

Supplementary Table S1. Histological IVD scoring based on Tam et al.

Genotype	Part A (I) NP structure	Part A (II) NP clefts/fissures	Part B (I) AF structure	Part B (II) AF clefts/fissures	Part C AF/NP boundary	Total score
WT 1						
IVD 1	1	1	1	1	1	5
IVD 2	1	1	1	1	1	5
IVD 3	1	1	1	0	1	4
WT 2						
IVD 1	1	1	1	0	1	4
IVD 2	1	1	1	0	1	4
IVD 3	1	1	1	0	0	3
WT 3						
IVD 1	1	1	1	0	1	4
IVD 2	1	1	1	1	1	5
IVD 3	1	1	1	0	1	4
WT 4						
IVD 1	1	1	1	1	1	5
IVD 2	1	1	1	0	1	4
IVD 3	1	1	1	1	1	5
WT 5						
IVD 1	1	1	1	0	0	3
IVD 2	1	1	1	0	0	3
IVD 3	1	1	1	0	0	3
WT 6						
IVD 1	1	1	1	0	1	4
IVD 2	1	1	1	0	0	3
IVD 3	1	1	1	0	1	4
Tnmd ^{+/-} 1						
IVD 1	1	1	1	1	1	5
IVD 2	2	1	1	1	1	6
IVD 3	1	1	1	1	1	5
Tnmd ^{+/-} KO 2						
IVD 1	2	1	1	1	1	6
IVD 2	2	1	1	1	1	6
IVD 3	1	1	1	1	1	5
Tnmd ^{+/-} KO 3						
IVD 1	1	1	1	1	1	5
IVD 2	1	1	1	1	1	5
IVD 3	1	1	1	0	1	4
Tnmd ^{+/-} KO 4						
IVD 1	1	1	1	1	1	5
IVD 2	1	1	1	1	1	5
IVD 3	1	1	1	1	1	5
Tnmd ^{+/-} KO 5						
IVD 1	1	1	1	1	1	5
IVD 2	1	1	1	0	1	4
IVD 3	1	1	1	1	1	5
Tnmd ^{+/-} KO 6						
IVD 1	1	1	1	0	1	4
IVD 2	1	1	1	1	1	5
IVD 3	1	1	1	0	1	4
Tnmd ^{+/-} /Chm1 ^{+/-} 1						
IVD 1	2	1	2	1	1	7
IVD 2	2	1	1	1	1	6
IVD 3	2	1	2	1	1	7
Tnmd ^{+/-} /Chm1 ^{+/-} 2						
IVD 1	2	1	2	1	1	7
IVD 2	2	1	1	1	1	6
IVD 3	2	1	1	1	1	6
Tnmd ^{+/-} /Chm1 ^{+/-} 3						
IVD 1	1	1	1	1	1	5
IVD 2	2	1	1	1	1	6
IVD 3	2	1	2	1	1	7
Tnmd ^{+/-} /Chm1 ^{+/-} 4						
IVD 1	2	1	2	1	2	8
IVD 2	2	1	2	1	1	7
IVD 3	2	1	2	1	1	7
Tnmd ^{+/-} /Chm1 ^{+/-} 5						
IVD 1	2	1	1	1	1	6
IVD 2	2	1	2	1	1	7
IVD 3	2	1	2	1	1	7
Tnmd ^{+/-} /Chm1 ^{+/-} 6						
IVD 1	1	1	1	1	1	5
IVD 2	2	1	1	1	1	6
IVD 3	2	1	1	1	1	6