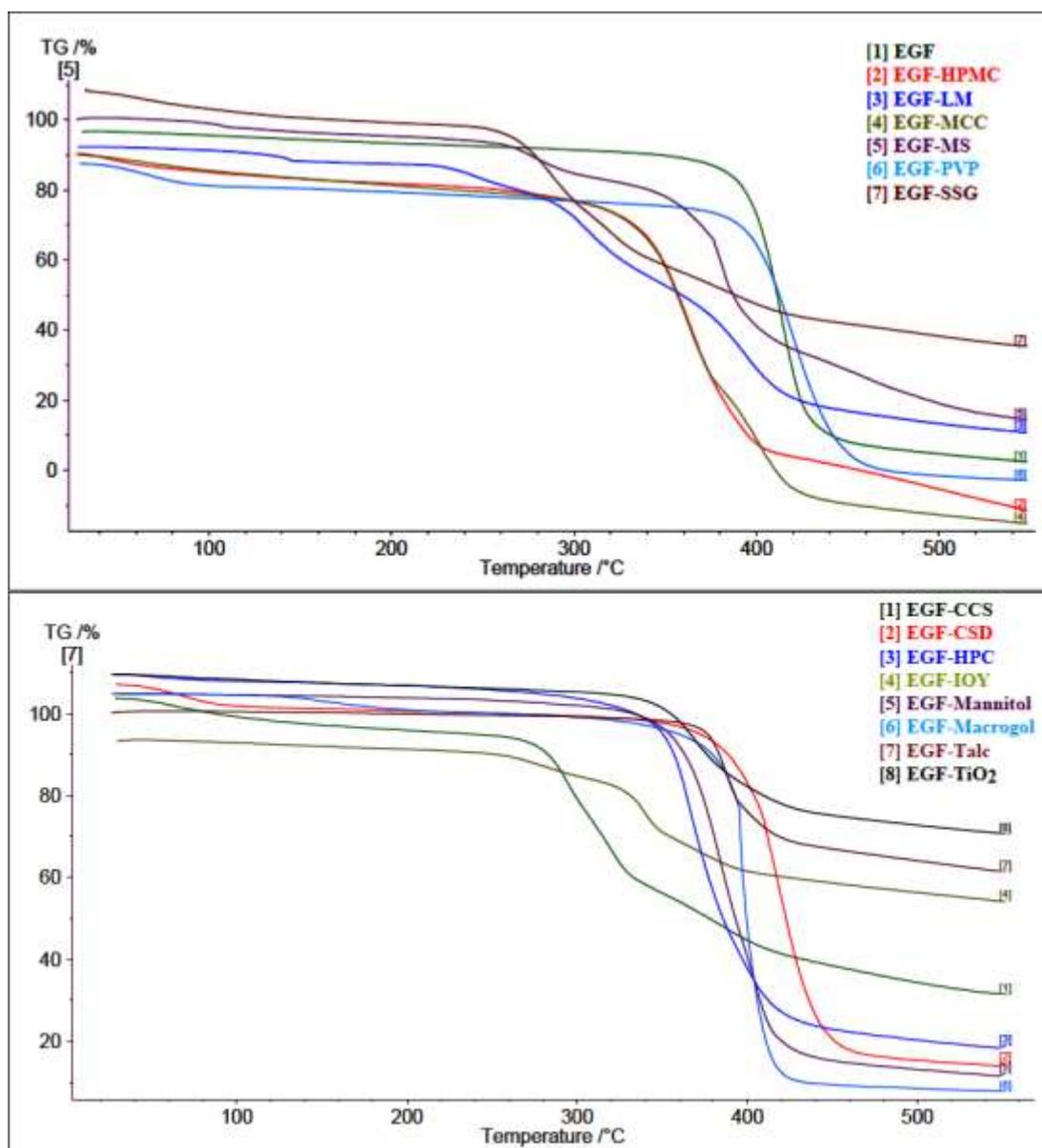


Figure S2. HSM images of all physical mixtures

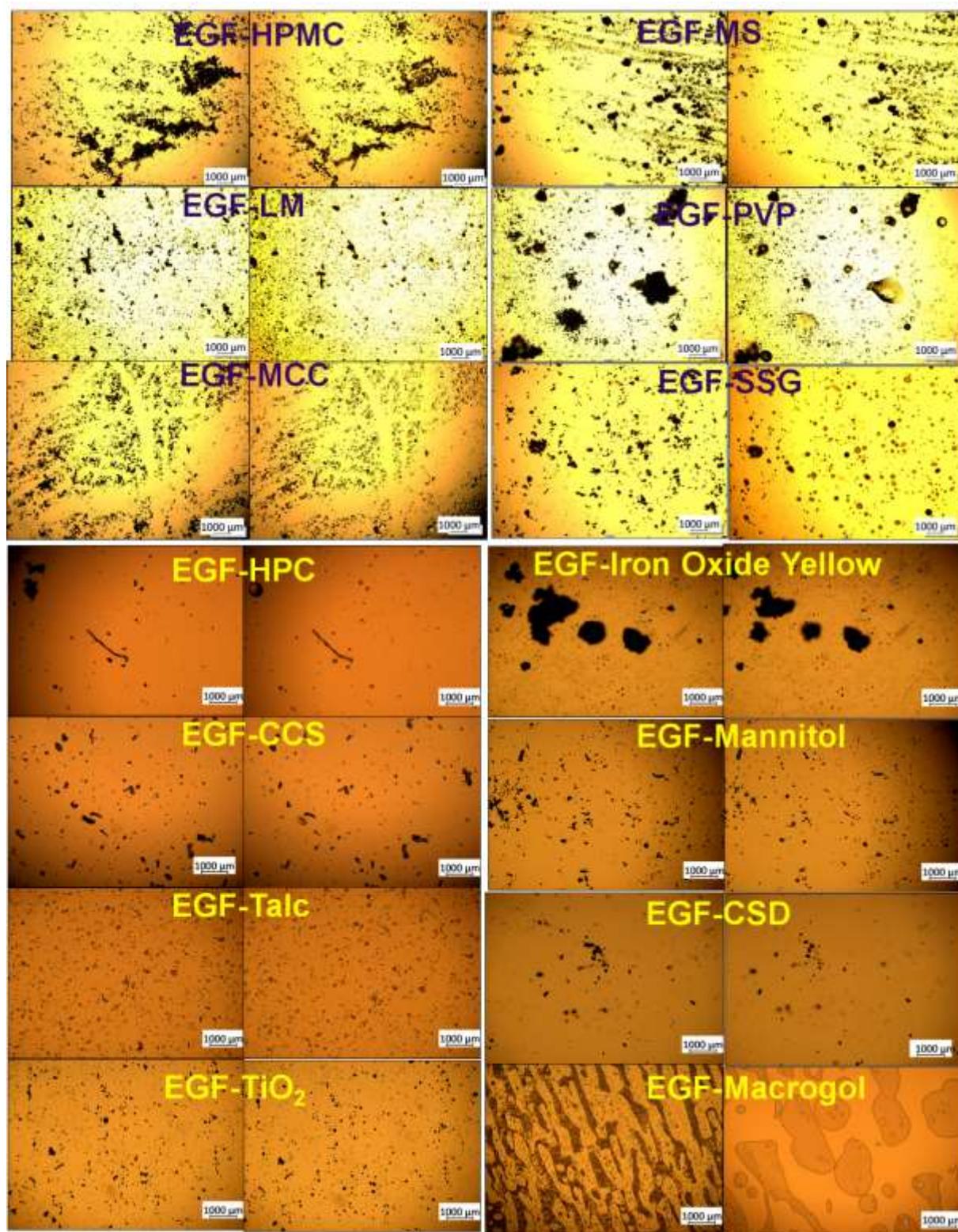


Figure S3a. DSC individual curves of EGF-HPMC, EGF-LM, EGF-MCC and EGF-MS

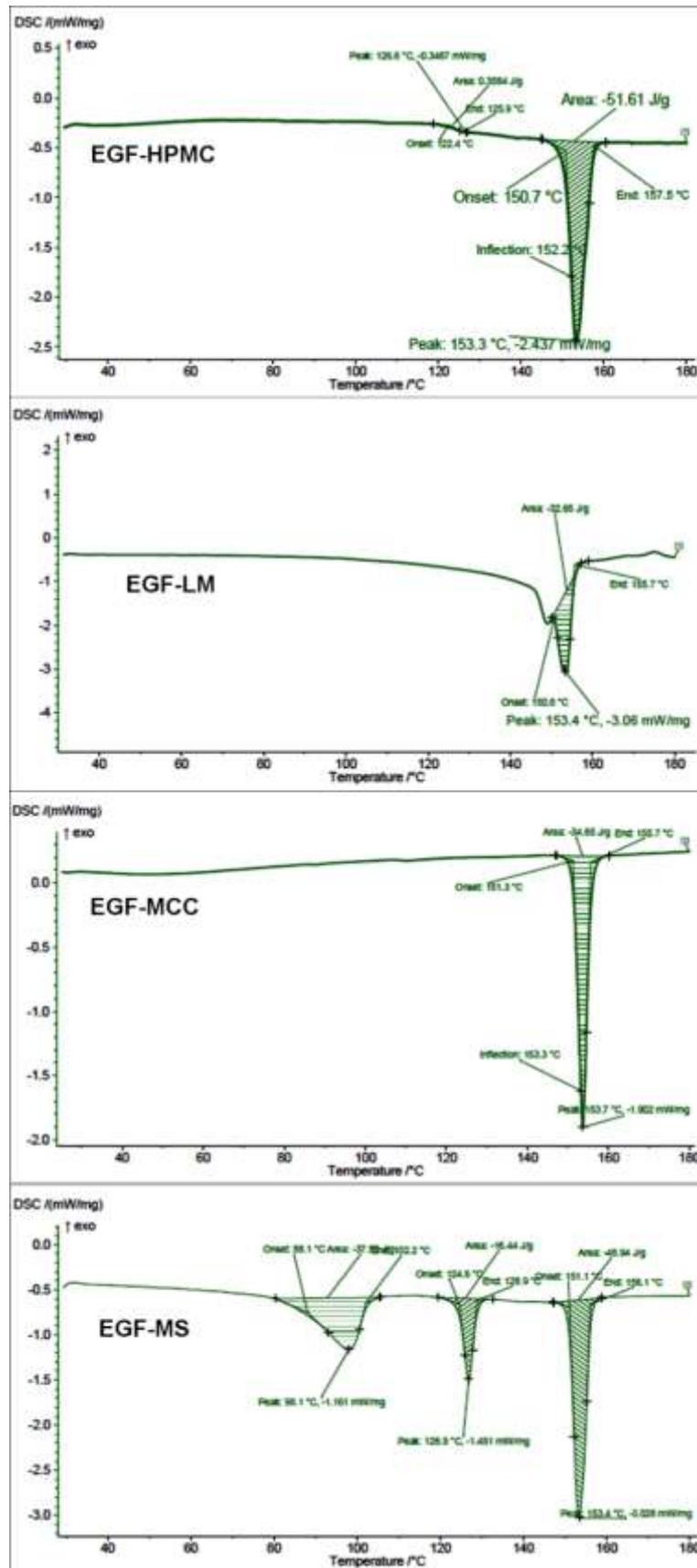


Figure S3b. DSC individual curves of EGF-PVP, EGF-SSG, EGF-HPC and EGF-CCS

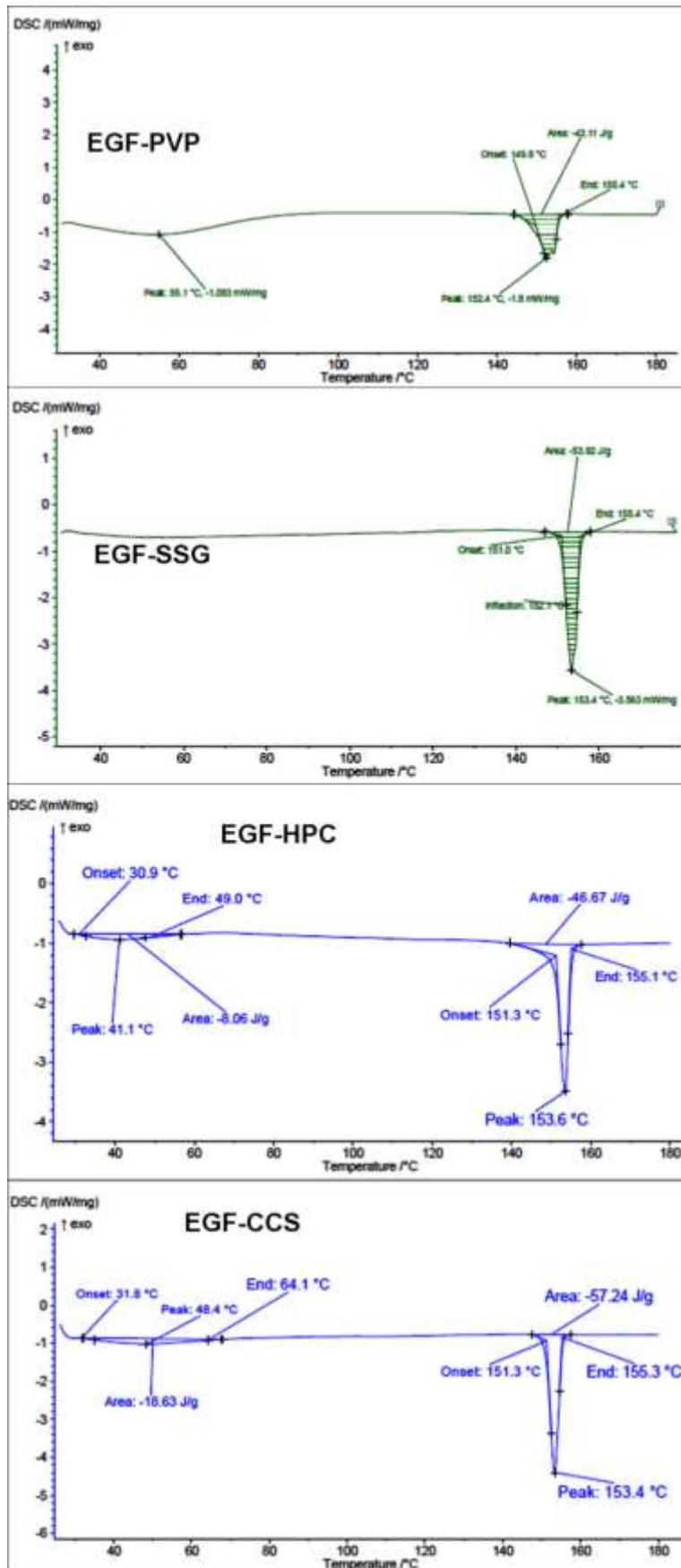


Figure S3c. DSC individual curves of EGF-Talc, EGF-TiO₂, EGF-Iron Oxide Yellow and EGF-Mannitol

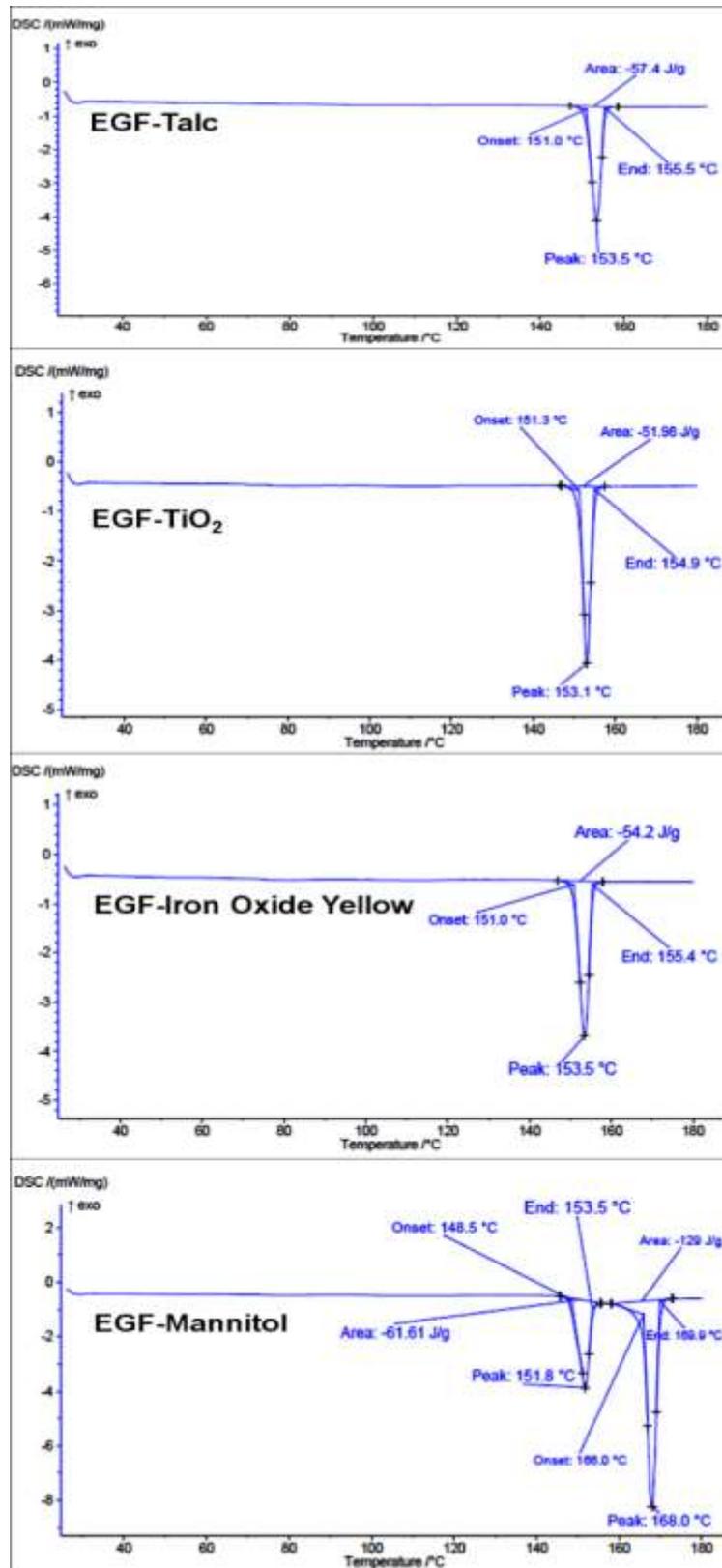


Figure S3d. DSC individual curves of EGF-CSD and EGF-Macrogol

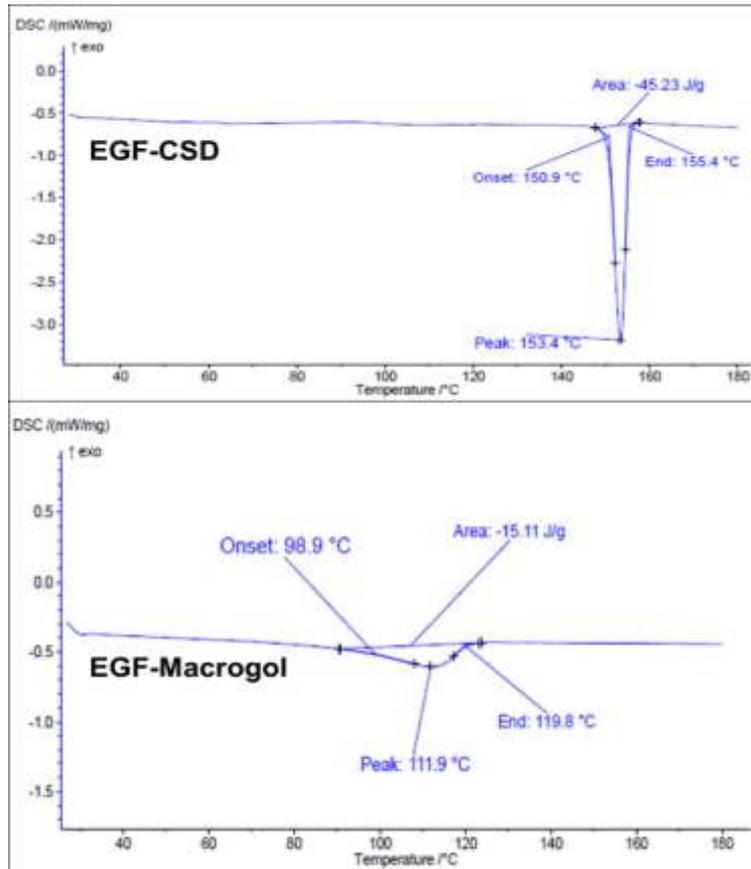


Figure S4a. DSC curves of EGF-LM mixture at different heating rates (5 & 20 °C/min⁻¹)

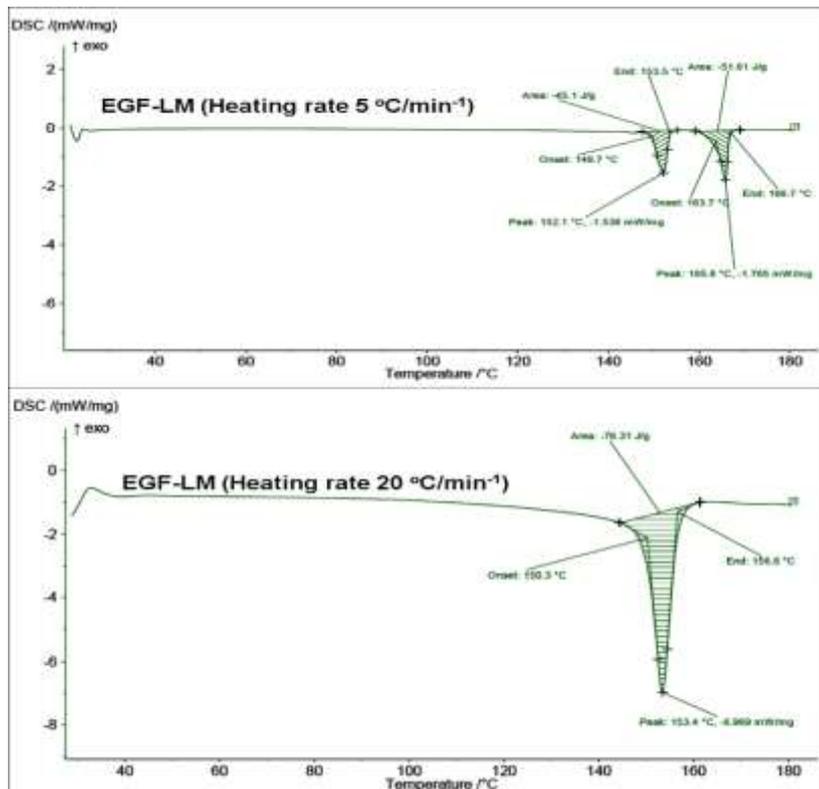


Figure S4b. DSC curves of EGF-PVP mixture at different heating rates (5 & 20°C/min⁻¹)

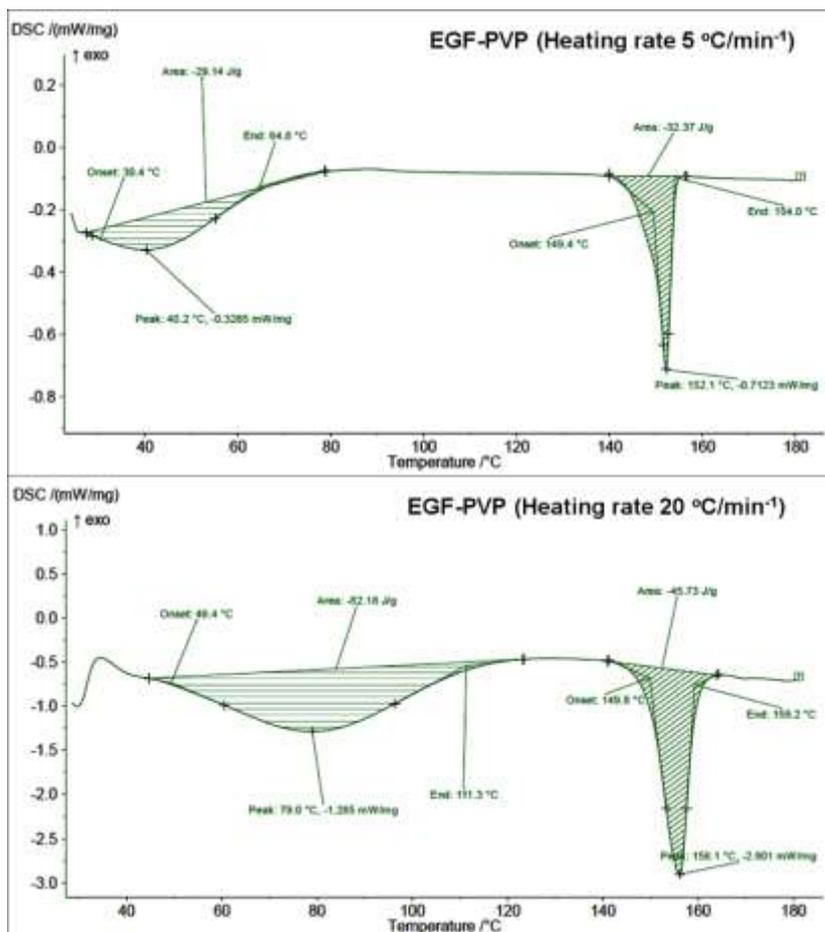


Figure S5. DSC and TGA overlay curves of EGF to represent the decomposition temperature

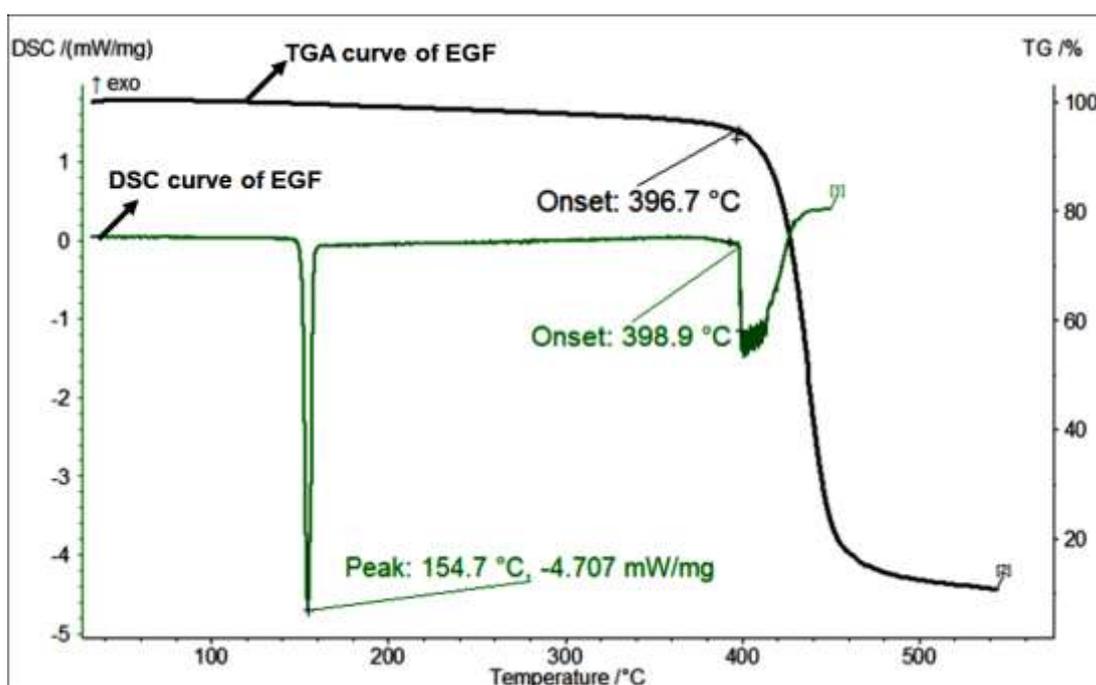


Figure S6. Heat-Cool-Heat DSC of EGF

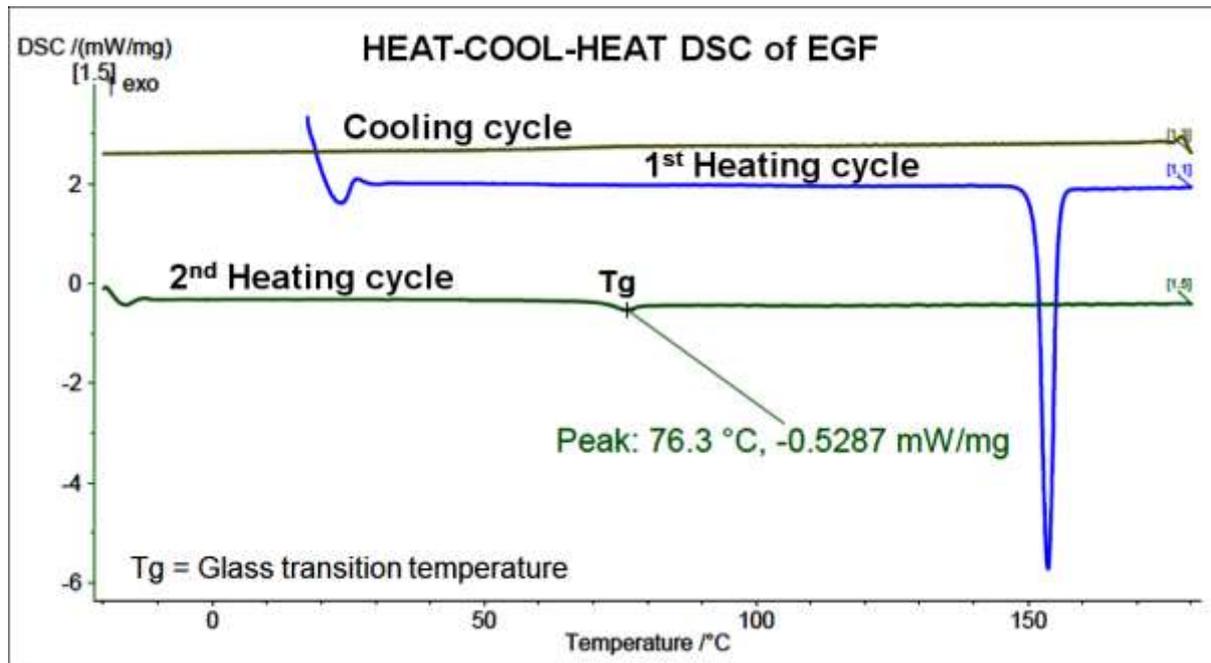


Figure S7a. TGA individual curves of EGF-HPMC, EGF-LM, EGF-MCC and EGF-MS

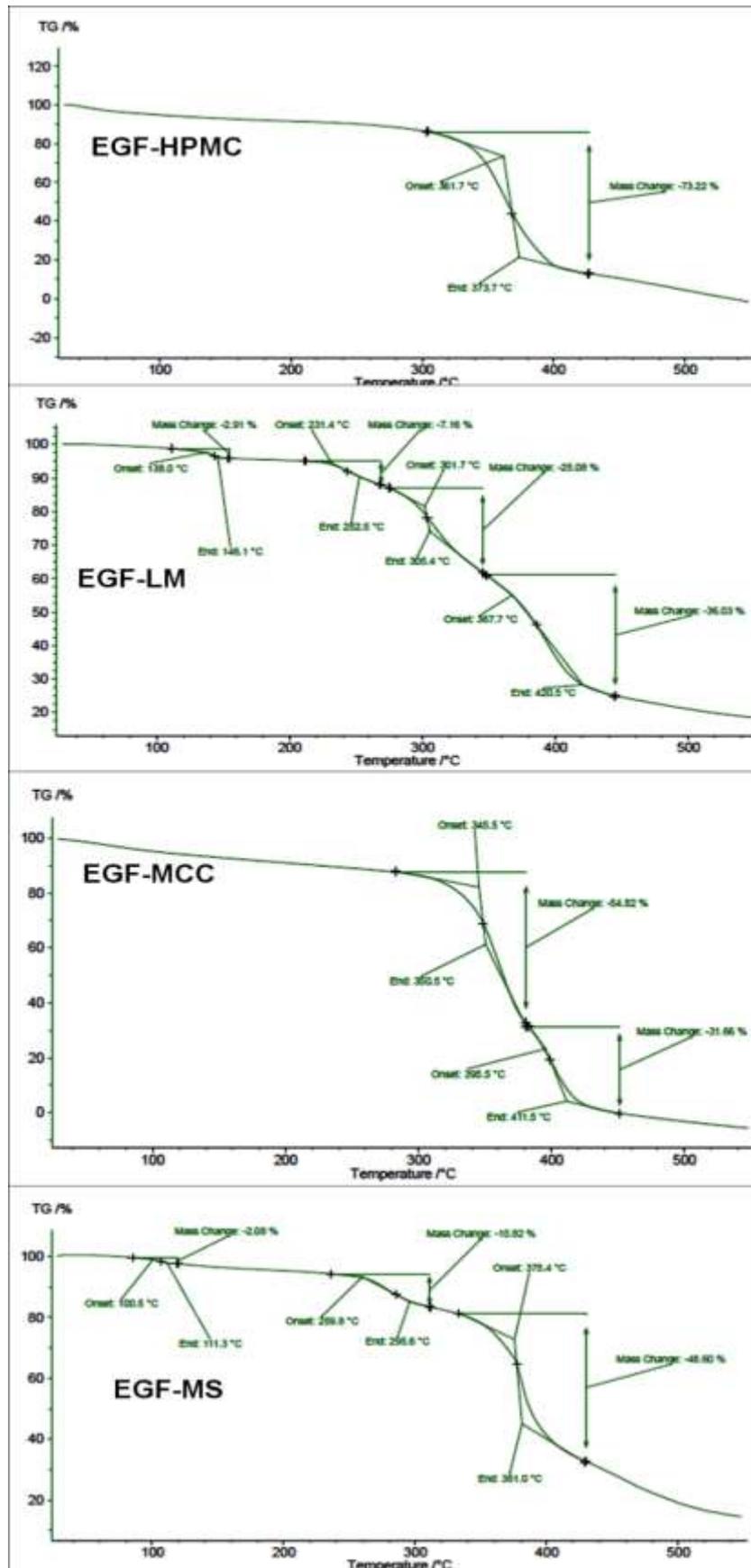


Figure S7b. TGA individual curves of EGF-PVP, EGF-SSG, EGF-HPC and EGF-CCS

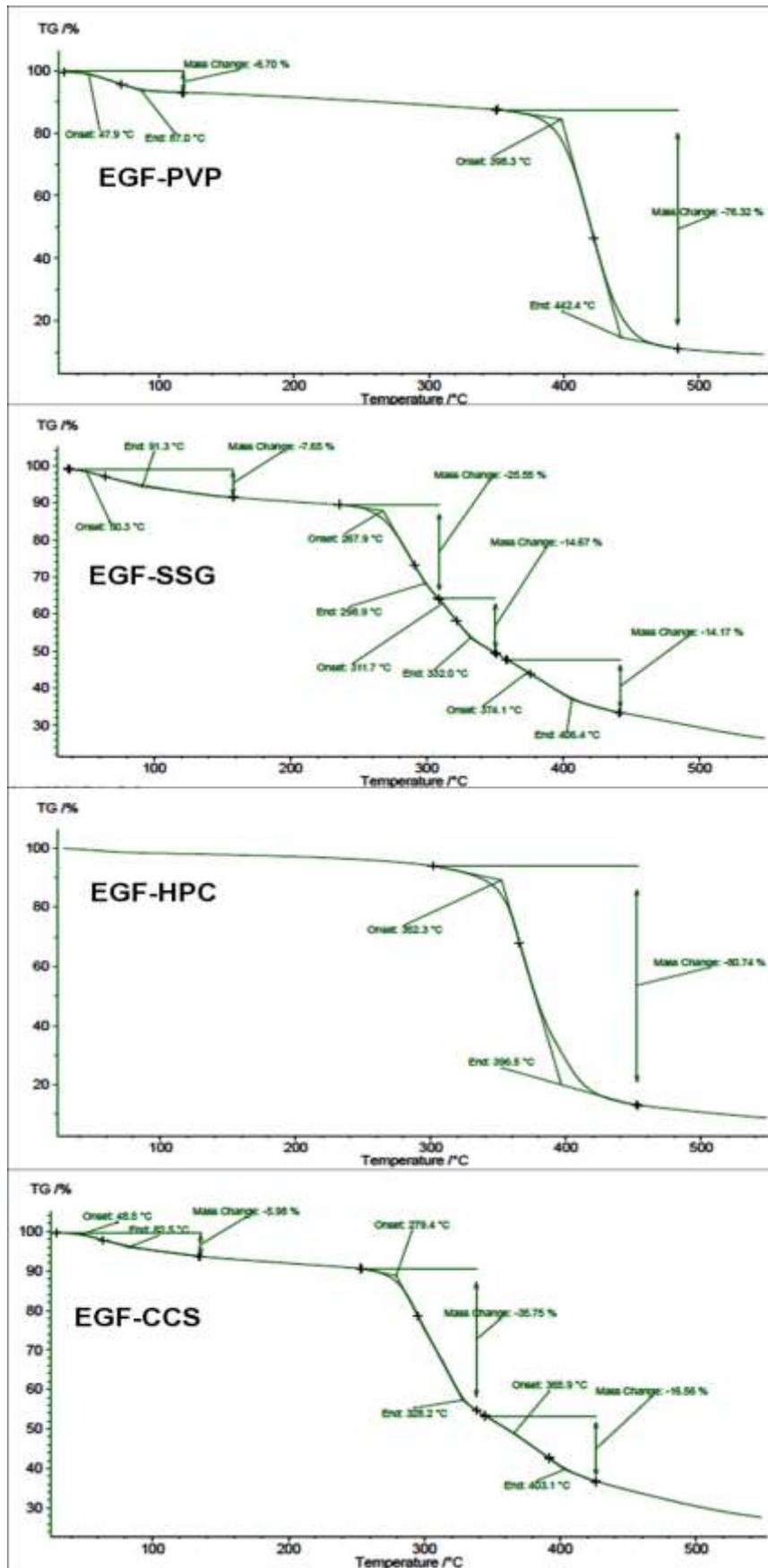


Figure S7c. TGA individual curves of EGF-Talc, EGF-TiO₂, EGF-Iron Oxide Yellow and EGF-Mannitol

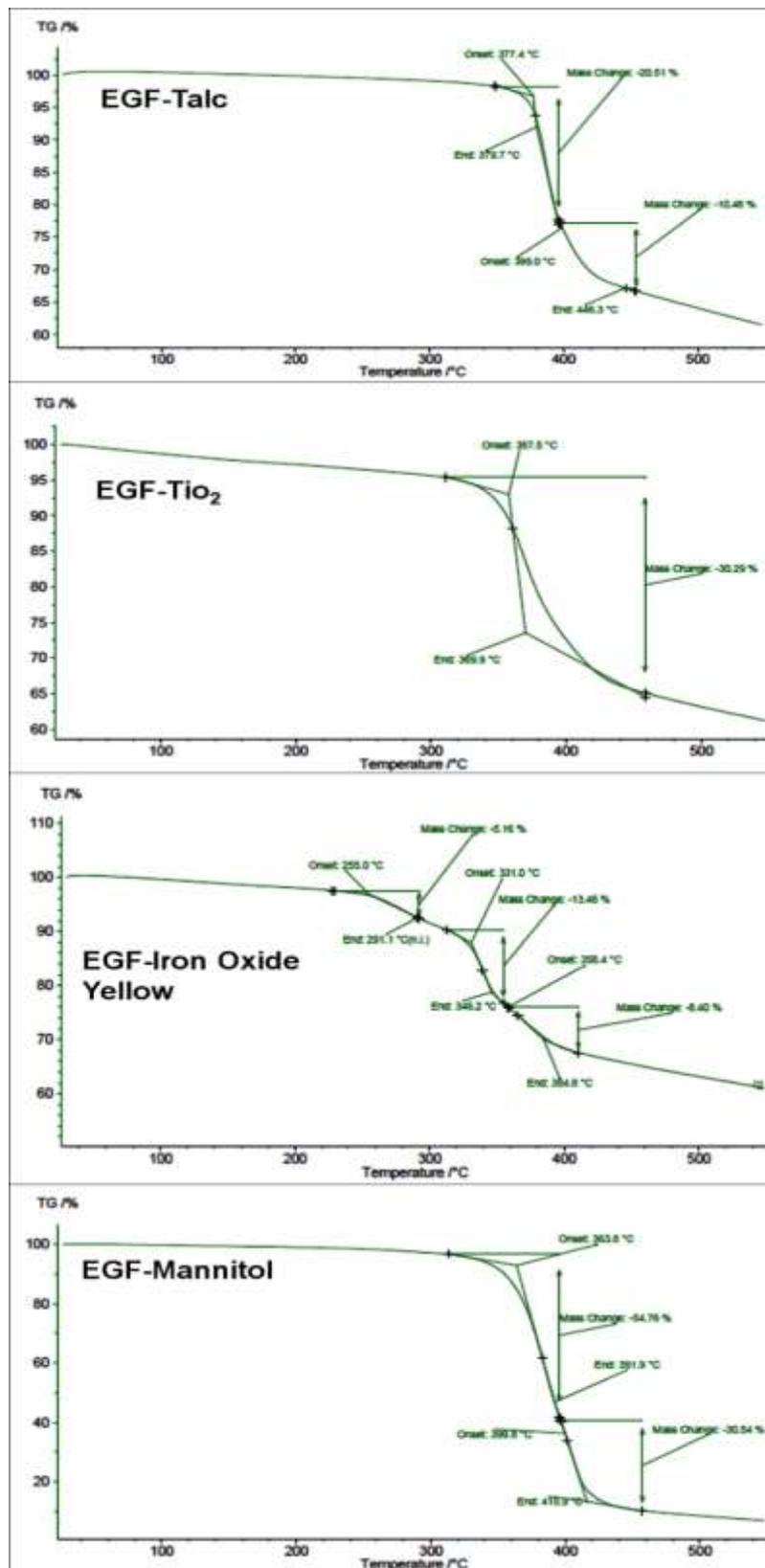


Figure S7d. TGA individual curves of EGF-CSD and EGF-Macrogol

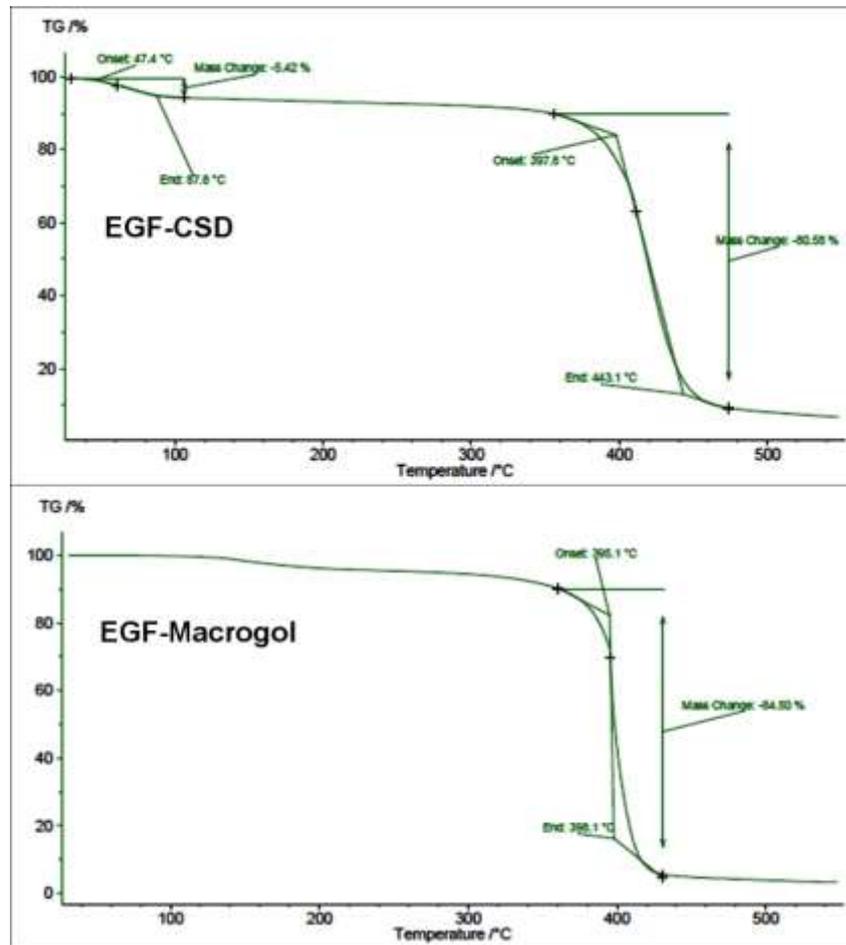


Figure S8a. FTIR individual spectra of EGF-HPMC, EGF-LM, EGF-MCC and EGF-MS

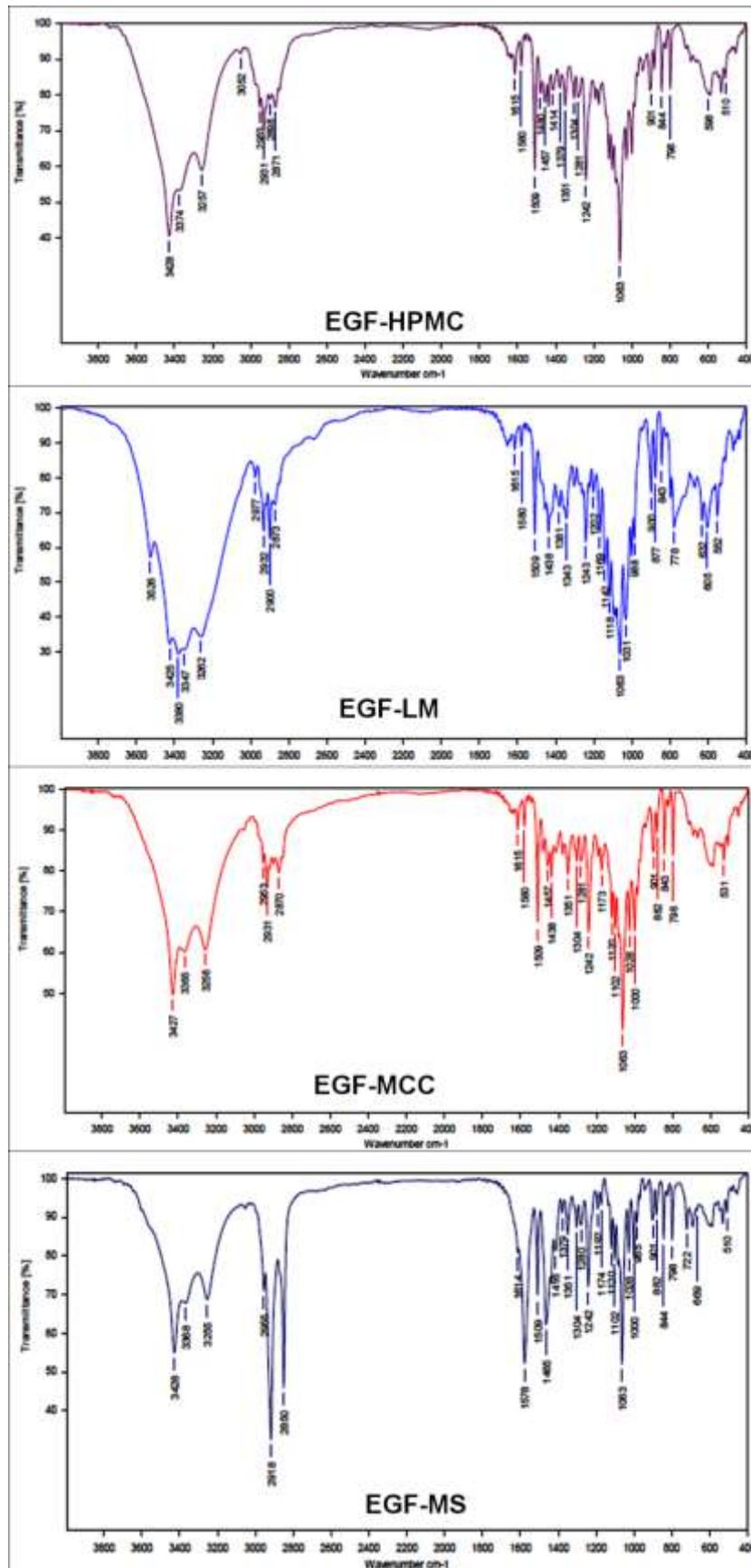


Figure S8b. FTIR individual spectra of EGF-PVP, EGF-SSG, EGF-HPC and EGF-CCS

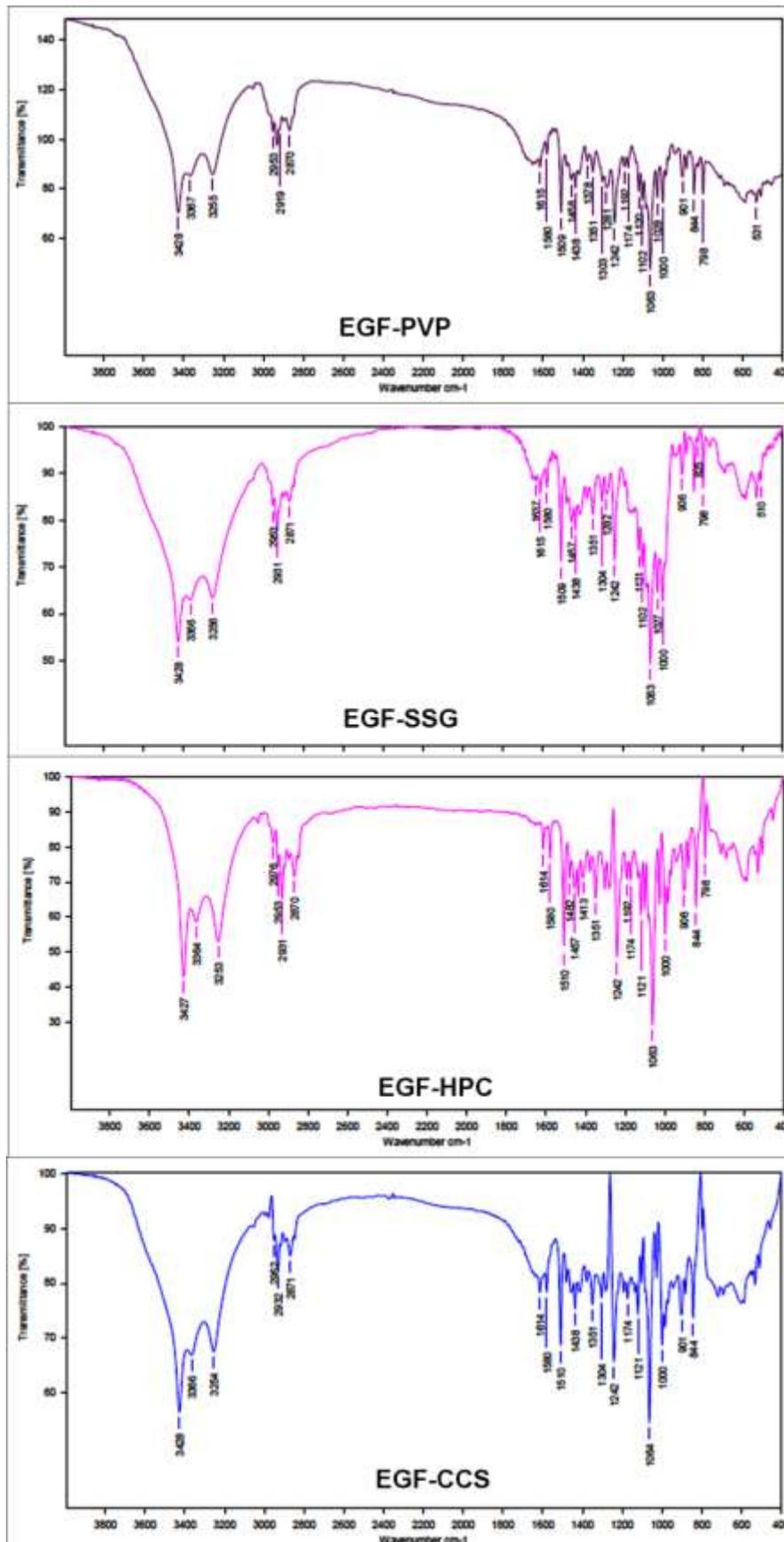


Figure S8c. FTIR individual spectra of EGF-Talc, EGF-TiO₂, EGF-Iron Oxide Yellow and EGF-Mannitol

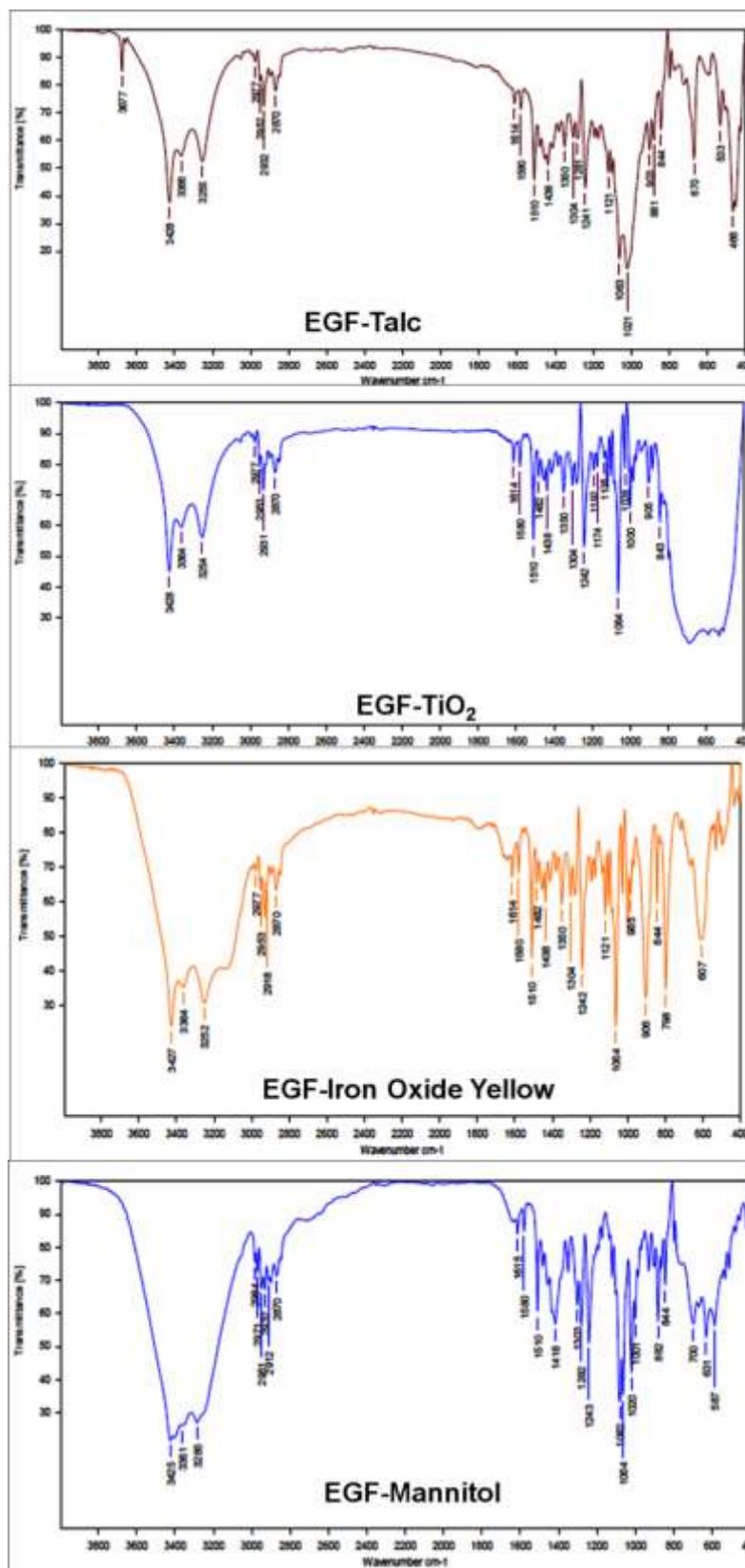


Figure S8d. FTIR individual spectra of EGF-CSD, and EGF-Macrogol

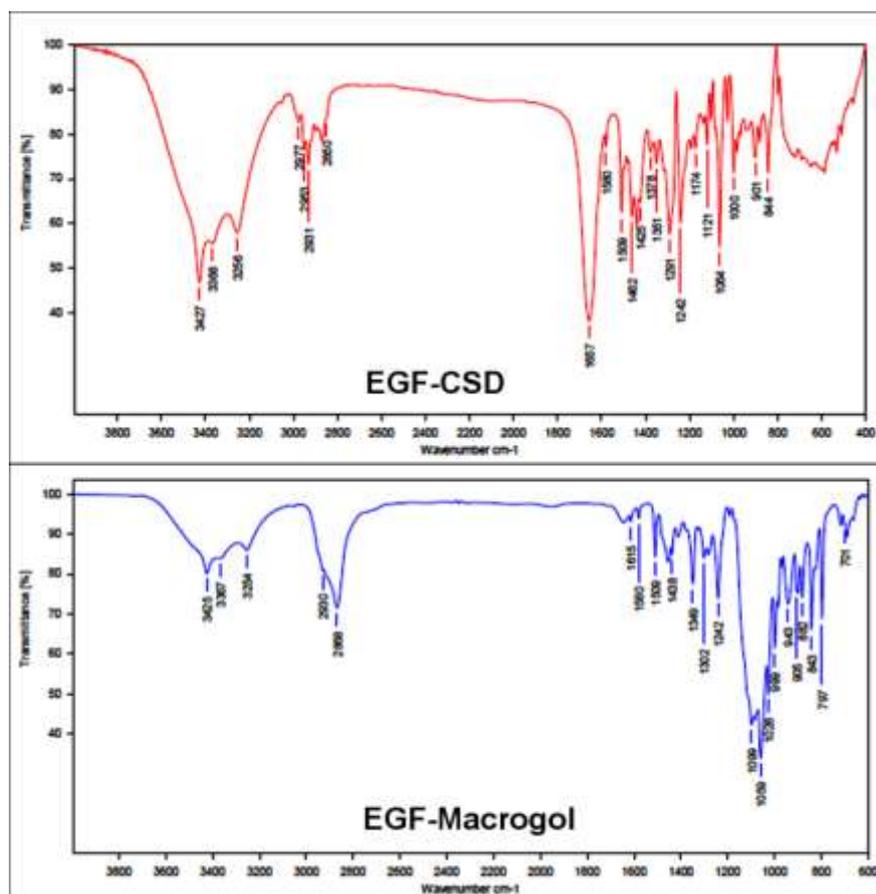


Figure S9. HPLC chromatograms of IST samples

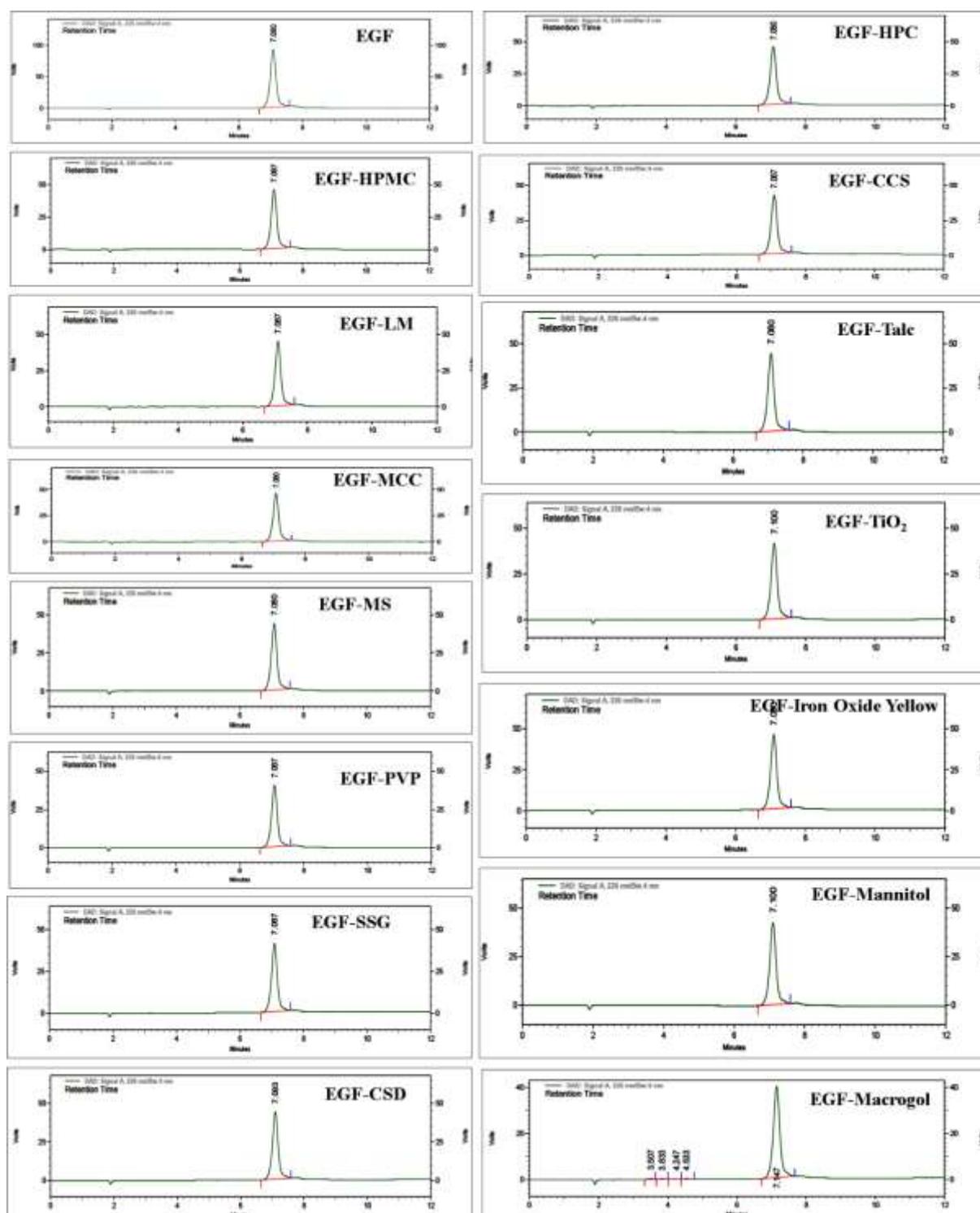


Figure S10. Extracted ion chromatograms and mass spectra of EGF and 5 IPs

