

Supplementary Materials

Supplementary Table S1 Differentially expressed genes (DEGs) in 31 cell clusters of the rumen.

Supplementary Table S2 DEGs among three types of basal cells.

Supplementary Table S3 GO and KEGG enrichment results of DEGs in keratinocytes.

Supplementary Table S4 DEGs among seven subpopulations of differentiating keratinocytes.

Supplementary Table S5 DEGs among three subpopulations of terminally differentiated keratinocytes.

Supplementary Table S6 DEGs among diverse subpopulations of special spinous cells.

Supplementary Table S7 DEGs in rumen samples at different developmental stages.

Supplementary Table S8 Cell numbers in various clusters of rumen samples at different developmental stages.

Supplementary Table S9 Dynamic gene list of four clusters along keratinized pseudo-time trajectory.

Supplementary Table S10 GO and KEGG enrichment results of four gene clusters along keratinized pseudo-time trajectory.

Supplementary Table S11 DEGs of special spinous cells.

Supplementary Table S12 GO and KEGG enrichment results of DEGs in special spinous cells.

Supplementary Tables S1–S12 are listed as separate excel files due to their large size.