

Supplementary data

| Table S1 Histological scoring on colon tissue |                                              |       |
|-----------------------------------------------|----------------------------------------------|-------|
| Parameters                                    | Descriptions                                 | Score |
| Epithelium                                    | Normal                                       | 0     |
|                                               | Disappearance of goblet cells                | 1     |
|                                               | Disappearance of goblet cells in large areas | 2     |
|                                               | Loss of crypts                               | 3     |
|                                               | Loss of crypts in large areas                | 4     |
| Infiltration                                  | None                                         | 0     |
|                                               | Infiltration around crypt basis              | 1     |
|                                               | Infiltration reaching to mucosae             | 2     |
|                                               | Extensive infiltration to mucosae            | 3     |
|                                               | Infiltration to submucosa                    | 4     |

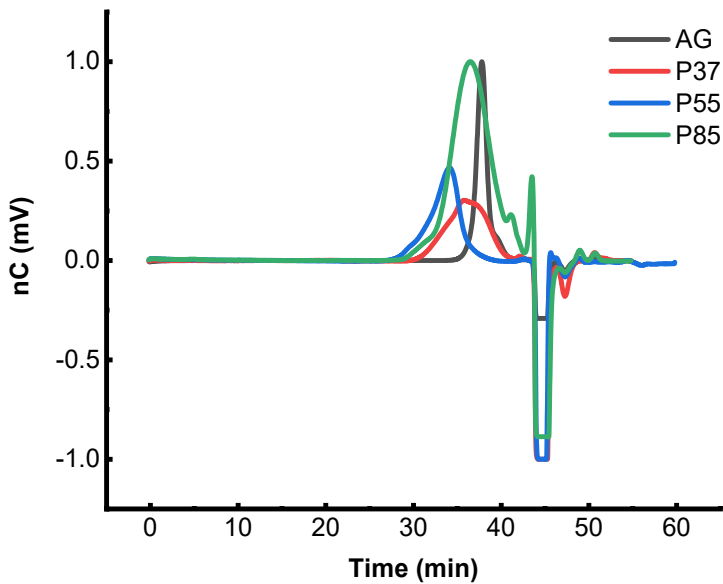


Figure S1 HPSEC profiles of different pectic samples

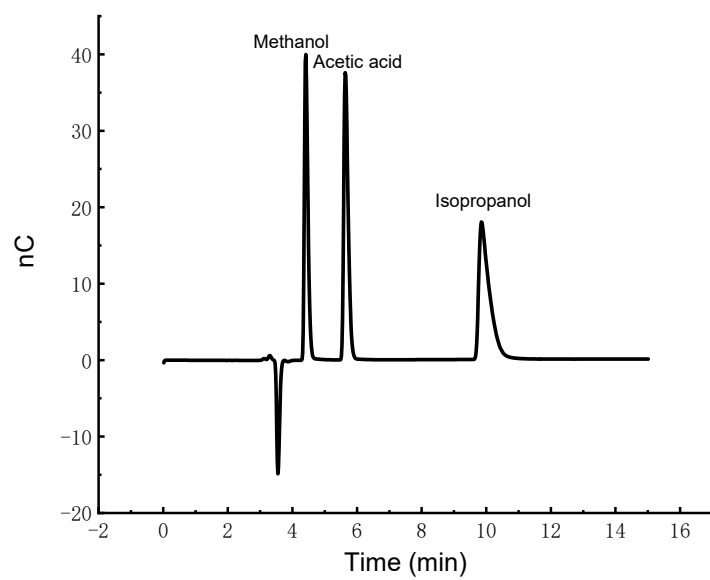


Figure S2 Chromatograms of standards (methanol, acetic acid, and isopropanol)

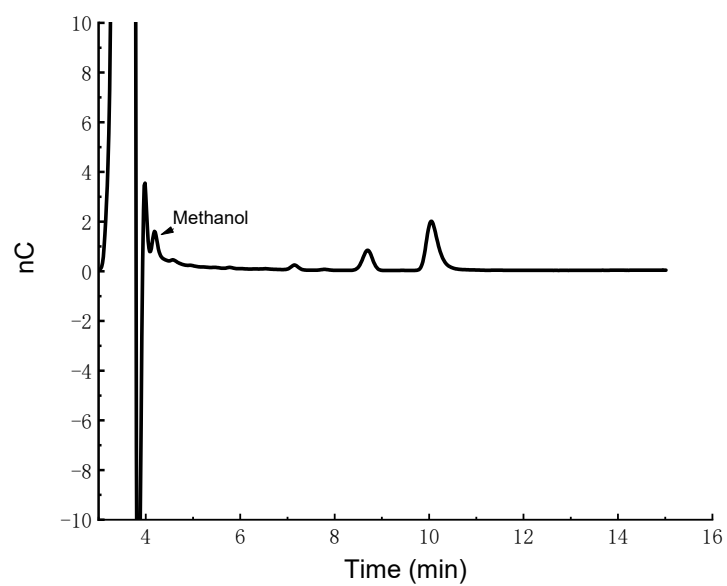


Figure S3 Chromatograms of saponification product of P37

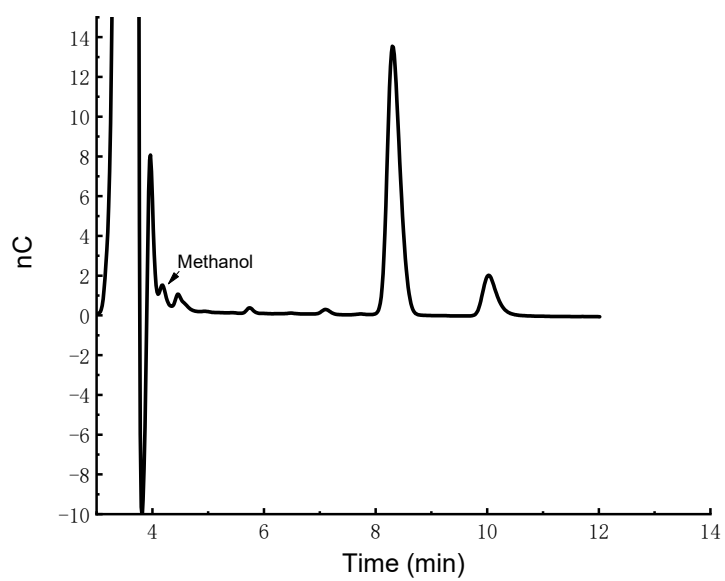


Figure S4 Chromatograms of saponification product of P55

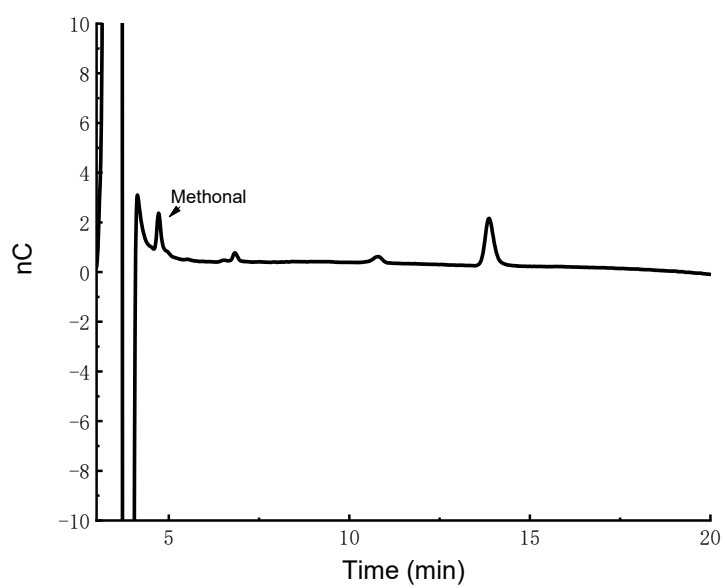


Figure S5 Chromatograms of saponification product of P85

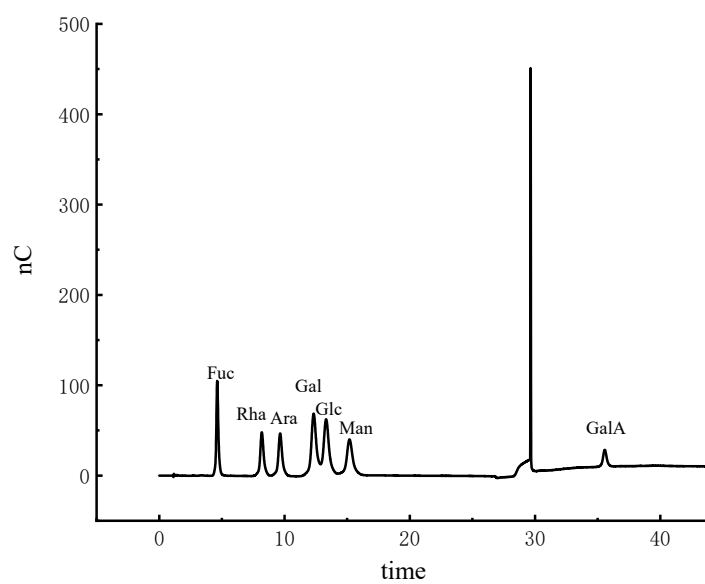


Figure S6 HPAEC chromatogram of monosaccharides standards

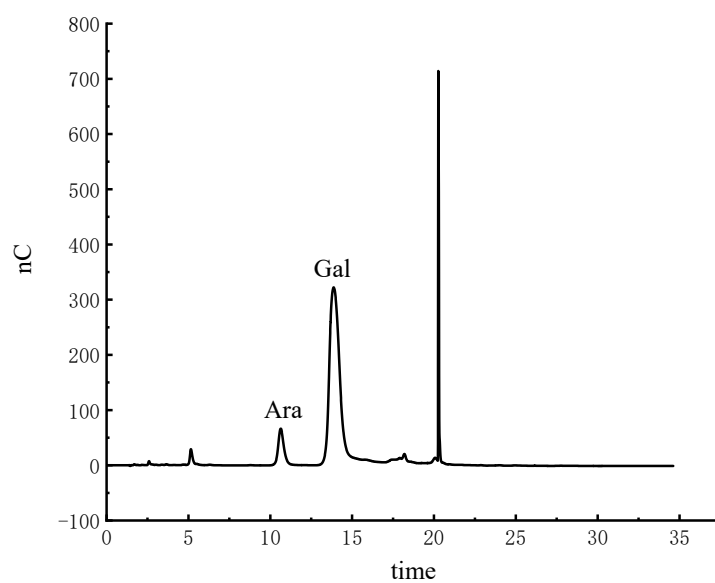


Figure S7 HPAEC chromatogram of monosaccharides composition of AG

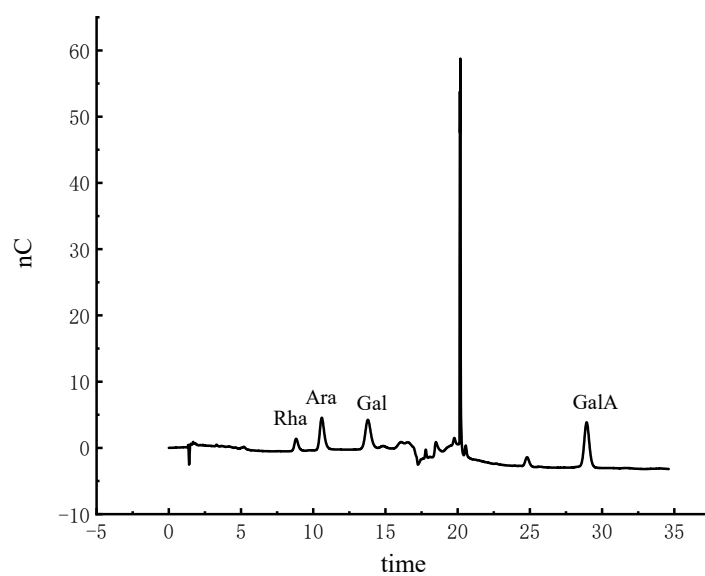


Figure S8 HPAEC chromatogram of monosaccharides composition of P37

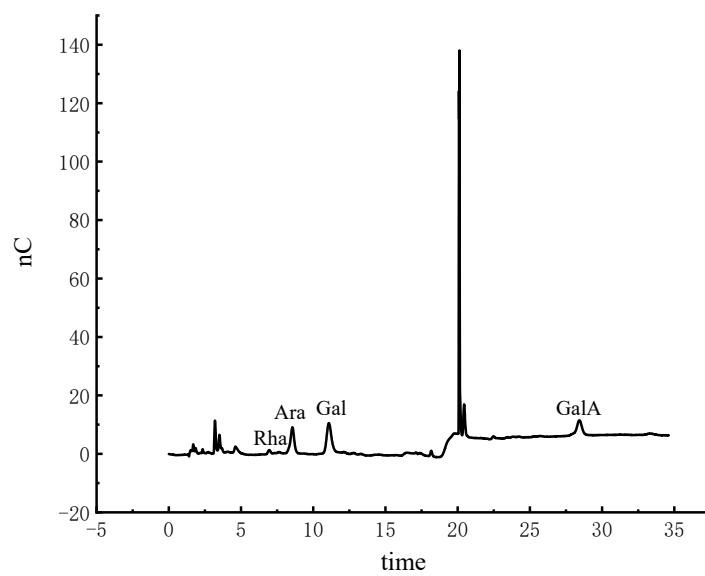


Figure S9 HPAEC chromatogram of monosaccharides composition of P55

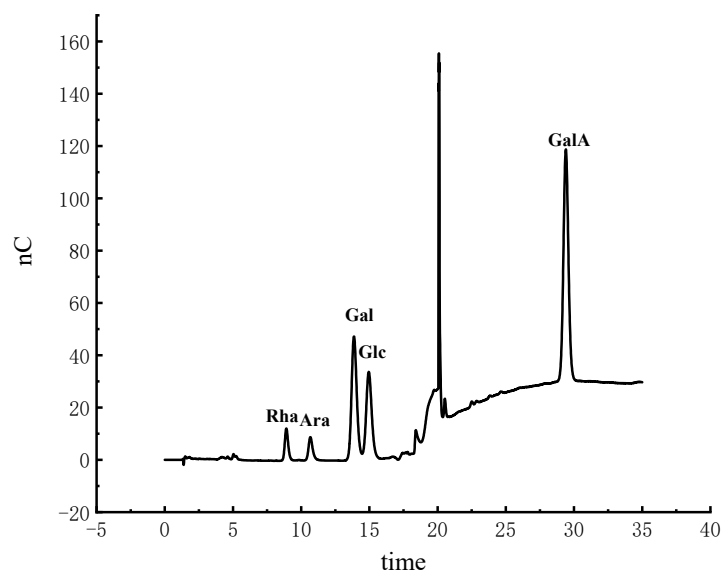


Figure S10 HPAEC chromatogram of monosaccharides composition of P85

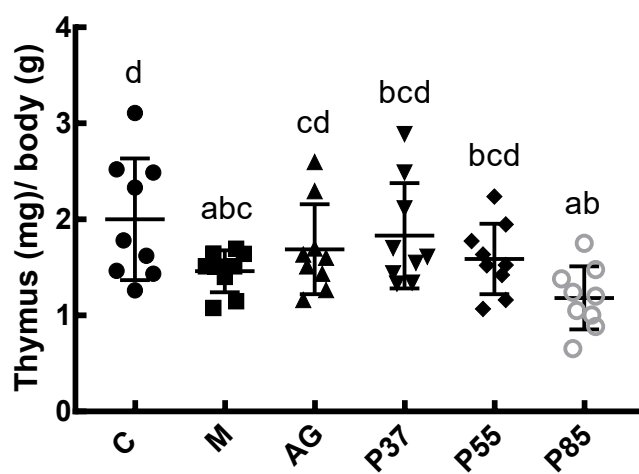


Fig. S11 Thymus indexes in different groups (Groups with different letters are significantly different,  $n=9$  per group,  $p < 0.05$ )

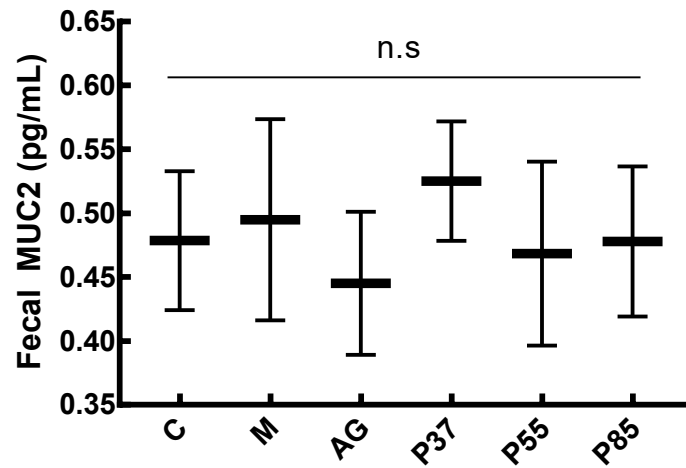


Fig. S12 The MUC2 content in feces sample (Groups with different letters are significantly different,  $n=9$  per group,  $p < 0.05$ )

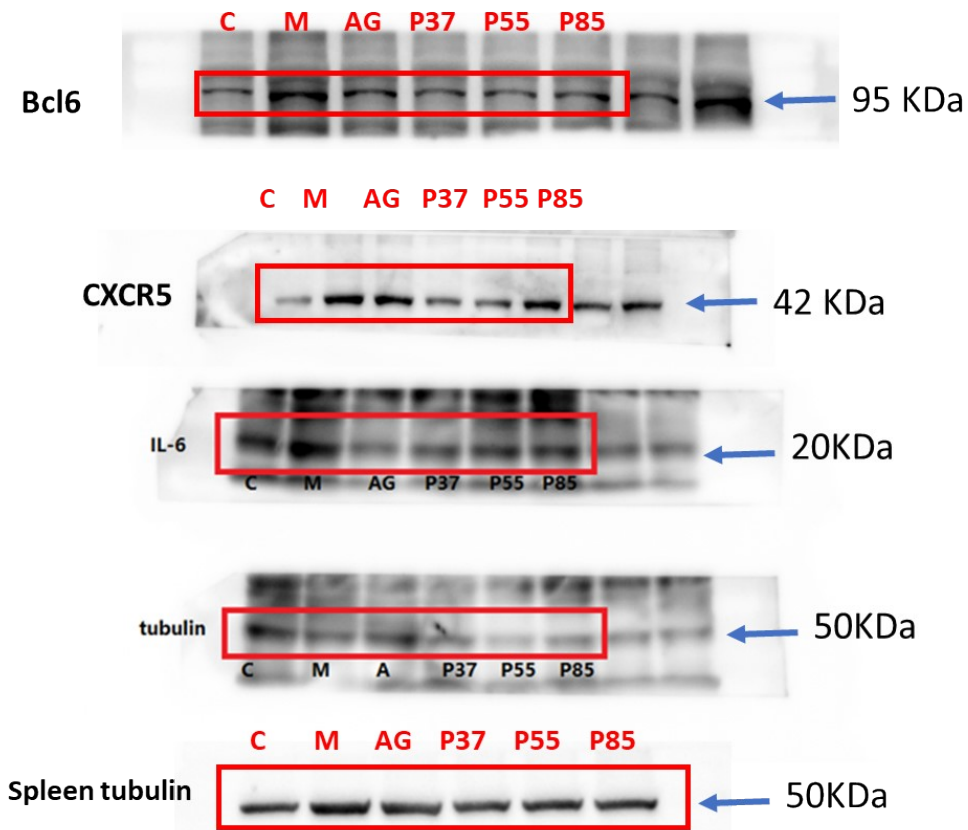


Fig. S13 Uncropped pictures of western blotting