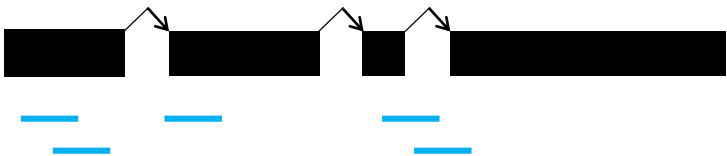
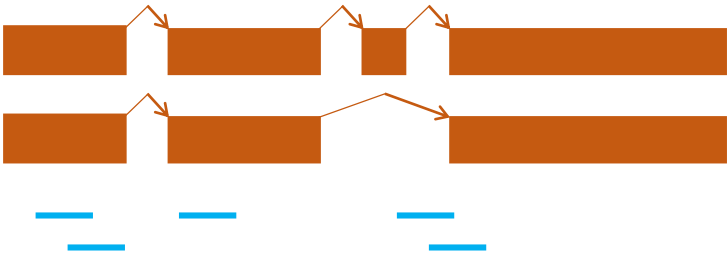
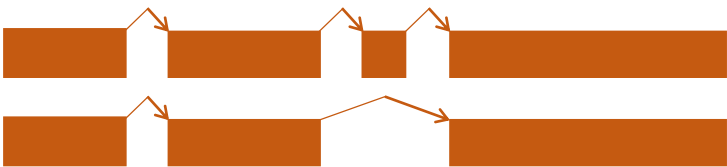
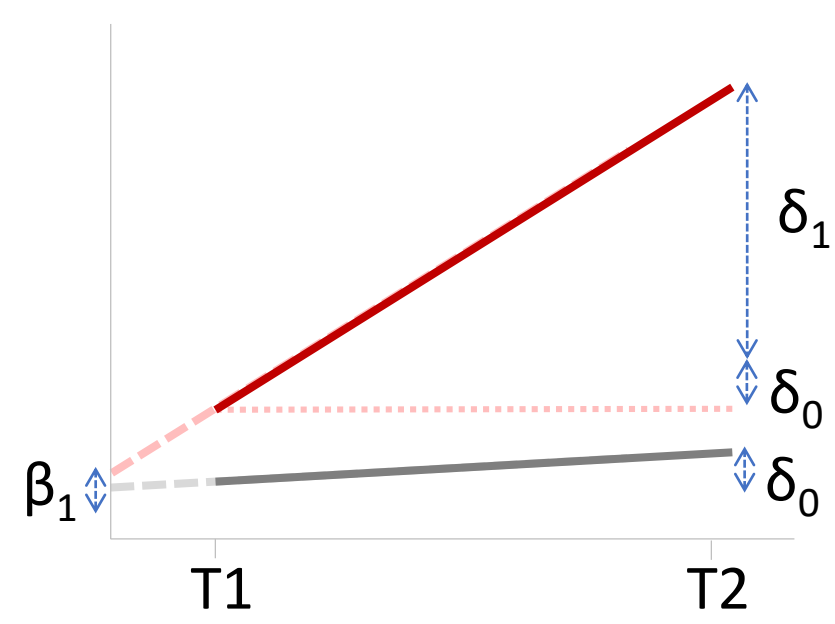


| | Analysis | Annotation | Expression |
|----|--|---|-------------------------------------|
| 1. |  | Reference genome | RNA-Seq reads (WT = 29, TG = 30) |
| 2. |  | Iso-Seq defined transcriptome (n = 12) | RNA-Seq reads (WT = 29, TG = 30) |
| 3. |  | Iso-Seq defined transcriptome (n = 12) | Iso-Seq reads (WT = 6, TG = 6) |



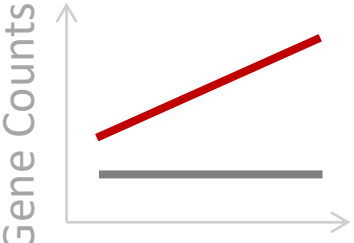
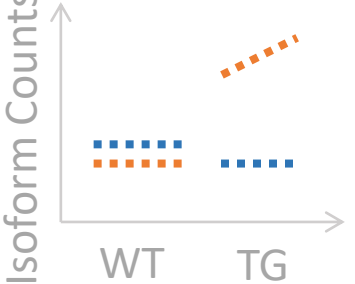
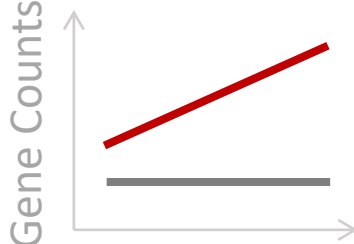
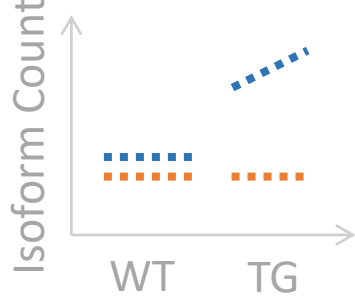
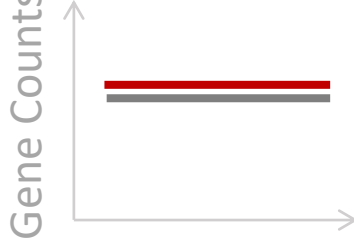

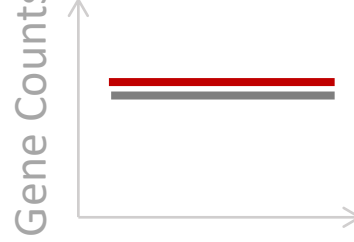

Inference from regression coefficients

β_1 : WT vs TG at T1

δ_0 : WT over time

δ_1 : WT vs TG over time

| Model | β_1 CasevsControl | δ_0 Time | δ_1 TimexCase | Condition | Effects |
|-------|----------------------------|--------------------|-------------------------|-----------|----------------|
| 1 | ✓ | x | x | | Genotype |
| 2 | ✓ | ✓ | x | | Genotype + Age |
| 3 | x | ✓ | x | | Age |
| 4 | x | ✓ | ✓ | | Interaction |
| 5 | x | x | ✓ | | Interaction |
| 6 | ✓ | x | ✓ | | Interaction |
| 7 | ✓ | ✓ | ✓ | | Interaction |

| | Differential Gene Expression | Differential Isoform Usage | Major isoform switching | Condition | |
|---|------------------------------------|----------------------------------|-------------------------------|---|---|
| 1 | ✓ | ✓ | ✓ |  |  |
| 2 | ✓ | ✓ | x |  |  |
| 3 | x | ✓ | ✓ |  |  |
| 4 | x | ✓ | x |  |  |

| Isoform | Associated Gene | Structural Category | Associated Transcript | Length | FL Sample 1 | FL Sample 2 |
|---------|-----------------|---------------------|-----------------------|--------|-------------|-------------|
| PB.1.1 | Gene 1 | FSM | ENMUST1 | 3000 | 10 | 10 |
| PB.1.2 | Gene 1 | ISM | ENMUST1 | 1500 | 100 | 90 |
| PB.1.3 | Gene 1 | ISM | ENMUST2 | 2400 | 20 | 20 |
| PB.1.4 | Gene 1 | ISM | ENMUST3 | 2900 | 5 | 4 |
| PB.1.5 | Gene 1 | ISM | ENMUST3 | 2190 | 5 | 2 |
| PB.1.6 | Gene 1 | ISM | ENMUST4 | 1250 | 1 | 0 |



| Isoform | Associated Gene | Structural Category | Associated Transcript | Length | FL Sample 1 | FL Sample 2 |
|---------|-----------------|---------------------|-----------------------|--------|-------------|-------------|
| PB.1.1 | Gene 1 | FSM | ENMUST1 | 3000 | 110 | 100 |
| PB.1.3 | Gene 1 | ISM | ENMUST2 | 2400 | 20 | 20 |
| PB.1.4 | Gene 1 | ISM | ENMUST3 | 2900 | 10 | 6 |

