1 DAG1

Dystroglycan is a laminin binding component of the dystrophin-glycoprotein complex which provides a linkage between the subsarcolemmal cytoskeleton and the extracellular matrix. Dystroglycan 1 is a candidate gene for the site of the mutation in autosomal recessive muscular dystrophies. The dramatic reduction of dystroglycan 1 in Duchenne muscular dystrophy leads to a loss of linkage between the sarcolemma and extracellular matrix, rendering muscle fibers more susceptible to necrosis. Dystroglycan also functions as dual receptor for agrin and laminin-2 in the Schwann cell membrane. The muscle and nonmuscle isoforms of dystroglycan differ by carbohydrate moieties but not protein sequence. Alternative splicing results in multiple transcript variants all encoding the same protein. In the bat transcripts the exon at location 49,547,853-49,548,253 on chromosome 3 (hg19) is missing.

*The DAG1 is strongly down-regulated in Ebola infected human cells, which is not observable in bat cell lines. Further is DAG1 known to be associated with the Lassa-Fever[1]. *

Figure 1: IGV Genome Browser screenshot of gene DAG1.

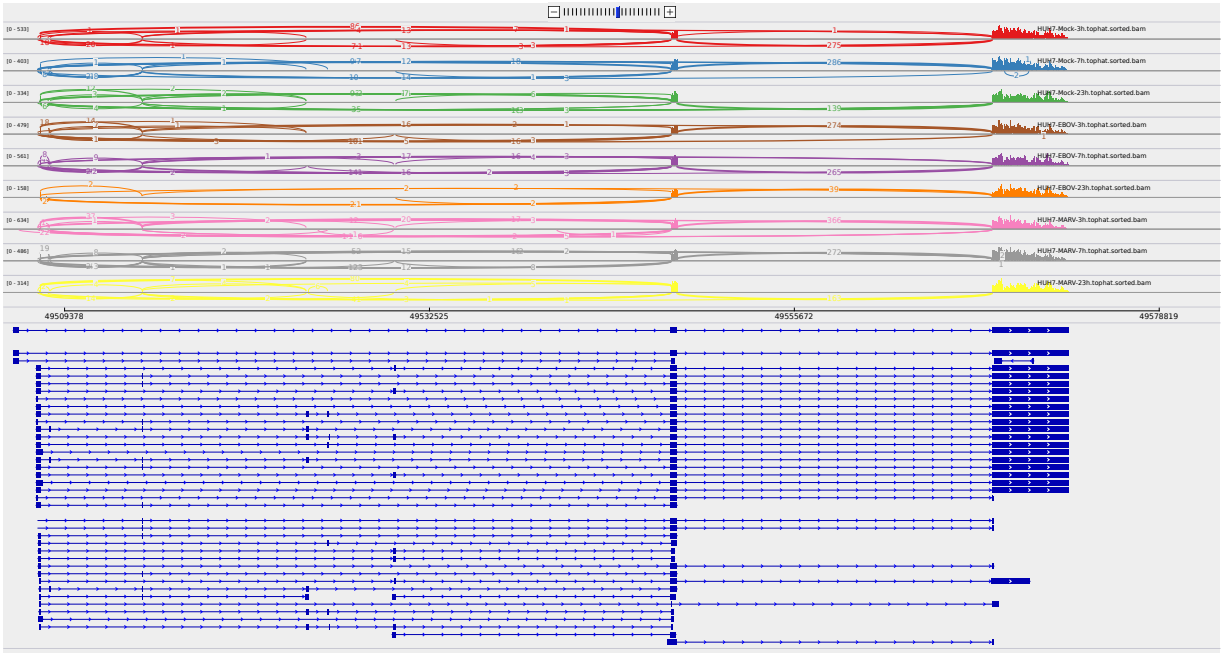

Figure 2: Sashimi plot of gene DAG1.

[1] http://biograph.be/concept/graph/C0023092/C1413902

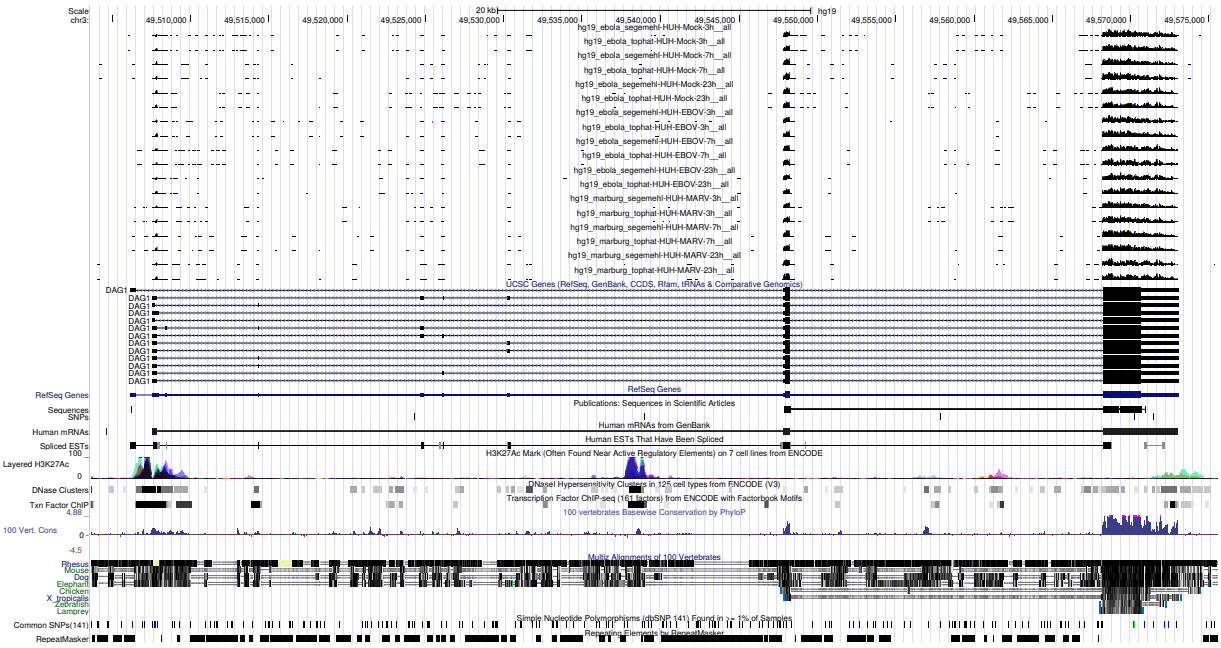

Figure 3: UCSC Genome Browser screenshot of gene DAG1.

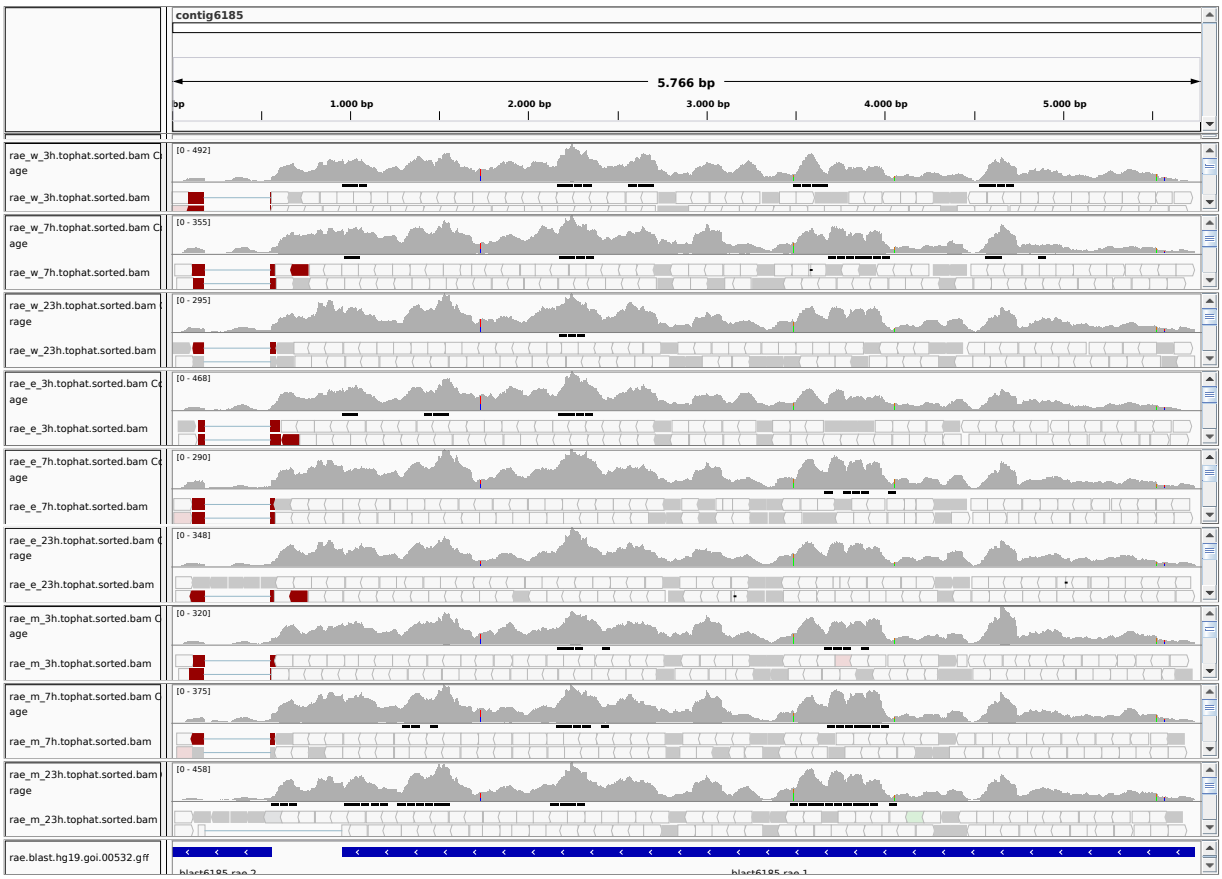

Figure 4: Expression pattern of the DAG1 gene in bats. Note the missing strong down-regulation in ebola infected cells.