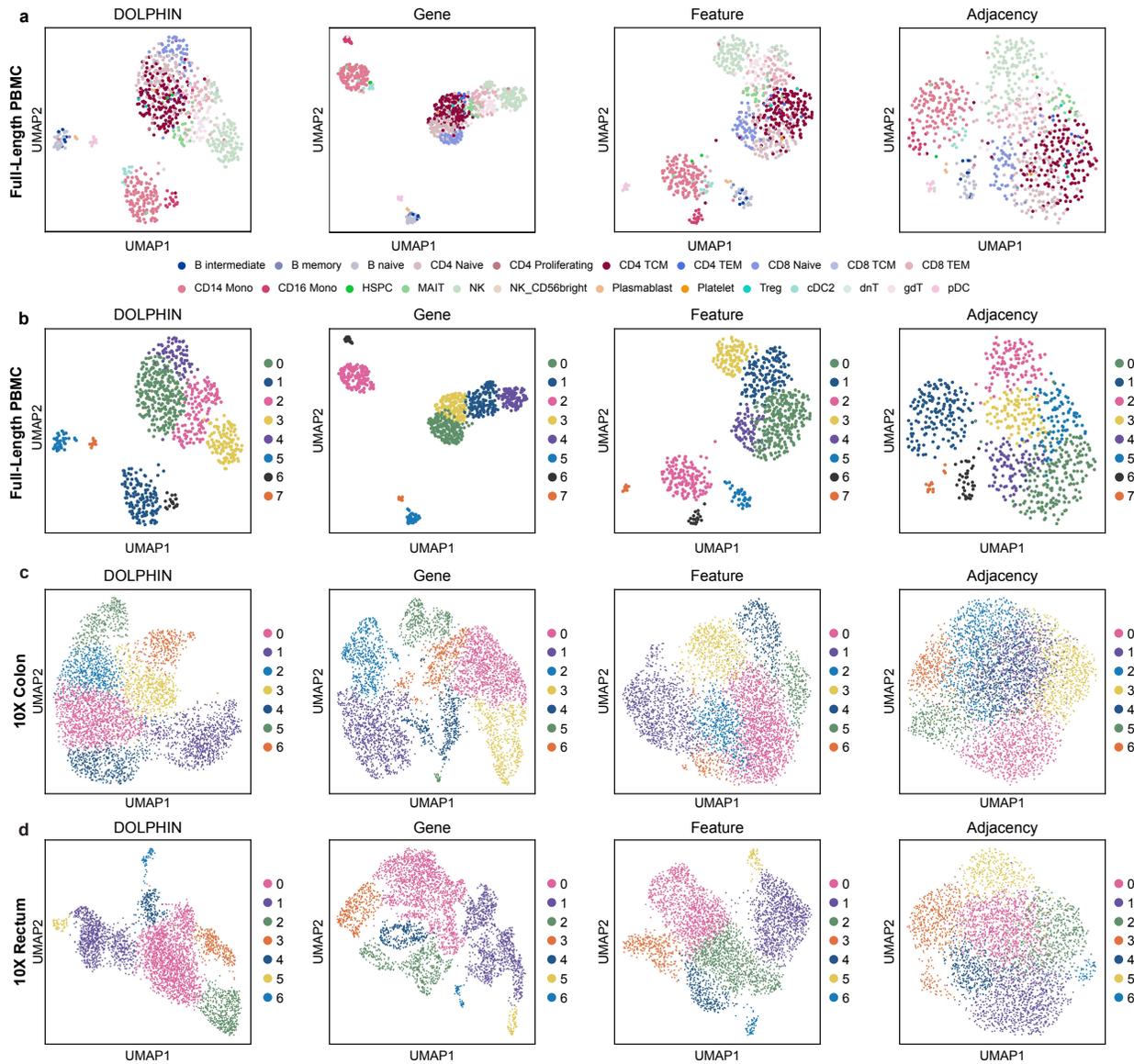
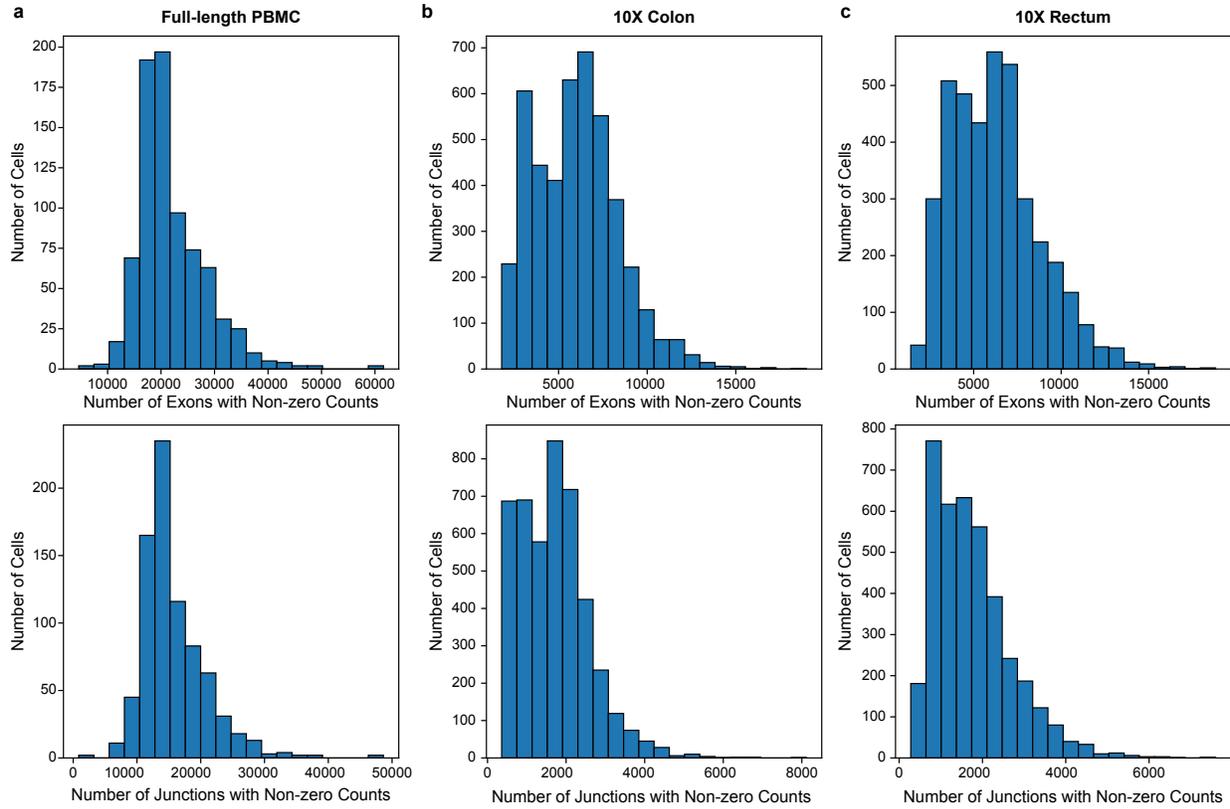


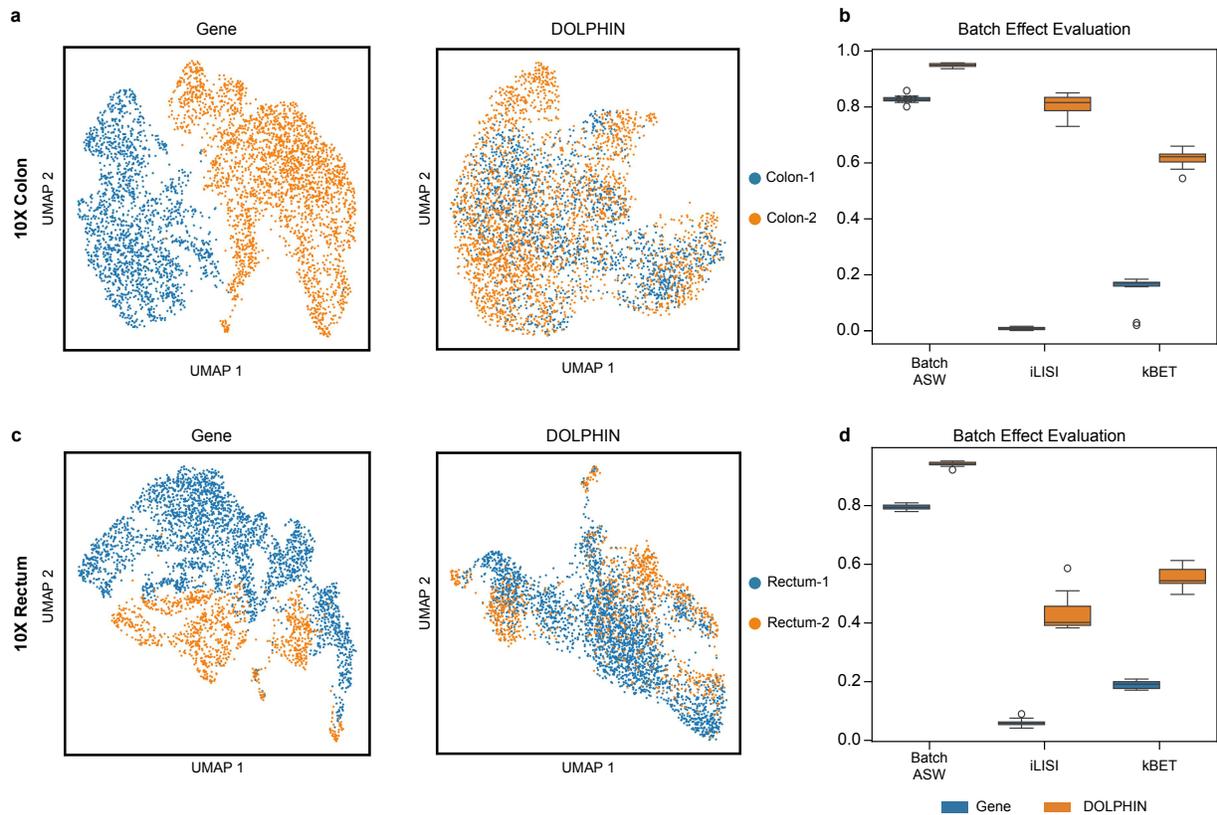
# Supplementary Figures



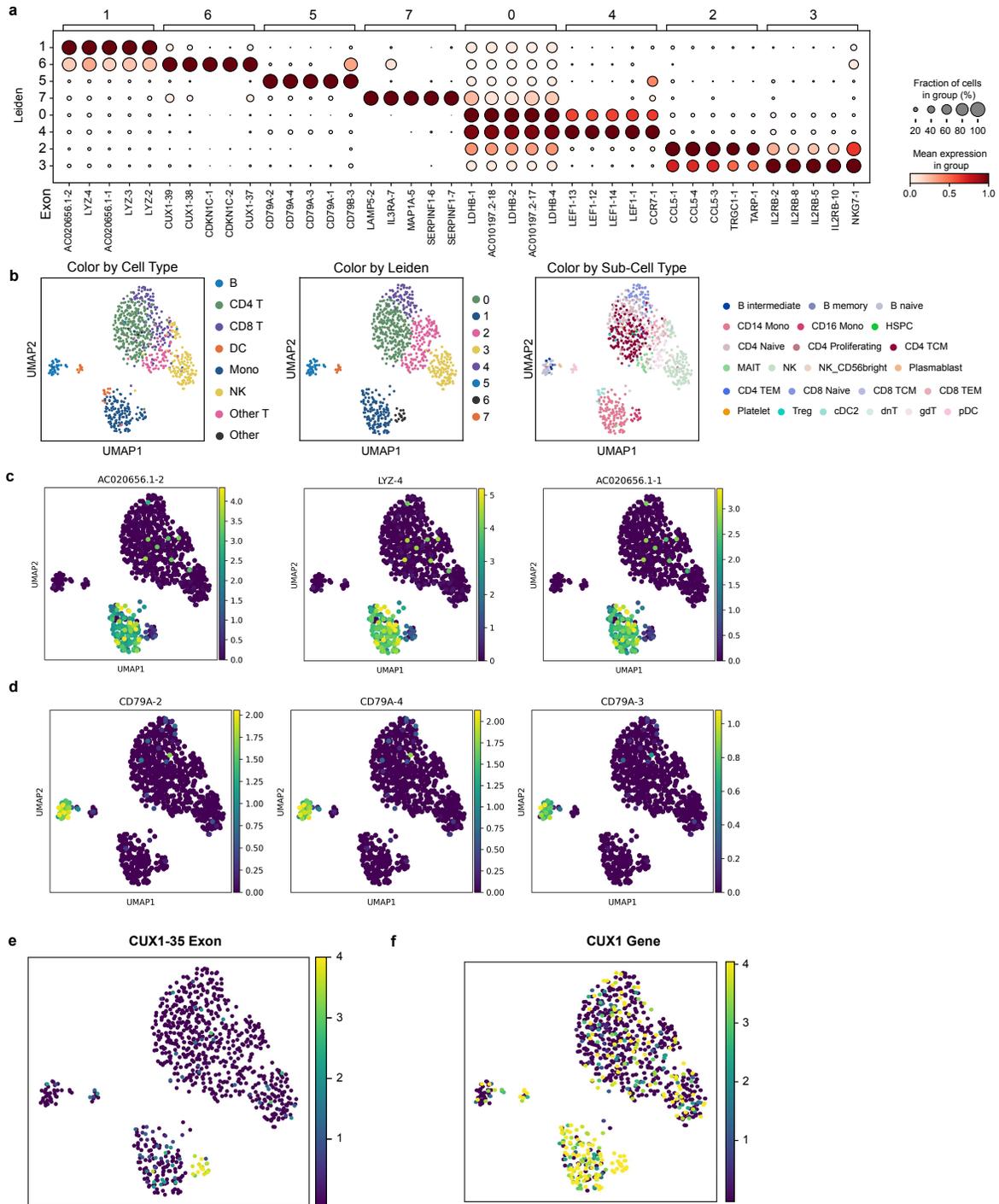
**Fig. S1 UMAP visualizations of cell embeddings generated using different methods.** UMAP plots compare cell embeddings from DOLPHIN, conventional gene count table, feature matrix only and adjacency matrix only. Panels show embeddings for **a**, Full-length PBMC labeled by sub-cell type, **b**, Full-length PBMC labeled by Leiden clusters, **c**, 10X Colon labeled by Leiden clusters, and **d**, 10X Rectum labeled by Leiden clusters.



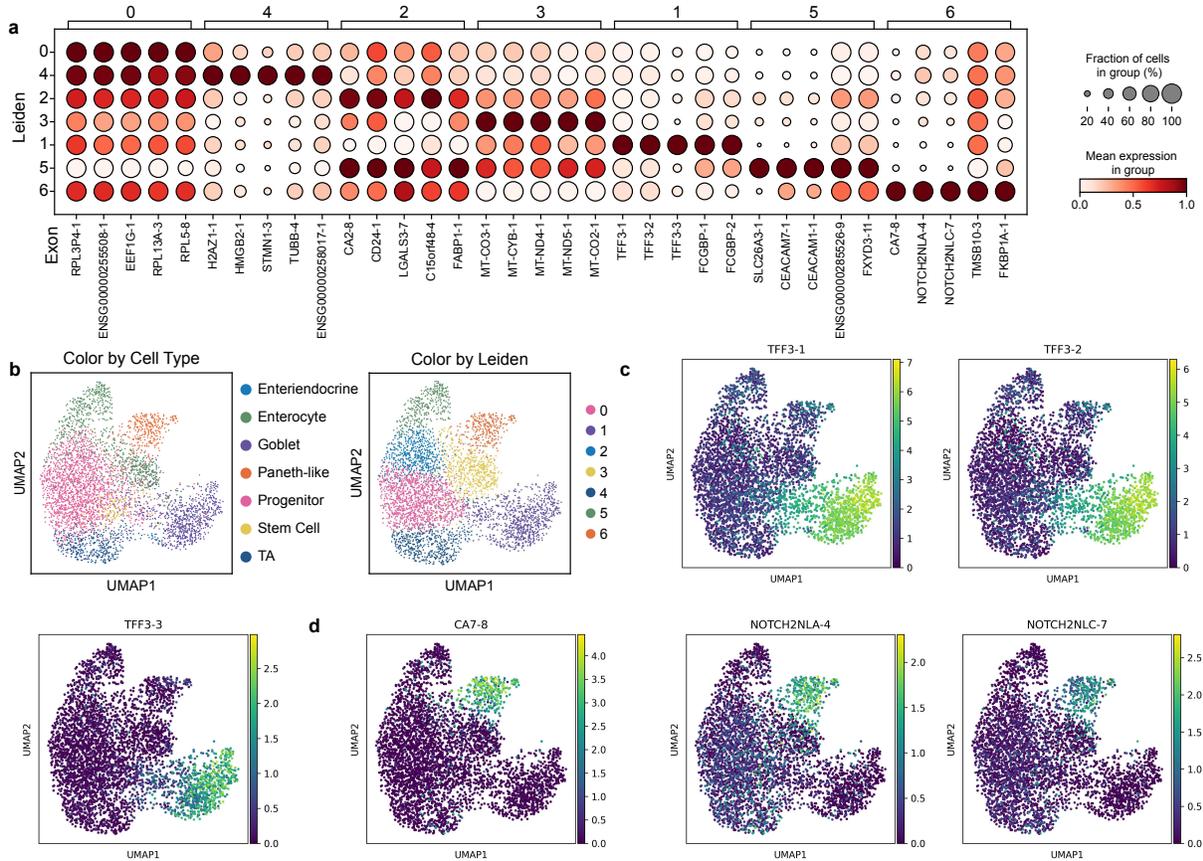
**Fig. S2 Histogram of non-zero exon and junction counts across cells.** This figure presents the distribution of exons and junctions with non-zero counts per cell, providing an overview of exon and junction coverage within each dataset. The x-axis represents the count of non-zero exons or junctions, while the y-axis indicates the number of cells. **a**, Full-length PBMC dataset, **b**, 10X Colon dataset, and **c**, 10X Rectum dataset.



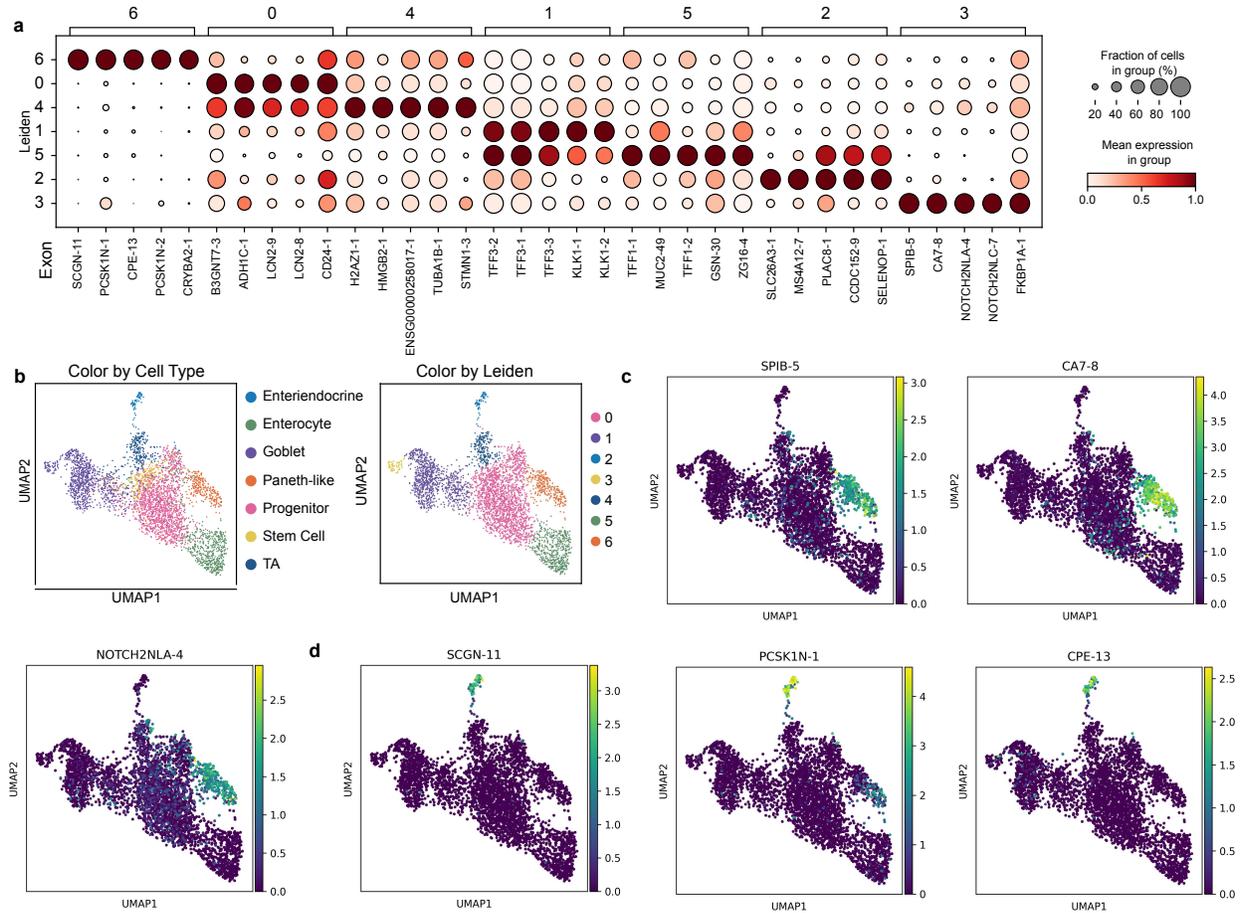
**Fig. S3 Comparison of batch effects in cell embeddings generated using the gene count table method and DOLPHIN on the 10X dataset. a,** Cell embeddings of the 10X colon dataset, colored by batch. **b,** Batch effect evaluation metrics for the 10X colon dataset, comparing the gene count table method and DOLPHIN. **c,** Cell embeddings of the 10X rectum dataset, colored by batch. **d,** Batch effect evaluation metrics for the 10X rectum dataset, comparing the gene count table method and DOLPHIN.



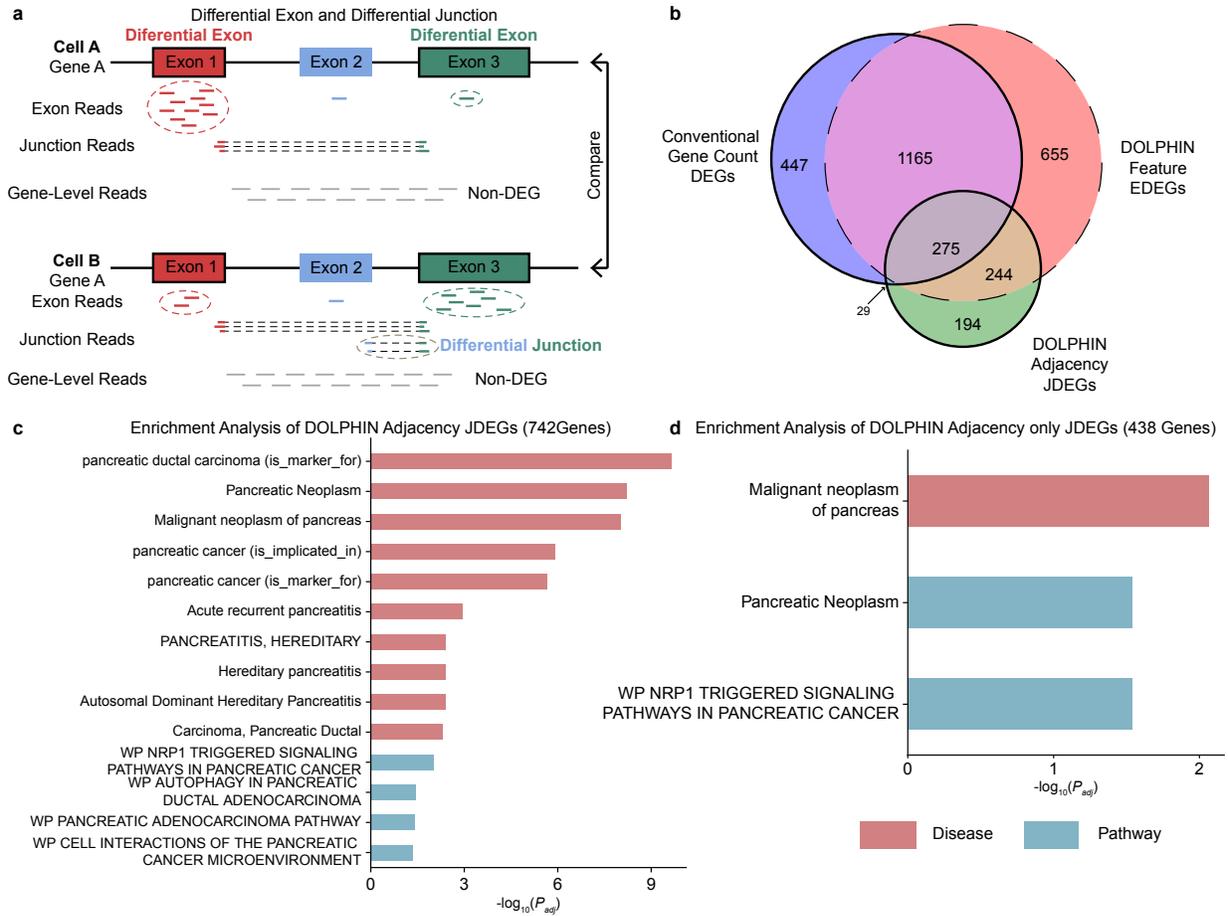
**Fig. S4 Exon-level cell type identification in the full-length PBMC dataset using DOLPHIN. a**, Dot plot of the top 5 differentially expressed exons per cell type, with exon labels in the format “gene name-exon number”. **b**, UMAP of cell clusters identified by DOLPHIN, labeled by cell types, Leiden clusters and sub-cell types. **c**, UMAP showing expression levels of the top differentially expressed exons specific to monocyte cells. **d**, UMAP of B cells, highlighting expression levels for their top marker exons. **e**, Exon expression level of the exon *CUX1-35*. **f**, Gene expression level of *CUX1*.



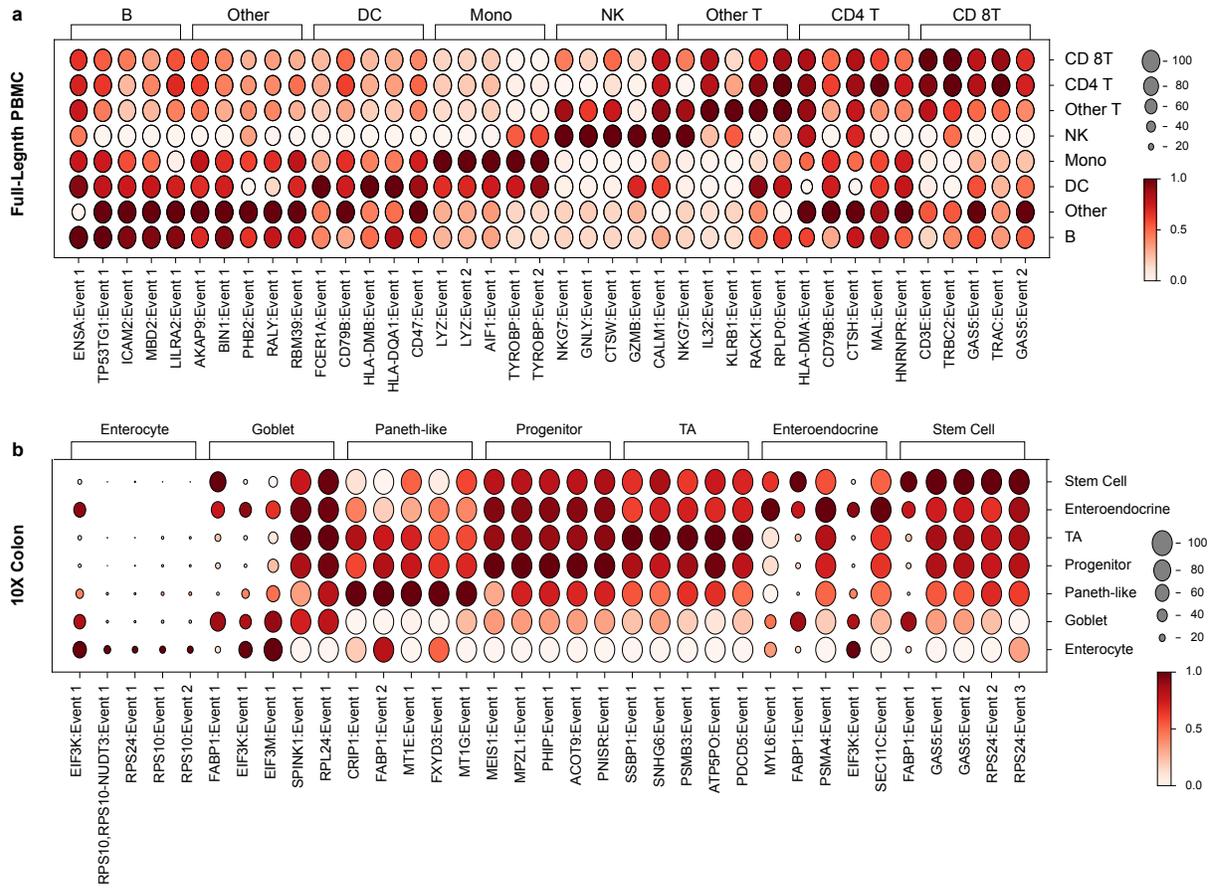
**Fig. S5 Exon-level cell type identification in the 10X colon dataset using DOLPHIN.** **a**, Dot plot of the top 5 differentially expressed exons per cell type, with exon labels in the format “gene name-exon number”. **b**, UMAP of cell clusters identified by DOLPHIN, labeled by cell types and Leiden clusters. **c**, UMAP showing expression levels of the top differentially expressed exons specific to Goblet cells. **d**, UMAP of Paneth-like cells, highlighting expression levels for their top marker exons.



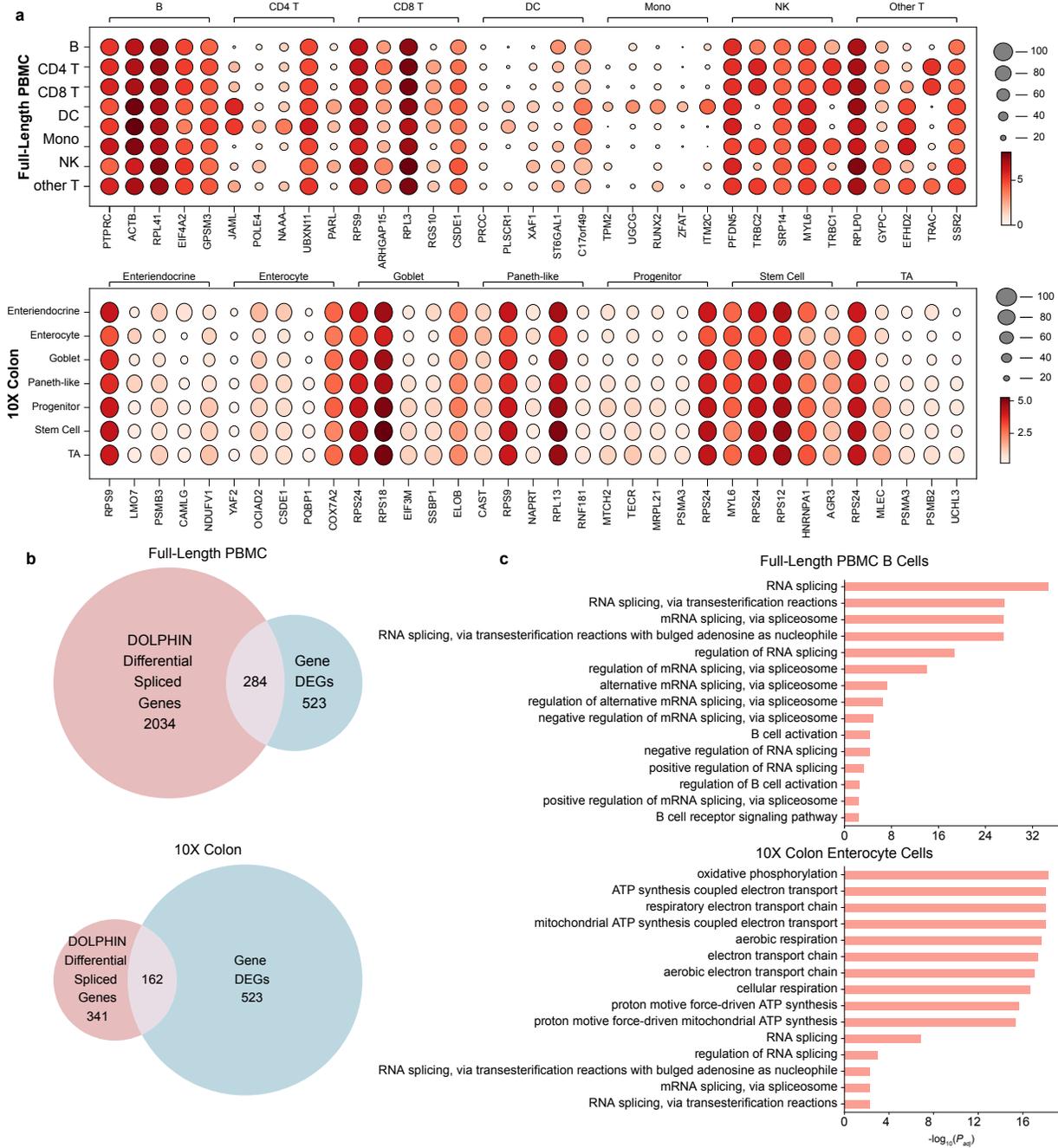
**Fig. S6 Exon-level cell type identification in the 10X rectum dataset using DOLPHIN. a**, Dot plot of the top 5 differentially expressed exons per cell type, with exon labels in the format “gene name-exon number”. **b**, UMAP of cell clusters identified by DOLPHIN, labeled by cell types and Leiden clusters. **c**, UMAP showing expression levels of the top differentially expressed exons specific to Paneth-like cells. **d**, UMAP of Enteriendocrine cells, highlighting expression levels for their top marker exons.



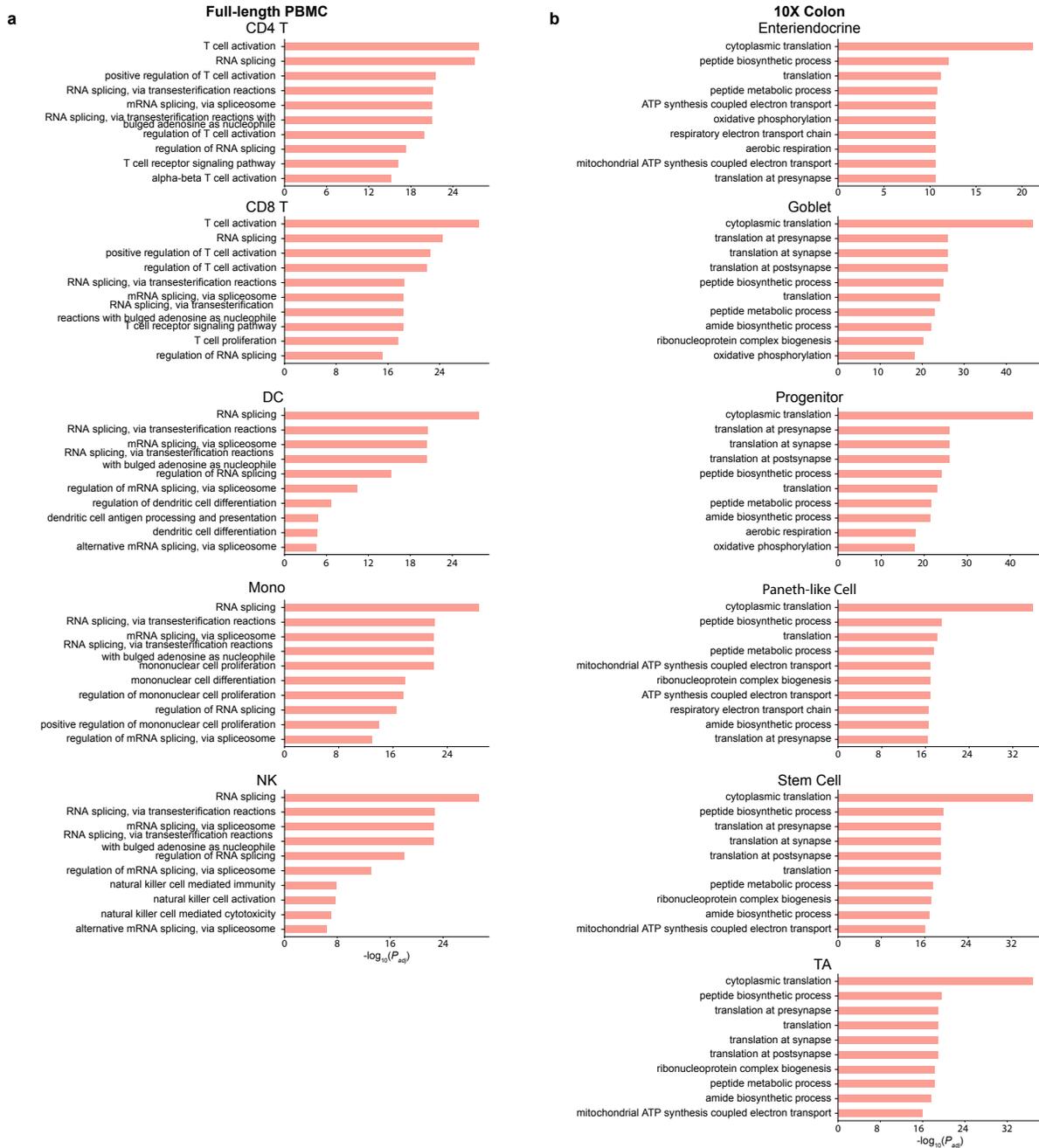
**Fig. S7 Differentially expressed junction-related genes (JDEGs) identification using DOLPHIN with an adjacency matrix.** **a**, A schematic diagram illustrating the identification of differential exons and junctions by comparing two cells for the same gene A. In this example, exons 1 and 3 are detected as differential exons, while the junction between exons 2 and 3 is identified as a differential junction. These identified differential exons and junctions form the basis for detecting EDEGs and JDEGs by integrating this information at the gene level. Notably, both cells show a total read count of 15 for gene A, which does not qualify as a DEG. **b**, Venn diagram showing EDEGs identified by DOLPHIN using the feature matrix, JDEGs identified by DOLPHIN using the adjacency matrix, and the DEGs using conventional gene count table method. **c**, Enrichment analysis of the 742 JDEGs identified using the DOLPHIN adjacency matrix. **d**, Enrichment analysis of JDEGs unique to DOLPHIN with the adjacency matrix (438 JDEGs are not identified as DEGs).



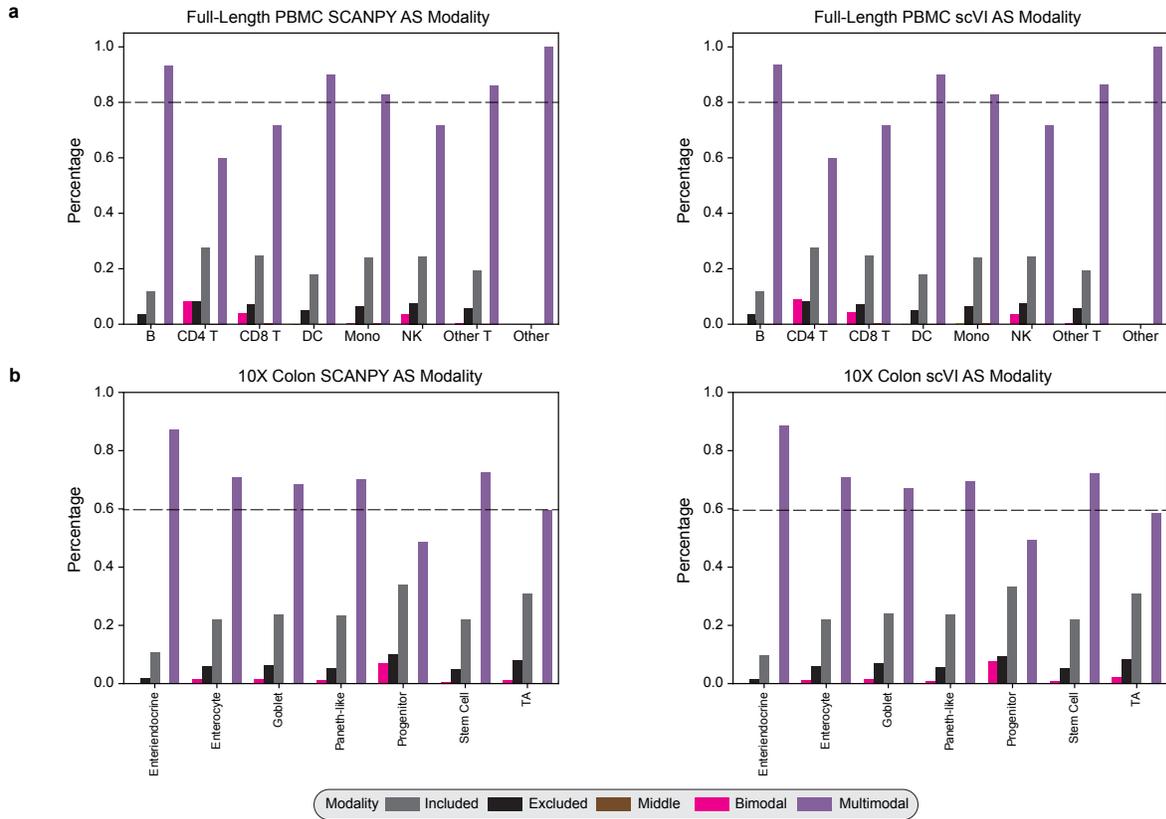
**Fig. S8** Top 5 differentially spliced events across cell types using analysis on single cell without aggregation. The average PSI values per cell type are shown for the top 5 differentially spliced events identified using single cell RNA-seq data. **a**, full-length PBMC dataset **b**, tag-based 10X colon dataset. Detailed information for each event is provided in Supplementary [Table S3](#).



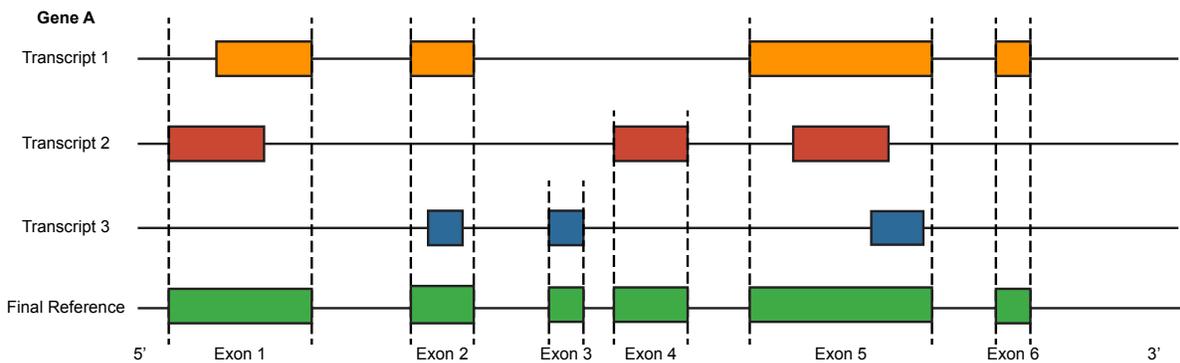
**Fig. S9 Differentially spliced genes uniquely detected by DOLPHIN, which were not identified using conventional gene count tables.** **a**, Differentially spliced genes identified by DOLPHIN that are not classified as DEGs across cell types. **b**, Venn diagram illustrating the overlap between differentially spliced genes detected by DOLPHIN and DEGs identified using the conventional gene count table. **c**, GOBP enrichment analysis based on differentially spliced genes, excluding those that overlap with DEGs.



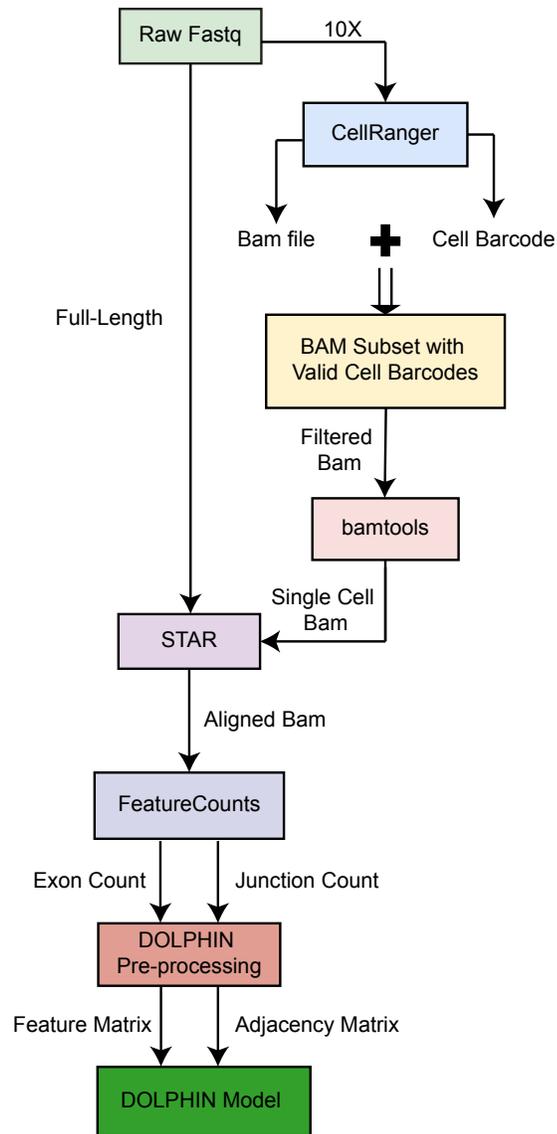
**Fig. S10 GOBP enrichment results demonstrate biological processes associated with differentially spliced genes for additional cell types.** GOBP terms are shown for differentially spliced genes across various cell types, with **a**, Full-length PBMC and **b**, 10X Colon datasets.



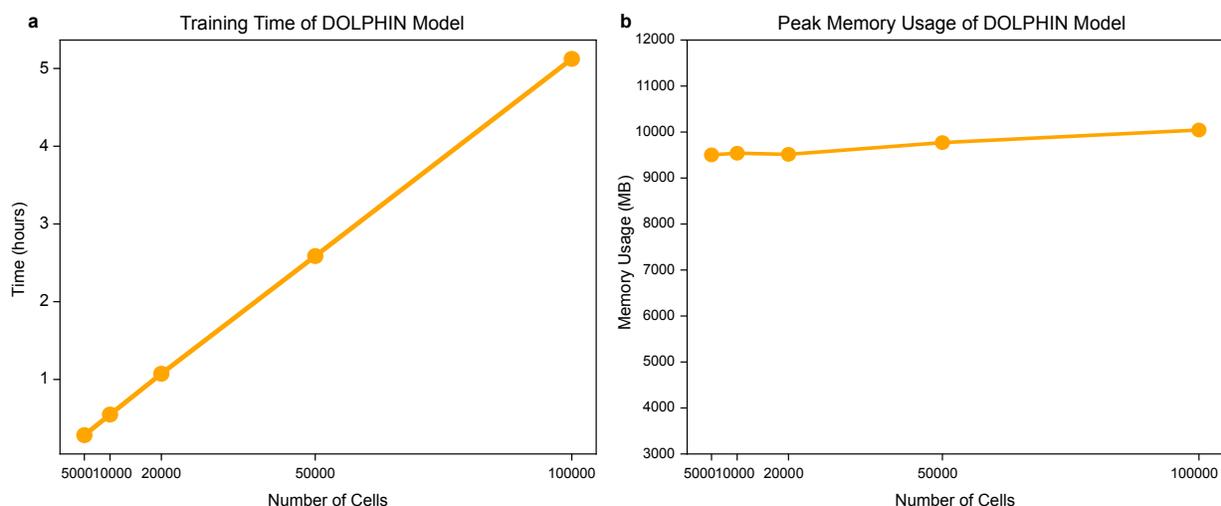
**Fig. S11 Additional alternative splicing modality analysis using SCANPY and scVI across cell types.** The percentage of each splicing modality per cell type is shown for **a**, Full-length PBMC and **b**, 10X Colon datasets. Results are presented for both SCANPY and scVI analyses, highlighting the distribution of alternative splicing modalities within each cell type.



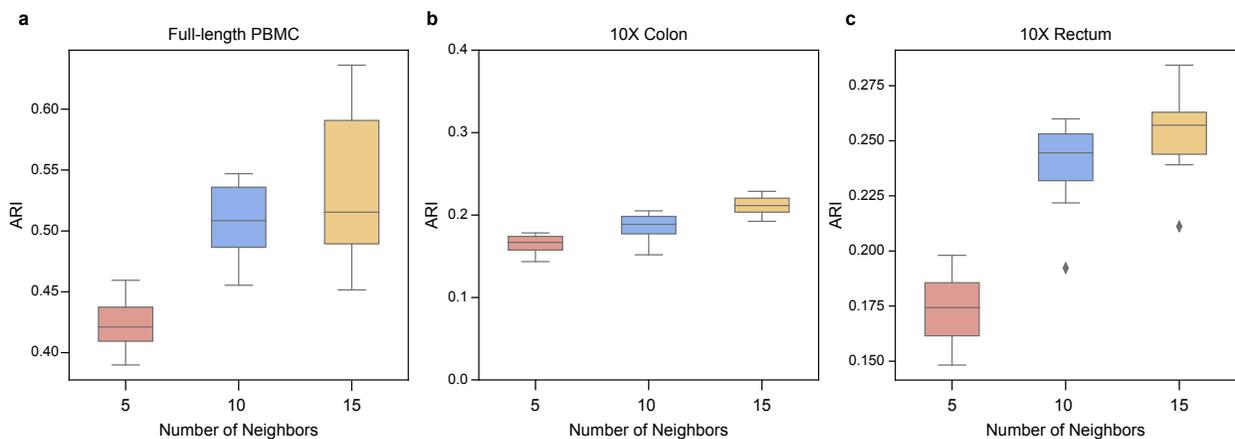
**Fig. S12 Generation of the reference GTF file for exon and junction identification.** The diagram illustrates the process of creating a reference GTF file designed to accurately identify exon counts and junction counts, addressing cases where multiple transcripts of the same gene contain overlapping exons.



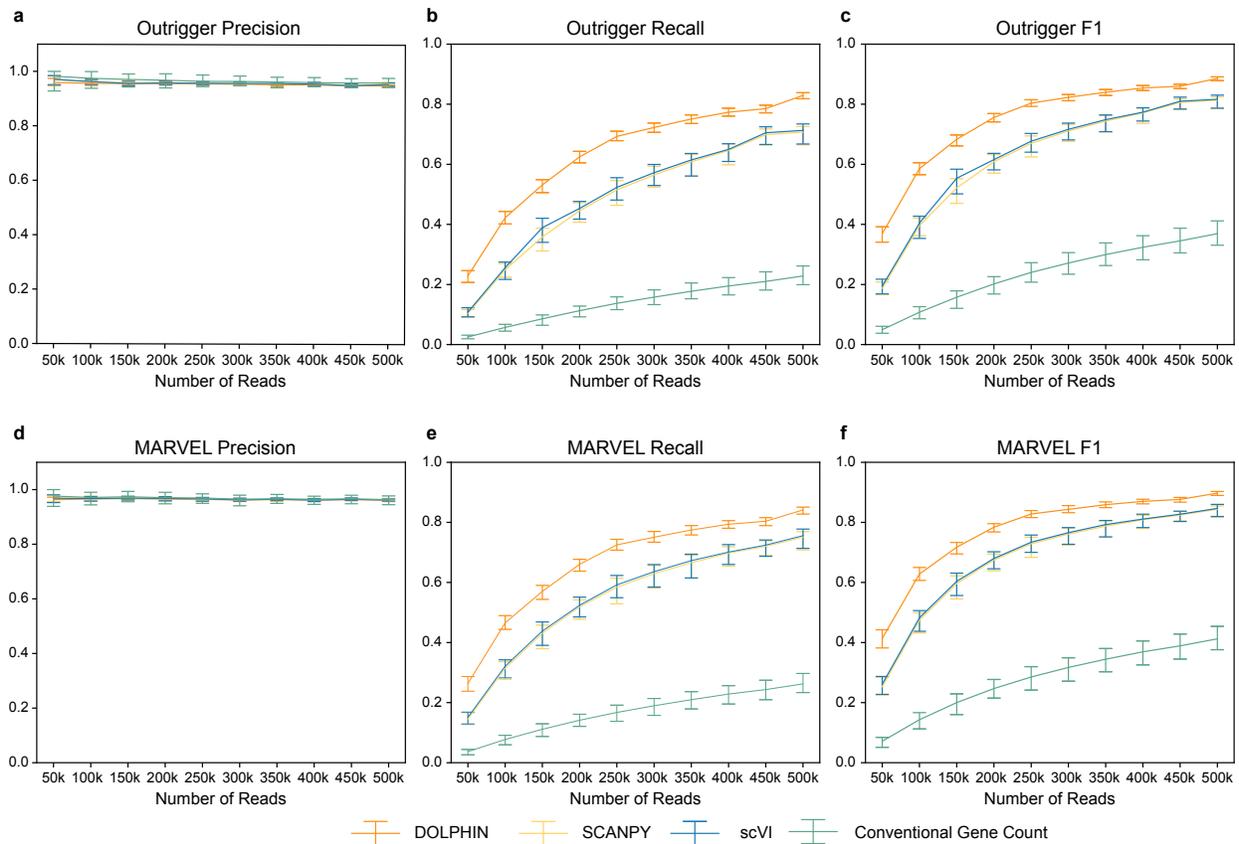
**Fig. S13 Preprocessing pipeline from raw data to feature and adjacency matrices for full-length scRNA-seq and 10X Genomics data.** The flowchart illustrates the preprocessing steps, beginning with raw data (Fastq files) and progressing through alignment, filtering, and counting, ultimately generating the feature matrix and adjacency matrix required for DOLPHIN analysis. Separate workflows are shown for full-length scRNA-seq and 10X Genomics data.



**Fig. S14 Model training time and peak memory usage of the DOLPHIN model.** **a**, Training time of the DOLPHIN model on Compute Canada’s cloud environment using an NVIDIA A100 GPU with the default setting of 200 epochs. The x-axis represents the number of cells, while the y-axis indicates the training time in hours. **b**, Peak memory usage of the DOLPHIN model, with the x-axis showing the number of cells and the y-axis displaying peak memory usage in megabytes (MB).



**Fig. S15 Benchmarking neighbor selection for KNN-based cell aggregation in evaluating alternative splicing.** This figure evaluates the effect of varying neighbor counts (K) in the KNN-based cell aggregation method on alternative splicing accuracy. After aggregating cells, alternative splicing is assessed by computing PSI values, followed by cell clustering. Clustering results are compared to ground truth cell types using ARI scores. **a**, Full-length PBMC dataset, **b**, 10X Colon dataset, and **c**, 10X Rectum dataset show ARI scores (y-axis) across different neighbor counts (x-axis), demonstrating the impact of neighbor selection on alternative splicing assessment across datasets.



**Fig. S16 Additional validation results on simulated data, comparing the effect of method and read count on precision, recall, and F1 scores for exon skipping detection.** This figure shows the performance impact of various methods and read counts on precision, recall, and F1 scores, specifically for detecting exon skipping events. Eight different approaches are compared, combining either Outtrigger or MARVEL with aggregation methods, including DOLPHIN, no aggregation, SCANPY, and scVI. DOLPHIN consistently demonstrated superior accuracy in identifying exon skipping events, outperforming methods that do not incorporate exon-level information. Panels **a-c** display results for Outtrigger-based methods, while panels **d-f** show MARVEL combined with each aggregation approach.

# Supplementary Tables

**Table S1. Top 5 Differential Alternative Splicing Events Identified by DOLPHIN in Full-Length PBMC**

Event	Event Information
PTPRC:Event 1	isoform1=junction:1:198699705-198703297+ isoform2=junction:1:198699705-198702386+@exon:1:198702387-198702530+@junction:1:198702531-198703297+
PTPRC:Event 2	isoform1=junction:1:198692374-198699563+ isoform2=junction:1:198692374-198698711+@exon:1:198696712-198696909+@junction:1:198696910-198699563+
S100A4:Event 1	isoform1=junction:6:32642254-32642951+ isoform2=junction:6:32642254-32642609+@exon:6:32642610-32642784+@junction:6:32642785-32642951+
S100A4:Event 2	isoform1=junction:1:153544810-153545752- isoform2=junction:1:153545519-153545752-@exon:1:153545470-153545518-@junction:1:153544810-153545469-
PRCC:Event 1	isoform1=junction:1:153544810-153545752- isoform2=junction:1:153545519-153545752-@novel exon:1:153545480-153545518-@junction:1:153544810-153545479-
HLA-DQA1:Event 1	isoform1=junction:1:156787175-156791696+ isoform2=junction:1:156787175-156791066+@exon:1:156791067-156791162+@junction:1:156791163-156791696+
PLSCR1:Event 1	isoform1=junction:3:146521706-146525604- isoform2=junction:3:146521544-146521705-@junction:3:146517168-146521543-
XAF1:Event 1	isoform1=junction:17:6760602-6762154+ isoform2=junction:17:6760602-6761885+@exon:17:6761886-6762037+@junction:17:6762038-6762154+
ST6GAL1:Event 1	isoform1=junction:3:187051347-187072848+ isoform2=junction:3:187051347-187064519+@exon:3:187064520-187064616+@junction:3:187064617-187072848+
C17orf49:Event 1	isoform1=junction:17:7016686-7017256+ isoform2=junction:17:7016686-7016949+@exon:17:7016950-7017014+@junction:17:7017015-7017256+
TMEM176B:Event 1	isoform1=junction:7:150793601-150796365- isoform2=junction:7:150794072-150796365-@exon:7:150793961-150794071-@junction:7:150793601-150793960-
CPVL:Event 1	isoform1=junction:7:29096218-29120892- isoform2=junction:7:29112823-29120892-@exon:7:29112704-29112822-@junction:7:29096218-29112703-
CPVL:Event 2	isoform1=junction:7:29030760-29066022- isoform2=junction:7:29064235-29066022-@exon:7:29064061-29064234-@junction:7:29030760-29064060-
SLC11A1:Event 1	isoform1=junction:2:218383103-218385146+ isoform2=junction:2:218383103-218384242+@exon:2:218384243-218384365+@junction:2:218384366-218385146+
LYZ:Event 1	isoform1=junction:12:69350273-69353152+ isoform2=junction:12:69350273-69352219+@exon:12:69352220-69352298+@junction:12:69352299-69353152+
TRDC:Event 1	isoform1=junction:14:22463211-22464203+ isoform2=junction:14:22463211-22463773+@exon:14:22463774-22463839+@junction:14:22463840-22464203+
FGFR3A:Event 1	isoform1=junction:1:161543200-161548420- isoform2=junction:1:161544959-161548420-@exon:1:161544701-161544958-@junction:1:161543200-161544700-
IL2RB:Event 1	isoform1=junction:22:37139223-37143520- isoform2=junction:22:37142513-37143520-@exon:22:37142434-37142512-@junction:22:37139223-37142433-
GZMB:Event 1	isoform1=junction:14:24632119-24632914- isoform2=junction:14:24632460-24632914-@exon:14:24632324-24632459-@junction:14:24632119-24632323-
MATK:Event 1	isoform1=junction:19:3778423-3778991- isoform2=junction:19:3778596-3778991-@exon:19:3778509-3778595-@junction:19:3778423-3778508-
CCL5:Event 1	isoform1=junction:17:35872465-35880229- isoform2=junction:17:35878640-35880229-@exon:17:35878528-35878639-@junction:17:35872465-35878527-
NKG7:Event 1	isoform1=junction:19:51372075-51372378- isoform2=junction:19:51372308-51372378-@exon:19:51372161-51372307-@junction:19:51372075-51372160-
GZMA:Event 1	isoform1=junction:5:55102753-55107793+ isoform2=junction:5:55102753-55105473+@exon:5:55105474-55105618+@junction:5:55105619-55107793+
CTSW:Event 1	isoform1=junction:11:65882527-65882778+ isoform2=junction:11:65882527-65882608+@exon:11:65882609-65882689+@junction:11:65882690-65882778+
NKG7:Event 2	isoform1=junction:19:51371836-51372160- isoform2=junction:19:51372075-51372160-@exon:19:51371940-51372074-@junction:19:51371836-51371939-
PRDX1:Event 1	isoform1=junction:1:45515808-45518937- isoform2=junction:1:45518829-45518937-@novel exon:1:45518770-45518828-@junction:1:45515808-45518769-
SAT1:Event 1	isoform1=junction:X:23783884-23785327+ isoform2=junction:X:23783884-23784293+@exon:X:23784294-23784403+@junction:X:23784404-23785327+
LST1:Event 1	isoform1=junction:6:31587319-31588517+ isoform2=junction:6:31587319-31587943+@exon:6:31587944-31587966+@junction:6:31587967-31588517+
CARD16:Event 1	isoform1=junction:11:105044659-105045290- isoform2=junction:11:105044932-105045290-@novel exon:11:105044870-105044931-@junction:11:105044659-105044869-
LST1:Event 2	isoform1=junction:6:31587319-31588517+ isoform2=junction:6:31587319-31587640+@exon:6:31587641-31587733+@junction:6:31587734-31588517+
SERPINA1:Event 1	isoform1=junction:14:94383242-94390456- isoform2=junction:14:94388664-94390456-@exon:14:94388560-94388663-@junction:14:94383242-94388559-
LY86:Event 1	isoform1=junction:6:6649678-6654543+ isoform2=junction:6:6649678-6652131+@novel exon:6:6652132-6652152+@junction:6:6652153-6654543+
MS4A6A:Event 1	isoform1=junction:11:60175612-60178259- isoform2=junction:11:60176000-60178259-@novel exon:11:60175964-60175999-@junction:11:60175612-60175963-
CD8B:Event 1	isoform1=junction:2:86844959-86852996- isoform2=junction:2:86846774-86852996-@exon:2:86846684-86846773-@junction:2:86844959-86846683-
CD3D:Event 1	isoform1=junction:11:118339495-118340374- isoform2=junction:11:118339907-118340374-@exon:11:118339775-118339906-@junction:11:118339495-118339774-
CD3E:Event 1	isoform1=junction:11:118312171-118313706+ isoform2=junction:11:118312171-118312617+@exon:11:118312618-118312866+@junction:11:118312867-118313706+
CD3D:Event 2	isoform1=junction:11:118339907-118342552- isoform2=junction:11:118340594-118342552-@exon:11:118340375-118340593-@junction:11:118339907-118340374-
IL7R:Event 1	isoform1=junction:5:35860991-35871055+ isoform2=junction:5:35860991-35867305+@exon:5:35867306-35867463+@junction:5:35867464-35871055+

Table S2. Top 5 Differential Alternative Splicing Events Identified by DOLPHIN in 10X Colon

Event	Event Information
RPS9: Event 1	isoform1=junction:19:54206463-54207397:+ isoform2=junction:19:54206463-54206552:+@exon:19:54206553-54206724:+@junction:19:54206725-54207397:+
LMO7: Event 1	isoform1=junction:13:75804542-75817160:+ isoform2=junction:13:75804542-75809153:+@exon:13:75809154-75809183:+@junction:13:75809184-75817160:+
LMO7: Event 2	isoform1=junction:13:75804542-75817160:+ isoform2=junction:13:75804542-75805478:+@exon:13:75805479-75805760:+@junction:13:75805761-75817160:+
PSMB3: Event 1	isoform1=junction:17:38755991-38764118:+ isoform2=junction:17:38755991-38760430:+@exon:17:38760431-38760608:+@junction:17:38760609-38764118:+
CAMLG: Event 1	isoform1=junction:5:134741524-134750758:+ isoform2=junction:5:134741524-134743986:+@exon:5:134743987-134744052:+@junction:5:134744053-134750758:+
MRPL43: Event 1	isoform1=junction:10:100983818-100986748:- isoform2=junction:10:100984075-100986748:-@exon:10:100984034-100984074:-@junction:10:100983818-100984033:-
RPS13: Event 1	isoform1=junction:11:17074467-17075453:- isoform2=junction:11:17075164-17075453:-@exon:11:17075097-17075163:-@junction:11:17074467-17075096:-
RPL27A: Event 1	isoform1=junction:11:8684082-8685677:+ isoform2=junction:11:8684082-8684717:+@exon:11:8684718-8684892:+@junction:11:8684893-8685677:+
YAF2: Event 1	isoform1=junction:12:4212161766-42237598:- isoform2=junction:12:42210620-42237598:-@exon:12:42210548-42210619:-@junction:12:4212161766-42210547:-
OCIAD2: Event 1	isoform1=junction:4:48897858-48904483:- isoform2=junction:4:48899829-48899829:-@exon:4:48899829-48899829:-@junction:4:48897858-48899828:-
RPS24: Event 1	isoform1=junction:10:78037305-78040614:+ isoform2=junction:10:78037305-78040203:+@exon:10:78040204-78040225:+@junction:10:78040226-78040614:+
RPS18: Event 1	isoform1=junction:6:33276067-33276390:+ isoform2=junction:6:33276067-33276175:+@exon:6:33276176-33276267:+@junction:6:33276268-33276390:+
CYBA: Event 1	isoform1=junction:16:88646198-88646754:- isoform2=junction:16:88646604-88646754:-@exon:16:88646520-88646603:-@junction:16:88646198-88646519:-
EIF3M: Event 1	isoform1=junction:11:32601823-32602278:+ isoform2=junction:11:32601823-32602078:+@exon:11:32602079-32602114:+@junction:11:32602115-32602278:+
SSBP1: Event 1	isoform1=junction:7:141745585-141750310:+ isoform2=junction:7:141745585-141745896:+@novel exon:7:141745897-141745948:+@junction:7:141745949-141750310:+
ARPC2: Event 1	isoform1=junction:2:218239485-218249363:+ isoform2=junction:2:218239485-21824519:+@exon:2:218245420-218245546:+@junction:2:218245547-218249363:+
SLPI: Event 1	isoform1=junction:20:45252420-45253574:- isoform2=junction:20:45253152-45253574:-@exon:20:45253002-45253151:-@junction:20:45252420-45253001:-
FXD3: Event 1	isoform1=junction:19:35121246-35123270:+ isoform2=junction:19:35121246-35122764:+@exon:19:35122765-35122839:+@junction:19:35122840-35123270:+
CCL15: Event 1	isoform1=junction:17:35997861-35998865:- isoform2=junction:17:35998392-35998865:-@exon:17:35998280-35998391:-@junction:17:35997861-35998279:-
CAST: Event 1	isoform1=junction:5:96722699-96729152:+ isoform2=junction:5:96722699-96727488:+@exon:5:96727489-96727530:+@junction:5:96727531-96729152:+
MYL6: Event 1	isoform1=junction:12:56160321-56161386:+ isoform2=junction:12:56160321-56160625:+@exon:12:56160626-56160670:+@junction:12:56160671-56161386:+
RPS24: Event 2	isoform1=junction:10:78037305-78040203:+ isoform2=junction:10:78037305-78037438:+@exon:10:78037439-78037441:+@junction:10:78037442-78040203:+
RPS24: Event 3	isoform1=junction:10:78037305-78040614:+ isoform2=junction:10:78037305-78037438:+@exon:10:78037439-78040225:+@junction:10:78040226-78040614:+
EPB41L4A-AS1: Event1	isoform1=junction:5:112161296-112162150:+ isoform2=junction:5:112161296-112161702:+@exon:5:112161703-112161775:+@junction:5:112161776-112162150:+
RPS12: Event 1	isoform1=junction:6:132814783-132816460:+ isoform2=junction:6:132814783-132814971:+@exon:6:132814972-132815224:+@junction:6:132815225-132816460:+
MTCH2: Event 1	isoform1=junction:11:47618920-47625673:- isoform2=junction:11:47622777-47625673:-@exon:11:47622701-47622776:-@junction:11:47618920-47622700:-
TECR: Event 1	isoform1=junction:19:14565291-14565743:+ isoform2=junction:19:14565291-14565617:+@exon:19:14565618-14565663:+@junction:19:14565664-14565743:+
MRPL21: Event 1	isoform1=junction:11:68892994-68896514:- isoform2=junction:11:68893456-68896514:-@exon:11:68893403-68893455:-@junction:11:68892994-68893402:-
PSMA3: Event 1	isoform1=junction:14:58270486-58271850:+ isoform2=junction:14:58270486-58270933:+@exon:14:58270934-58270998:+@junction:14:58270999-58271850:+
DEK: Event 1	isoform1=junction:6:18258063-18263842:- isoform2=junction:6:18258406-18263842:-@exon:6:18258304-18258405:-@junction:6:18258063-18258303:-
HSPD1: Event 1	isoform1=junction:2:197489248-197493323:- isoform2=junction:2:197490297-197493323:-@exon:2:197490197-197490296:-@junction:2:197489248-197490196:-
MLEC: Event 1	isoform1=junction:12:120695001-120696315:+ isoform2=junction:12:120695001-120695094:+@exon:12:120695095-120695152:+@junction:12:120695153-120696315:+
UQC2: Event 1	isoform1=junction:6:33697751-33701345:- isoform2=junction:6:33700514-33701345:-@exon:6:33700444-33700513:-@junction:6:33697751-33700443:-

Table S3. Top 5 Differential Alternative Splicing Events in Single-Cell Analysis

Event	Event Information
Full-Lnegth PBMC	
ENSA: Event 1	isoform1=junction:1:150625809-150627466;-isoform2=junction:1:150626527-150627466;-@exon:1:150626479-150626526;-@junction:1:150625809-150626478;-
TP53TG1: Event 1	isoform1=junction:7:87341685-87345304;-isoform2=junction:7:87345234-87345304;-@exon:7:87345043-87345233;-@junction:7:87341685-87345042;-
ICAM2: Event 1	isoform1=junction:17:64006736-64020522;-isoform2=junction:17:64007823-64020522;-@exon:17:64007741-64007822;-@junction:17:64006736-64007740;-
MBD2: Event 1	isoform1=junction:18:54166167-54188873;-isoform2=junction:18:54187838-54188873;-@exon:18:54187714-54187837;-@junction:18:54166167-54187713;-
LILRA2: Event 1	isoform1=junction:19:54576110-54587200;+isoform2=junction:19:54576110-54577464;+@exon:19:54577465-54577723;+@junction:19:54577724-54587200;+
AKAP9: Event 1	isoform1=junction:7:91980334-91992157;+@exon:7:91992158-91992211;+@junction:7:91992212-91992884;+  isoform2=junction:7:91980334-91980872;+@exon:7:91980873-91980958;+@junction:7:91980959-91992884;+
BIN1: Event 1	isoform1=junction:2:127051244-127059010;-isoform2=junction:2:127057602-127059010;-@exon:2:127057473-127057601;-@junction:2:127051244-127057472;-
PHB2: Event 1	isoform1=junction:12:6969578-6970195;-isoform2=junction:12:6970017-6970195;-@novel_exon:12:6969956-6970016;-@junction:12:6969578-6969955;-
RALY: Event 1	isoform1=junction:20:34073867-34075873;+isoform2=junction:20:34073867-34074117;+@novel_exon:20:34074118-34074147;+@junction:20:34074118-34075873;+
RBM39: Event 1	isoform1=junction:20:35732136-35738967;-isoform2=junction:20:35735082-35738967;-@exon:20:35734186-35735081;-@junction:20:35732136-35734185;-
FCER1A: Event 1	isoform1=junction:1:159302875-159305987;+isoform2=junction:1:159302875-159303927;+@exon:1:159303928-159304182;+@junction:1:159304183-159305987;+
CD79B: Event 1	isoform1=junction:17:63929889-63931334;-isoform2=junction:17:63930386-63931334;-@exon:17:63930074-63930385;-@junction:17:63929889-63930073;-
HLA-DMB: Event 1	isoform1=junction:6:32935378-32937171;-isoform2=junction:6:32935378-32937171;-@exon:6:32935378-32935652;-@junction:6:32935378-32935652;-
HLA-DQA1: Event 1	isoform1=junction:6:32642254-32642951;+isoform2=junction:6:32642254-32642609;+@exon:6:32642610-32642784;+@junction:6:32642785-32642951;+
CD47: Event 1	isoform1=junction:3:108051971-108057476;-isoform2=junction:3:10805567-108057476;-@exon:3:10805567-108057476;-@junction:3:108051971-10805567;-
LYZ: Event 1	isoform1=junction:12:69350273-69353152;+isoform2=junction:12:69350273-69352219;+@exon:12:69352220-69352298;+@junction:12:69352299-69353152;+
LYZ: Event 2	isoform1=junction:12:69348454-69352219;+isoform2=junction:12:69348454-69350107;+@exon:12:69350108-69350272;+@junction:12:69350273-69352219;+
AIF1: Event 1	isoform1=junction:6:31615737-31616343;+isoform2=junction:6:31615737-31616103;+@exon:6:31616104-31616145;+@junction:6:31616104-31616343;+
TYROBP: Event 1	isoform1=junction:19:35907581-35908167;-isoform2=junction:19:35907763-35908167;-@exon:19:35907730-35907762;-@junction:19:35907581-35907729;-
TYROBP: Event 2	isoform1=junction:19:35904635-35907445;-isoform2=junction:19:35907265-35907445;-@exon:19:35907218-35907264;-@junction:19:35904635-35907217;-
NGK7: Event 1	isoform1=junction:19:51372075-51372378;-isoform2=junction:19:51372308-51372378;-@exon:19:51372161-51372307;-@junction:19:51372075-51372160;-
GNLY: Event 1	isoform1=junction:2:85696057-85698563;+isoform2=junction:2:85696057-85697505;+@exon:2:85697506-85697677;+@junction:2:85697678-85698563;+
CTS5: Event 1	isoform1=junction:11:65882527-65882778;+isoform2=junction:11:65882527-65882608;+@exon:11:65882609-65882689;+@junction:11:65882690-65882778;+
GZMB: Event 1	isoform1=junction:14:24632119-24632914;-isoform2=junction:14:24632640-24632914;-@exon:14:24632324-24632459;-@junction:14:24632119-24632323;-
CALM1: Event 1	isoform1=junction:14:90397234-90401258;+isoform2=junction:14:90397234-90400064;+@exon:14:90400065-90400095;+@junction:14:90400096-90401258;+
IL32: Event 1	isoform1=junction:16:3067614-3068179;+isoform2=junction:16:3067614-3067983;+@exon:16:3067984-3068010;+@junction:16:3068011-3068179;+
KLRB1: Event 1	isoform1=junction:12:9595422-9598498;-isoform2=junction:12:9598162-9598498;-@exon:12:9598046-9598161;-@junction:12:9595422-9598045;-
RACK1: Event 1	isoform1=junction:5:181238240-181239486;-isoform2=junction:5:181239178-181239486;-@exon:5:181239067-181239177;-@junction:5:181238240-181239066;-
RPLP0: Event 1	isoform1=junction:12:120197463-120198853;-isoform2=junction:12:120198740-120198853;-@exon:12:120198554-120198739;-@junction:12:120197463-120198853;-
HLA-DMA: Event 1	isoform1=junction:6:32950804-32952948;-isoform2=junction:6:32952462-32952948;-@exon:6:32952284-32952461;-@junction:6:32950804-32952283;-
CTSH: Event 1	isoform1=junction:15:78931507-78932371;-isoform2=junction:15:78932039-78932371;-@exon:15:78931869-78932038;-@junction:15:78931507-78931868;-
MAL: Event 1	isoform1=junction:2:95025886-95049580;+isoform2=junction:2:95025886-95047958;+@exon:2:95047959-95048126;+@junction:2:95048127-95049580;+
HNRNP9: Event 1	isoform1=junction:1:23338609-23344210;-isoform2=junction:1:23341021-23344210;-@exon:1:23340852-23341020;-@junction:1:23338609-23340851;-
CD3E: Event 1	isoform1=junction:11:118312171-118313706;+isoform2=junction:11:118312171-118312617;+@exon:11:118312618-118312866;+@junction:11:11831267-118313706;+
TRBC2: Event 1	isoform1=junction:7:142801428-142802104;+isoform2=junction:7:142801428-142801943;+@exon:7:142801944-142801961;+@junction:7:142801962-142802104;+
GAS5: Event 1	isoform1=junction:1:173866207-173866990;-isoform2=junction:1:173866797-173866990;-@exon:1:173866528-173866796;-@junction:1:173866207-173866690;-
TRAC: Event 1	isoform1=junction:14:22549683-22551604;+isoform2=junction:14:22549683-22550556;+@exon:14:22550557-22550664;+@junction:14:22550665-22551604;+
GAS5: Event 2	isoform1=junction:1:173864305-173865228;-isoform2=junction:1:173864705-173865228;-@exon:1:173864484-173864704;-@junction:1:173864305-173864483;-
10X Colon	
EIF3K: Event 1	isoform1=junction:19:38635119-38636888;+isoform2=junction:19:38635119-38636200;+@novel_exon:19:38636201-38636251;+@junction:19:38636252-38636888;+
RPS10-NUDT3	isoform1=junction:6:34421808-34424668;-
RPS10: Event 1	isoform2=junction:6:34422283-34424668;-@novel_exon:6:34422237-34422282;-@junction:6:34421808-34422236;-
RPS24: Event 1	isoform1=junction:10:78037442-78040203;+isoform2=junction:10:78037442-78037964;+@exon:10:78037965-78037982;+@junction:10:78037983-78040203;+
RPS10: Event 2	isoform1=junction:6:34417548-34418368;-isoform2=junction:6:34417898-34418368;-@exon:6:34417798-34417897;-@junction:6:34417548-34417797;-
RPS10: Event 1	isoform1=junction:6:34417548-34418368;-isoform2=junction:6:34417871-34418368;-@novel_exon:6:34417798-34417870;-@junction:6:34417548-34417797;-
FABP1: Event 1	isoform1=junction:2:88123105-88124493;-isoform2=junction:2:88123944-88124493;-@novel_exon:2:88123848-88123943;-@junction:2:88123105-88123847;-
EIF3M: Event 1	isoform1=junction:11:32601823-32602278;-isoform2=junction:11:32601823-32602078;+@exon:11:32602079-32602114;+@junction:11:32602115-32602278;+
SPINK1: Event 1	isoform1=junction:5:147824707-147829598;-isoform2=junction:5:147828129-147829598;-@exon:5:147828022-147828128;-@junction:5:147824707-147828021;-
RPL24: Event 1	isoform1=junction:3:101681216-101682770;-isoform2=junction:3:101682493-101682770;-@exon:3:101682429-101682492;-@junction:3:101681216-101682428;-
CRIP1: Event 1	isoform1=junction:14:105488261-105488470;+isoform2=junction:14:105488261-105488330;+@exon:14:105488331-105488388;+@junction:14:105488389-105488470;+
FABP1: Event 2	isoform1=junction:2:88123105-88126175;-isoform2=junction:2:88124587-88126175;-@exon:2:88124494-88124586;-@junction:2:88123105-88124493;-
MT1E: Event 1	isoform1=junction:16:56625880-56626879;+isoform2=junction:16:56625880-56626465;+@exon:16:56626466-56626531;+@junction:16:56626532-56626879;+
FXYP3: Event 1	isoform1=junction:19:35122840-35123270;+isoform2=junction:19:35122840-35122917;+@exon:19:35122918-35122954;+@junction:19:35122955-35123270;+
MT1G: Event 1	isoform1=junction:16:56666971-56667965;-isoform2=junction:16:56667378-56667965;-@exon:16:56667312-56667377;-@junction:16:56666971-56667311;-
MEIS1: Event 1	isoform1=junction:2:66435869-66437736;+isoform2=junction:2:66435869-66436895;+@novel_exon:2:66436896-66436943;+@junction:2:66436944-66437736;+
MPZL1: Event 1	isoform1=junction:1:167773369-16777819;+isoform2=junction:1:167773369-167776063;+@exon:1:167776064-167776166;+@junction:1:167776167-16777819;+
PHIP: Event 1	isoform1=junction:6:78983118-78988208;-isoform2=junction:6:78985429-78988208;-@exon:6:78985352-78985428;-@junction:6:78983118-78985351;-
ACOT9: Event 1	isoform1=junction:X:23707945-23721880;-isoform2=junction:X:23713209-23721880;-@exon:X:23713135-23713208;-@junction:X:23707945-23713134;-
PNISR: Event 1	isoform1=junction:6:99402711-99404602;-isoform2=junction:6:99403883-99404602;-@exon:6:99403829-99403882;-@junction:6:99402711-99403882;-
SSBP1: Event 1	isoform1=junction:7:141743990-141750310;+isoform2=junction:7:141743990-141745495;+@exon:7:141745496-141745584;+@junction:7:141745585-141750310;+
SNHG6: Event 1	isoform1=junction:8:66922115-66922813;-isoform2=junction:8:66922393-66922613;-@exon:8:66922324-66922392;-@junction:8:66922115-66922323;-
PSMB3: Event 1	isoform1=junction:17:38760609-38764118;+isoform2=junction:17:38760609-38762410;+@exon:17:38762411-38762505;+@junction:17:38762506-38764118;+
ATP5PO: Event 1	isoform1=junction:21:33903640-33907340;-isoform2=junction:21:33904022-33907340;-@exon:21:33903935-33904021;-@junction:21:33903640-33903934;-
PDCD5: Event 1	isoform1=junction:19:32585908-32587252;+isoform2=junction:19:32585908-32586857;+@exon:19:32586858-32586929;+@junction:19:32586930-32587252;+
MYL6: Event 1	isoform1=junction:12:56160621-56161386;+isoform2=junction:12:56160321-56160625;+@exon:12:56160626-56160670;+@junction:12:56160671-56161386;+
PSMA4: Event 1	isoform1=junction:15:78545765-78548789;+isoform2=junction:15:78545765-78546574;+@exon:15:78546575-78546698;+@junction:15:78546699-78548789;+
SEC11C: Event 1	isoform1=junction:18:59155808-59158631;+isoform2=junction:18:59155808-59157607;+@exon:18:59157608-59157665;+@junction:18:59157666-59158631;+
GAS5: Event 1	isoform1=junction:1:173864507-173865228;-isoform2=junction:1:173864705-173865228;-@exon:1:173864675-173864704;-@junction:1:173864507-173864674;-
GAS5: Event 2	isoform1=junction:1:173864305-173865228;-isoform2=junction:1:173864705-173865228;-@exon:1:173864484-173864704;-@junction:1:173864305-173864483;-
RPS24: Event 2	isoform1=junction:10:78037305-78040614;+isoform2=junction:10:78037305-78037438;+@exon:10:78037439-78040225;+@junction:10:78040226-78040614;+
RPS24: Event 3	isoform1=junction:10:78037305-78040203;+isoform2=junction:10:78037305-78037438;+@exon:10:78037439-78037441;+@junction:10:78037442-78040203;+